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Title 3—

The President

Proclamation 8513 of April 30, 2010

Jewish American Heritage Month, 2010

By the President of the United States of America

A Proclamation

In 1883, the Jewish American poet Emma Lazarus composed a sonnet, entitled "The New Colossus," to help raise funds for erecting the Statue of Liberty. Twenty years later, a plaque was affixed to the completed statue, inscribed with her words: "Give me your tired, your poor, your huddled masses yearning to breathe free...." These poignant words still speak to us today, reminding us of our Nation's promise as a beacon to all who are denied freedom and opportunity in their native lands.

Our Nation has always been both a haven and a home for Jewish Americans. Countless Jewish immigrants have come to our shores seeking better lives and opportunities, from those who arrived in New Amsterdam long before America's birth, to those of the past century who sought refuge from the horrors of pogroms and the Holocaust. As they have immeasurably enriched our national culture, Jewish Americans have also maintained their own unique identity. During Jewish American Heritage Month we celebrate this proud history and honor the invaluable contributions Jewish Americans have made to our Nation.

The Jewish American story is an essential chapter of the American narrative. It is one of refuge from persecution; of commitment to service, faith, democracy, and peace; and of tireless work to achieve success. As leaders in every facet of American life—from athletics, entertainment, and the arts to academia, business, government, and our Armed Forces—Jewish Americans have shaped our Nation and helped steer the course of our history. We are a stronger and more hopeful country because so many Jews from around the world have made America their home.

Today, Jewish Americans carry on their culture's tradition of "tikkun olam"—or "to repair the world"—through good deeds and service. As they honor and maintain their ancient heritage, they set a positive example for all Americans and continue to strengthen our Nation.

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by virtue of the authority vested in me by the Constitution and the laws of the United States, do hereby proclaim May 2010 as Jewish American Heritage Month. I call upon all Americans to observe this month with appropriate programs, activities, and ceremonies to celebrate the heritage and contributions of Jewish Americans.

IN WITNESS WHEREOF, I have hereunto set my hand this thirtieth day of April, in the year two thousand ten, and of the Independence of the United States of America the two hundred and thirty-fourth.

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Presidential Documents

Proclamation 8514 of April 30, 2010

National Day of Prayer, 2010

By the President of the United States of America

A Proclamation

Throughout our history, whether in times of great joy and thanksgiving, or in times of great challenge and uncertainty, Americans have turned to prayer. In prayer, we have expressed gratitude and humility, sought guidance and forgiveness, and received inspiration and assistance, both in good times and in bad.

On this day, let us give thanks for the many blessings God has bestowed upon our Nation. Let us rejoice for the blessing of freedom both to believe and to live our beliefs, and for the many other freedoms and opportunities that bring us together as one Nation. Let us ask for wisdom, compassion, and discernment of justice as we address the great challenges of our time.

We are blessed to live in a Nation that counts freedom of conscience and free exercise of religion among its most fundamental principles, thereby ensuring that all people of goodwill may hold and practice their beliefs according to the dictates of their consciences. Prayer has been a sustaining way for many Americans of diverse faiths to express their most cherished beliefs, and thus we have long deemed it fitting and proper to publicly recognize the importance of prayer on this day across the Nation.

Let us remember in our thoughts and prayers those suffering from natural disasters in Haiti, Chile, and elsewhere, and the people from those countries and from around the world who have worked tirelessly and selflessly to render aid. Let us pray for the families of the West Virginia miners, and the people of Poland who so recently and unexpectedly lost many of their beloved leaders. Let us pray for the safety and success of those who have left home to serve in our Armed Forces, putting their lives at risk in order to make the world a safer place. As we remember them, let us not forget their families and the substantial sacrifices that they make every day. Let us remember the unsung heroes who struggle to build their communities, raise their families, and help their neighbors, for they are the wellspring of our greatness. Finally, let us remember in our thoughts and prayers those people everywhere who join us in the aspiration for a world that is just, peaceful, free, and respectful of the dignity of every human being.

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by virtue of the authority vested in me by the Constitution and laws of the United States of America, do hereby proclaim May 6, 2010, as a National Day of Prayer. I call upon the citizens of our Nation to pray, or otherwise give thanks, in accordance with their own faiths and consciences, for our many freedoms and blessings, and I invite all people of faith to join me in asking for God's continued guidance, grace, and protection as we meet the challenges before us.

IN WITNESS WHEREOF, I have hereunto set my hand this thirtieth day of April, in the year of our Lord two thousand ten, and of the Independence of the United States of America the two hundred and thirty-fourth.

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Rules and Regulations

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Friday, May 7, 2010

This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

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DEPARTMENT OF AGRICULTURE

Farm Service Agency

7 CFR Parts 760 and 783

Commodity Credit Corporation

7 CFR Part 1416

RIN 0560–AH96

Tree Assistance Program

AGENCY: Farm Service Agency and Commodity Credit Corporation, USDA.

ACTION: Final rule.

SUMMARY: This rule implements specific requirements for the Tree Assistance Program (TAP) authorized by the Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill). TAP provides disaster assistance to eligible orchardists and nursery tree growers to replant or rehabilitate trees, bushes, and vines that were lost due to natural disaster. Orchardists and nursery tree growers who commercially raise trees, bushes, and vines for which there were mortality losses in excess of 15 percent, after adjustment for normal mortality, are eligible for TAP payments. Eligible losses must have occurred between January 1, 2008, and September 30, 2011. This rule specifies how the TAP payments are calculated and when producers may apply for benefits. This rule also removes regulations for prior tree disaster assistance programs.

DATES: Effective Date: May 7, 2010.

FOR FURTHER INFORMATION CONTACT: Steven Peterson, Branch Chief, Production, Emergencies and Compliance Division, Farm Service Agency (FSA), U.S. Department of Agriculture (USDA), Mail STOP 0517, 1400 Independence Avenue, SW., Washington, DC 20250–0517. Telephone: (202) 720–5172; e-mail: *Steve.Peterson@wdc.usda.gov.* Persons with disabilities who require alternative means for communication (Braille, large print, audiotape, *etc.*) should contact the USDA Target Center at (202) 720–2600 (voice and TDD).

SUPPLEMENTARY INFORMATION:

Background: This rule implements the specific requirements for TAP as authorized by the 2008 Farm Bill (Pub. L. 110–246). Sections 12033 and 15101 of the 2008 Farm Bill authorize the Secretary of Agriculture (Secretary) to assist eligible orchardists and nursery tree growers that have incurred tree, bush, or vine mortality losses in excess of 15 percent, adjusted for normal mortality, due to natural disaster. TAP is a cost-reimbursement program, which means that payments are calculated based on estimated actual costs to replace or rehabilitate lost or damaged trees, bushes, or vines. The replacement and rehabilitation activities must take place within 12 months after the application is approved. Payment is not made until the activities are completed.

Amendments to the 2008 Farm Bill contained in the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009 (Pub. L. 110–329), an Act to Amend the Commodity Provisions of the Food, Conservation, and Energy Act of 2008 and for other purposes (Pub. L. 110–398), and the American Recovery and Reinvestment Act of 2009 (Pub. L. 111–5, the Recovery Act) authorized minor changes in how TAP and the other standing disaster assistance programs are implemented. The basic core of the TAP is specified in the 2008 Farm Bill. The amendments extend the deadline for the required risk management "buy-in," discussed later in this document, exempt this rule from notice and comment rulemaking and Paperwork Reduction Act requirements, and allow the Secretary to provide equitable relief for producers who did not have risk management coverage.

TAP will be similar in scope to the 2005 Hurricane Tree Assistance Program specified in regulations in 7 CFR part 1416 and to the previous TAP authorized by the Farm Security and Rural Investment Act of 2002 (Pub. L. 107–171, commonly known as the 2002 Farm Bill) specified in regulations in 7 CFR part 783. The 2005 Hurricane TAP and TAP (as implemented by this rule) cover tree rehabilitation losses and practices that were not covered by the TAP authorized by the 2002 Farm Bill. The 2005 Hurricane TAP applied only in certain areas affected by hurricanes while this TAP and these regulations apply nationally. The previous programs were not subject to the adjusted gross income (AGI) limits and risk management purchase requirement that now apply to all the standing disaster programs authorized by the 2008 Farm Bill. TAP is now funded through the Agricultural Disaster Relief Trust Fund; the previous programs were limited to available funding. This rule implements the TAP regulations in 7 CFR part 760, subpart F, and removes the regulations for the previous two TAPs from 7 CFR part 783 and part 1416, subpart H.

General Eligibility Requirements

This rule implements the eligibility provisions for TAP, which is one of five Supplemental Agricultural Disaster Assistance programs authorized by the 2008 Farm Bill. Sections 12033 and 15101 of the 2008 Farm Bill authorize the Secretary to assist producers who have had crop and livestock losses due to adverse weather. FSA provides assistance through five different programs:

- Livestock Indemnity Program (LIP—referred to as Livestock Indemnity Payments in the 2008 Farm Bill),
- Livestock Forage Disaster Program (LFP),
- Emergency Assistance for Livestock, Honey Bees, and Farm-Raised Fish (ELAP),
- Supplemental Revenue Assistance Payments Program (SURE) (which covers losses to tree crops such as apples and citrus, but not the losses to trees covered by TAP), and
- Tree Assistance Program (TAP).

This rule implements TAP in 7 CFR part 760, subpart F. The LIP final rule, which was published in the **Federal Register** on July 2, 2009 (74 FR 31567–31578), revised 7 CFR part 760, subpart B, to provide the general eligibility requirements for all the Supplemental Agricultural Disaster Assistance programs including ELAP, LFP, LIP, SURE, and TAP. Subpart B specifies administration of the programs, general requirements to be an eligible producer, risk management purchase requirement, buy-in waivers, equitable relief, payment limitations, and other generally applicable requirements. Specific provisions for the other disaster assistance programs have been

implemented through separate rulemakings.

TAP will be administered by FSA using funds from the Agricultural Disaster Relief Trust Fund established under section 902 of the Trade Act of 1974 (19 U.S.C. 2497a). The disaster assistance programs authorized by the 2008 Farm Bill are permanent or "standing" programs that have similar scope to the previous ad hoc programs. The programs are provided for in two separate places in the 2008 Farm Bill. First, there is section 12033, which adds a new section 531 to the Federal Crop Insurance Act (7 U.S.C. 1501–1524). Second, there is section 15101, which adds sections 901 through 903 to the Trade Act of 1974. The provisions of the two sections as enacted are identical except that the provisions in Title XV of the 2008 Farm Bill contain the funding provisions for the program. Since then, there have been some amendments, but the two sections of the 2008 Farm Bill are considered to be interchangeable for the purposes of this rule, and an amendment to one is, as a practical matter, an amendment to the other.

The final rule uses the words "producer," "participant," and "eligible orchardist or nursery tree grower." "Producers" may apply for TAP. "Participants," who in most but not all cases are also "eligible orchardist or nursery tree growers," are those producers who meet the requirements to be eligible to receive TAP payments.

Payment Limitation

The 2008 Farm Bill limits how much a participant may receive from the Supplemental Agricultural Disaster Assistance programs.

In applying payment limitation for 2008 payments, subject to the provision of part 1400, no entity or individual can receive more than $100,000 per program year under TAP. This is an increase from the previous TAPs, which had a limit of $75,000 per year for payees who were considered separate payees under the part 1400 rules. For 2009 through 2011 payments, no individual or legal entity (excluding a joint venture or general partnership) may receive, directly or indirectly, more than $100,000 per program year under TAP. (A separate payment limit of $100,000 applies to total benefits that one person or legal entity may receive from LIP, LFP, ELAP, and SURE.)

For the purpose of determining payment limits, both indirect and direct benefits are counted by attribution. In the case of a legal entity, the same payment is attributed to the direct payee in the full amount, and to those that have an indirect interest in the entity commensurate with the amount of the interest. For example, under the attribution rules that apply to TAP, assume:

- Corporation A is in line to receive a $100,000 TAP payment,
- Corporation A is owned 50 percent by Individual A and 50 percent by Corporation B, and
- Corporation B is owned 30 percent by Individual B and 70 percent by Individual C.

If so, Corporation A, for payment limitation purposes would be considered to have received $100,000 and Individual C (who owns 70 percent of Corporation B, which owns half of Corporation A) would be considered to have indirectly benefitted by the amount of $35,000 (50 percent times 70 percent of the $100,000). Even though no part of the $100,000 was actually paid to Individual C, the amount of $35,000 would count against individual C's overall payment limitation from TAP. Assuming Individual C was already at the maximum payment limit, Individual C would not have been eligible to receive $35,000; as a result, the payment to Corporation A would be reduced by $35,000.

Additionally, a person or legal entity is limited to receiving payments on a cumulative total of 500 acres planted to trees, bushes, or vines that suffered losses occurring on or after January 1, 2008, but before October 1, 2011. The previous TAP authorized by the 2002 Farm Bill had the same acreage limit.

The amount of any payment for which a participant may be eligible under TAP may be reduced by any amount received by the participant for the same or any similar loss from any other USDA disaster assistance program.

In applying the limitation on AGI for 2008 payments, an individual or entity is ineligible for payment under TAP if the individual's or entity's average AGI exceeds $2.5 million for 2007, 2006, and 2005, under the provisions in 7 CFR part 1400 in effect for 2008. For 2009 through 2011 payments, the average AGI limitation provisions in 7 CFR part 1400 applicable to the Commodity Credit Corporation (CCC) commodity programs also apply to TAP. Specifically, for 2009 through 2011, a person or legal entity with an average adjusted gross nonfarm income, as defined in 7 CFR 1400.3, that exceeds $500,000 for the relevant base period will not be eligible to receive payments from TAP. Likewise, if a person with an indirect interest in a legal entity has an average nonfarm AGI over $500,000, then the payment to the legal entity will be reduced as calculated based on the percent of that person's indirect interest in the legal entity receiving the payment. For example, continuing with the assumptions in the example above, if Individual B had an average AGI that was over the limit, then the payment to Corporation A will be reduced by 15 percent (Individual B's 30 percent interest in Corporation B times Corporation B's 50 percent interest in Corporation A).

Payment and average AGI limits will be determined under regulations specified in 7 CFR part 1400 for CCC commodity programs. TAP is an FSA program, but the CCC regulations in 7 CFR part 1400 are adopted for this program. The relevant AGI period for TAP and the other disaster assistance programs for 2008 payments is the 3 calendar years that precede the program year involved, namely, 2005, 2006, and 2007. However, beginning with 2009, the AGI period is the 3 taxable years preceding the most immediately preceding complete taxable year. Thus for 2009 TAP benefits the base period would be the same as for 2008 benefits but would slide forward year by year in the subsequent years so that the base for 2010 benefits would be tax years 2006, 2007, and 2008.

The regulations in 7 CFR 1400.5 specify how payments will be attributed and how far the attribution will go. Attribution will be tracked through four levels of ownership in legal entities. The 2008 Farm Bill removes the previous "3 entity rule," so a person can now receive benefits attributed through an unlimited number of entities, subject to the payment limitation and the rules of attribution described in 7 CFR part 1400 and the text above. In addition to these limits, the 2008 Farm Bill imposes for TAP and other programs covered in part 760 certain special limitations on payments to individuals who are not citizens or to foreign corporations and these, which appear in the previously issued subpart B of part 763, are separate from the foreign person rules in 7 CFR part 1400. The limitations that apply in part 763 can be found specifically in 7 CFR 760.103(b).

Risk Management Purchase Requirement

To be eligible for TAP payments, producers must meet the risk management purchase requirement. The requirement is specified in 7 CFR 760.104. This is a new requirement; neither the 2005 Hurricane TAP nor the previous TAP required the purchase of crop insurance or NAP coverage.

The risk management purchase requirement specifies that eligible participants must have purchased insurance for each insurable crop on the

farm and for purposes of this program an individual or entity's farm is deemed to include the entirety of their farming operations no matter where located, in all counties and all states. A few exceptions allowed by the 2008 Farm Bill are discussed later in this section. An "insurable commodity" means an agricultural commodity for which the producer on the farm is eligible to obtain a policy or plan of insurance under the Federal Crop Insurance Act (FCIA) from the USDA's Risk Management Agency (RMA). A "noninsurable commodity" means a crop for which the eligible producers on a farm are eligible to obtain assistance through FSA's Noninsured Crop Disaster Assistance Program (NAP). In general, to be eligible for TAP payments, participants must have obtained crop insurance or NAP coverage, as may be applicable, for all of their crops.

Producers who did not purchase required coverage are not eligible for benefits unless an exception applies. Certain waivers for "socially disadvantaged farmers and ranchers," as well as "limited resource farmers and ranchers," and "beginning farmers or ranchers" are provided by the 2008 Farm Bill and specified in 7 CFR 760.107.

For the 2008 crop year, otherwise eligible producers who paid a certain buy-in fee were provided an exemption from the risk management purchase requirement that would otherwise apply if the buy-in fee was paid by September 16, 2008. By an amendment to the 2008 Farm Bill, a second buy-in permitted participants to buy-in for the 2008 crop year from February 17, 2009, up to May 18, 2009, to meet the risk management purchase requirement; however, the participant had to agree to buy crop insurance or NAP for the next crop year for the crops to which the buy-in applied. The 2008 buy-in fee was equal to the cost of the minimal catastrophic insurance coverage or NAP coverage, but did not, as with other buy-in exemptions in TAP, entitle the participant to such insurance or NAP coverage. Also, an amendment to the 2008 Farm Bill allows a 2009 crop buy-in if the 2009 Federal Crop Insurance Corporation (FCIC) sales closing date for a crop was prior to August 14, 2008. The deadline for the 2009 crop buy-in was January 12, 2009. In addition to these provisions, section 531(g)(5) of FCIA (and the corresponding provisions of the Trade Act of 1974; 7 U.S.C. 1531(g) and 19 U.S.C. 2497(g), respectively) have some more general provisions allowing the Secretary discretion to grant equitable relief to certain persons who lack coverage, as described below. The buy-in fees were different for 2008 and 2009.

If a producer is ineligible or otherwise barred from the risk management insurance program or NAP because of past violations and those insurance programs would otherwise be available to that producer absent such violations, that producer will also be ineligible for TAP.

Other circumstances preventing a producer from obtaining risk management coverage may be addressed on a case-by-case basis, and the Secretary or designee may determine a participant is eligible for TAP even if FCIA or NAP coverage was not timely obtained; 7 CFR 760.106, "Equitable Relief," provides for such relief. For example, equitable relief may, at USDA's discretion, be considered for participants who failed to meet the requirements of this rule because the 2008 Farm Bill was enacted after the closing date for purchasing the applicable insurance. Another example may be relief for a participant who made a late planting decision due to weather-related causes. Relief will not be considered or granted for producers who are in the RMA ineligibility tracking system as those persons by their own actions were unable to obtain insurance. Equitable relief is not an entitlement. A grant of such relief is discretionary in nature, and USDA's refusal to consider such relief or to grant a particular form of relief that is not specifically mandated by the 2008 Farm Bill or the program regulations will not be construed to be an adverse decision under either 7 CFR parts 11 or 780 (the common appeals regulations that apply to most FSA and CCC programs). There are, however, some cases in which the USDA National Appeals Division (NAD) has authority on its own to grant equitable relief and in all cases NAD, rather than FSA or CCC, decides the extent of its jurisdiction consistent with whatever authorities apply.

If an RMA pilot or Adjusted Gross Revenue (AGR) insurance program was the only insurance available in that area for that crop, buying that insurance program for that crop will satisfy the risk management purchase requirement for that crop. However, producers are not required to purchase pilot or AGR insurance program coverage in order to meet the risk management purchase requirement. Rather, producers can elect not to obtain pilot or AGR insurance program coverage and meet the risk management purchase requirement by obtaining either NAP coverage or by paying the buy-in fee, as may be applicable.

Producers who did not obtain risk management coverage for all eligible crops on a farm are ineligible for payment under TAP even if some crops had risk management coverage, unless an exception or waiver applies. The risk management purchase required for TAP eligibility refers to insurance on the crop and production, not on the underlying trees; further, the risk management purchase requirement includes crops that are not eligible for TAP. For example, if a producer's farm produces insured blueberries, insured apples, and corn, to be eligible for TAP payment the producer must either buy coverage on the corn or have made a "buy-in," when such option was available as specified in 7 CFR part 760, subpart B. Producers, who meet all the eligibility requirements, including risk management coverage, will qualify for payment. A producer who does not meet the risk management purchase requirement will not be eligible.

Eligible Losses and Eligible Producers for TAP

The 2008 Farm Bill provisions require TAP cost share payments to be made for eligible losses due to natural disasters. TAP provides a payment based on 70 percent of the cost of replacing trees, bushes, and vines, and 50 percent of other costs including removing, pruning, or salvaging damaged trees, bushes, and vines, or preparing the land to plant new ones. The payment eligibility "trigger" is mortality losses in excess of 15 percent, adjusted for normal damage and mortality. Normal mortality losses are those associated with the normal upkeep of the orchard or nursery in the region. Damage losses are not eligible for payment unless the 15 percent mortality trigger is met. The eligible mortality must have occurred between January 1, 2008, and September 30, 2011, due to natural disaster, as determined by the Secretary or his designee, during the calendar year for which benefits are requested, including losses due to plant disease, insect infestation, drought, fire, freeze, flood, earthquake, and lightning. As the preceding sentence suggests, "plant disease" for this program is, under the terms of the 2008 Farm Bill, considered to be a natural disaster. Commercially-grown trees, vines, and bushes are eligible. All the provisions described in this paragraph, which are implemented in this rule, are provisions specified in the 2008 Farm Bill over which FSA has little or no discretion.

The details in this rule on acceptable documentation of loss and the application process for payment are discretionary provisions. FSA based the

discretionary provisions of the program as specified in this rule on the rules and policies used for previous TAPs, because those rules and policies are known to the public and because they have worked well to provide benefits for the type of loss involved in this program.

The scope of TAP is substantially similar to the previous TAPs, with the following exceptions:

- Payment limitation and the risk management purchase requirement from the 2008 Farm Bill apply; the previous programs had a lower payment limit and did not have a risk management purchase requirement.
- TAP payment is now calculated based on 70 percent of the qualifying loss (the loss above 15 percent in excess of normal mortality); the previous programs provided payment based on 75 percent of that amount.
- TAP now also includes a 50 percent payment for removing or rehabilitating trees, bushes, and vines that were damaged; the previous program in 7 CFR part 783 for the TAP authorized by the 2002 Farm Bill did not have this provision but the 2005 Hurricane TAP in 7 CFR part 1416 included a 75 percent payment for such activities.
- Nursery tree losses are now eligible for TAP payments; the previous program in 7 CFR part 783 did not have this provision but the 2005 Hurricane TAP in 7 CFR part 1416 did. Nursery trees include ornamental, fruit, nut, or Christmas trees produced for commercial sale.
- TAP is funded through the Agricultural Disaster Relief Trust Fund; the previous programs were limited to available funding.

TAP payments will be calculated using cost share rates for the specific type of tree, bush, or vine lost or damaged and practice required to replant the stand or rehabilitate existing trees, bushes, or vines. The calculations will be made using FSA-approved categories of plants and practices. The categories will be the same as previous TAPs.

The threshold for TAP payment eligibility is a mortality loss to a stand of trees, bushes, or vines in excess of 15 percent above normal mortality. That is the same loss threshold as the previous programs. Normal losses, losses below the 15 percent threshold, and losses due to causes other than natural disaster will not be eligible for payment. For example, if 80 percent of the trees in the stand are lost, and normal mortality in that area for that type of tree is 2 percent, then payment will be calculated on the loss above 17 percent, which would be 63 percent. Payment would be equal to 70 percent of the costs to replace 63 percent of the original stand. If the stand was a total loss (100 percent loss), then payment would be equal to 70 percent of the costs to replace 83 percent of that stand (100 percent minus 17 percent).

The 2008 Farm Bill specifies that TAP is for losses due to "natural disaster," which the 2008 Farm Bill defines as "plant disease, insect infestation, drought, fire, freeze, flood, earthquake, lightning, or other occurrence, as determined by the Secretary." An eligible "other occurrence" will be determined by FSA's Deputy Administrator for Farm Programs (Deputy Administrator) on behalf of the Secretary. FSA has the authority to determine the eligibility of tree, bush, or vine losses caused by or categorized as an "other occurrence" depending on the disaster event resulting in the loss. This is not a change from the previous TAPs. Loss claims will be verified based on a physical inspection of the loss by an FSA representative.

Generally under this new TAP, eligible orchardists or nursery tree growers are producers who are considered to have planted the trees, bushes, or vines for commercial purposes for the annual production of a crop and who owned the stand of trees, bushes, or vines at the time the natural disaster occurred. The owner of the orchard will be considered to be the person who had planted the trees even though some of those trees might have been planted before the orchard was purchased. For clean-up expenses, such as pruning, the eligible producer may be a party who was leasing the trees at the time of the disasters. Also, the rule provides that in the event of a transfer of the eligible tree after the disaster, the successor may qualify for benefits in lieu of the preceding party if certain conditions are met. These rules appear to be consistent with the intent of the 2008 Farm Bill to provide benefits for all nurseries with otherwise qualifying losses and to provide for the continuing health of existing orchards that have suffered those losses.

Applying for TAP Payment; TAP Payment Calculations

There are three basic steps for a producer to obtain a TAP payment. The first step is to file an application at the FSA county office within 90 calendar days of the disaster event or date upon which the loss of trees, bushes, or vines is apparent to the producer. Producers who suffered a potentially eligible loss before this rule was published in the **Federal Register** must provide an application to the FSA county office within 60 calendar days after this rule is published.

The second step is a field visit to verify losses. After FSA receives the application, FSA staff will make a field visit and validate which practices are appropriate to address the losses. Upon verification, FSA will inform the producer of the approved eligible practices and estimated payment.

The third step is to complete the approved practices. The practices must be completed within 12 months of FSA approval. Payment will be made after the practices are completed.

Producers that suffer multiple losses during the calendar year may file multiple applications for payment. This rule specifies the documents that are required to show that practices are complete, such as receipts for labor costs, equipment rental, and purchases of seedlings or cuttings.

The TAP payment will be calculated based on the actual costs of the approved practices, or the rates established by the Deputy Administrator for the practices, whichever compensation amount is lower. The payment rate for replanting and replacement of eligible trees (those which involve greater than a 15 percent loss adjusted for normal mortality), bushes, or vines is 70 percent of the producer's actual costs so long as that 70 percent does not exceed the FSA approved rate for the practices involved and if 70 percent of the actual cost exceeds that rate then the producer will receive the FSA rate and no more. The rate for rehabilitation of eligible trees, bushes, or vines is generally 50 percent of the cost of pruning, removal, and other costs incurred for salvaging the existing plants, or in the case of plant mortality, to prepare land for replanting but here also the 50 percent amount cannot exceed the maximum allowable FSA rate. The 50 percent is only payable, however, for losses that reflect a greater than 15 percent loss taking into account normal mortality and damage.

A producer can be eligible for both categories of payment. For example, a producer who replaces lost trees can apply for both a 50 percent cost share payment to remove the lost trees and prepare the land, and a 70 percent cost share for the seedlings and labor to plant the new ones. If, for example, not all the vines in a stand are lost, a producer can apply for the 70 percent cost share to replace lost vines and the 50 percent cost share to prune and rehabilitate less severely damaged ones. If a practice, such as site preparation, is needed to both replant and rehabilitate trees, bushes, or vines, the producer must document the expenses

attributable to replanting versus rehabilitation. If that is not possible because, for example, the activity took place several years ago and the contractor who performed the work cannot provide a detailed breakdown, the FSA county committee will pro-rate payment based on physical inspection of the loss, damage, replanting, and rehabilitation. Producers who did not plant the trees, bushes, or vines that were lost, but have a history of commercial production, can be eligible for the 50 percent cost share category to remove lost trees and rehabilitate the damaged ones.

FSA, through the FSA State offices, will obtain recommendations from applicable State orchard and nursery organizations, State Cooperative Extension Services or, as applicable, the National Institute of Food and Agriculture, and other knowledgeable and credible sources, as FSA deems necessary and appropriate, to establish the normal mortality rate and damage rate for each type of tree, bush, or vine on a State-by-State basis. (Under the previous TAPs, normal mortality rates established for most eligible plant species were about one to three percent per year.)

SURE and TAP

In some cases, losses that are not eligible under TAP may be eligible for SURE payments, and vice versa. The SURE program covers losses to tree, vine, and bush crops that were covered by insurance or NAP, while TAP provides cost reimbursement payments to offset the cost of replacing or rehabilitating lost or damaged trees, vines, and bushes. The two programs pay for different types of losses, but if there were any overlap, benefits could be adjusted as needed.

The risk management purchase requirement for SURE includes some exceptions, such as not requiring risk management coverage for minor crops that do not apply to TAP. Therefore, risk management coverage that qualifies a producer for SURE may not qualify that same producer for TAP. If the risk management purchase does meet the requirements of both SURE and TAP, the producer may be eligible for payment under both programs.

Miscellaneous TAP Provisions

All owners, stands, and losses must meet the eligibility requirements provided in this rule. False certifications can carry serious consequences. FSA will validate information provided on applications through random spot-checks.

As specified in 7 CFR part 760 subpart B, participants receiving disaster assistance payments must keep records and supporting documentation for 3 years following the end of the year in which the application for payment was filed. This discretionary recordkeeping requirement is consistent with other FSA rules and programs, as well as with previous similar disaster assistance programs. Participants must allow FSA representatives to conduct a site inspection to verify that the TAP-funded practices have been completed.

Section 760.110 specifies that the appeal regulations specified in 7 CFR parts 11 and 780 apply. It also specifies that for all the new standing disaster programs, matters requiring FSA determinations that are not in response to, or result from, an individual disputable set of facts in a specific individual participant's application, are not matters that can be appealed under 7 CFR parts 11 or 780. These include, but are not limited to, general statutory or regulatory provisions that apply to similarly situated participants, national average payment prices, regions, crop definition, average yields, or similar items.

As specified in 7 CFR part 760 subpart B, restrictions apply to TAP including, but not limited to, benefit ineligibility resulting from violations of the highly erodible land and wetland conservation provisions specified in 7 CFR part 12.

Notice and Comment

The Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009 made the exemption from notice and comments provisions, contained in section 1601(c)(2) of the 2008 Farm Bill, applicable in implementing section 12033 of the 2008 Farm Bill. To the extent relevant, the exemption applies, we believe, to the corresponding provisions enacted in section 15101 since they are identical excerpt for the provisions for funding in 15101, which do not appear at all in section 12033. Otherwise, the provisions of the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009 would have no meaning. Therefore, these regulations are exempt from the notice and comment requirements of the Administrative Procedures Act (5 U.S.C. 553), as specified in section 1601(c)(2) of the 2008 Farm Bill, which requires that the regulations be promulgated and administered without regard to the notice and comment provisions of 5 U.S.C. 553 or the Statement of Policy of the Secretary of Agriculture effective July 24, 1971, (36 FR 13804) relating to notices of proposed rulemaking and public participation in rulemaking.

Effective Date

In making this final rule exempt from notice and comment through section 1601(c)(2) of the 2008 Farm Bill, using the administrative procedure provisions in 5 U.S.C. 553, FSA finds that there is good cause for making this rule effective less than 30 days after publication in the **Federal Register.** This rule allows FSA to provide benefits to producers who suffered tree, bush, or vine losses caused by natural disasters. Therefore, to begin providing benefits to producers as soon as possible, this final rule is effective when published in the **Federal Register.**

Executive Order 12866

This rule has been designated as not significant under Executive Order 12866 and has not been reviewed by the Office of Management and Budget.

Regulatory Flexibility Act

This rule is not subject to the Regulatory Flexibility Act since FSA is not required to publish a notice of proposed rulemaking for this rule.

Environmental Evaluation

In May 2007, FSA prepared a Final Programmatic Environmental Assessment (PEA) to evaluate the environmental consequences associated with implementing the changes to the Tree Assistance Program in 2005 under Title X Subtitle C of the 2002 Farm Bill using funding authorized by Title III Section 3013 of the Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Pub. L. 109–234). In consideration of the analysis documented in the PEA and the reasons outlined in the Finding of No Significant Impact (FONSI), which was published in the **Federal Register** on April 13, 2007 (72 FR 18622–18623), consistent with the provisions of the National Environmental Policy Act (NEPA, 42 U.S.C. 4321–4347), the regulations of the Council on Environmental Quality (40 CFR parts 1500–1508), and FSA regulations for compliance with NEPA (7 CFR part 799), FSA has determined that the implementation of TAP consistent with the provisions of the 2008 Farm Bill, would not constitute a major Federal action that would significantly affect the quality of the human environment. Therefore, an environmental impact statement will not be prepared. The Final Programmatic Environmental Assessment (PEA) can be viewed at:

http://www.fsa.usda.gov/Internet/FSA_File/final_tap_ea5_2007.pdf and the FONSI can be viewed at: *http://www.fsa.usda.gov/Internet/FSA_File/tap_fonsi.pdf.*

Executive Order 12372

This program is not subject to Executive Order 12372, which requires consultation with State and local officials. See the notice related to 7 CFR part 3015, subpart V, published in the **Federal Register** on June 24, 1983 (48 FR 29115).

Executive Order 12988

This rule has been reviewed under Executive Order 12988. This rule is not retroactive and it does not preempt State or local laws, regulations, or policies unless they present an irreconcilable conflict with this rule. Before any judicial action may be brought regarding the provisions of this rule the administrative appeal provisions of 7 CFR parts 11 and 780 must be exhausted.

Executive Order 13132

The policies contained in this rule do not have any substantial direct effect on States, on the relationship between the Federal Government and States, or on the distribution of power and responsibilities among the various levels of government. Nor does this rule impose substantial direct compliance costs on State and local governments. Therefore, consultation with the states is not required.

Executive Order 13175

The policies contained in this rule do not impose substantial unreimbursed direct compliance costs on Indian tribal governments or have tribal implications that preempt tribal law.

Unfunded Mandates

This rule contains no Federal mandates under the regulatory provisions of Title II of the Unfunded Mandate Reform Act of 1995 (UMRA) for State, local, and tribal government or the private sector. In addition, FSA was not required to publish a notice of proposed rule making for this rule. Therefore, this rule is not subject to the requirements of sections 202 and 205 of the UMRA.

Federal Assistance Programs

The title and number of the Federal assistance program in the Catalog of Federal Domestic Assistance to which this rule applies is 10.082—Tree Assistance Program.

Paperwork Reduction Act

The regulations in this rule are exempt from the requirements of the Paperwork Reduction Act (44 U.S.C. Chapter 35), as specified in section 1601(c)(2) of the 2008 Farm Bill, which provides that these regulations be promulgated and administered without regard to the Paperwork Reduction Act.

E-Government Act Compliance

FSA is committed to complying with the E-Government Act, to promote the use of the Internet and other information technologies to provide increased opportunities for citizen access to Government information and services, and for other purposes.

List of Subjects

7 CFR Part 760

Dairy products, Indemnity payments, Pesticides and pests, Reporting and recordkeeping requirements.

7 CFR Part 783

Disaster assistance, Reporting and recordkeeping requirements, Trees.

7 CFR Part 1416

Agriculture, Citrus fruits, Disaster assistance, Fish, Livestock, Nursery stock.

■ For the reasons discussed above, the Farm Service Agency and Commodity Credit Corporation, USDA, amends 7 CFR parts 760, 783, and 1416 as follows:

PART 760—INDEMNITY PAYMENT PROGRAMS

■ 1. The authority citation for part 760 continues to read as follows:

Authority: 7 U.S.C. 4501; 7 U.S.C. 1531, 16 U.S.C. 3801, note, and 19 U.S.C. 2497; Title III, Pub. L. 109–234, 120 Stat. 474; Title IX, Pub. L. 110–28, 121 Stat. 211; and Sec. 748, Pub. L. 111–80, 123 Stat. 2131.

■ 2. Add Subpart F to read as follows:

Subpart F—Tree Assistance Program

Sec.
760.500 Applicability.
760.501 Administration.
760.502 Definitions.
760.503 Eligible losses.
760.504 Eligible orchardists and nursery tree growers.
760.505 Application.
760.506 Payment calculation.
760.507 Obligations of a participant.

Subpart F—Tree Assistance Program

§ 760.500 Applicability.

(a) This subpart establishes the terms and conditions under which the Tree Assistance Program (TAP) will be administered under Titles XII and XV of the Food, Conservation, and Energy Act of 2008 (Pub. L. 110–246, the 2008 Farm Bill).

(b) Eligible orchardists and nursery tree growers will be compensated as specified in § 760.506 for eligible tree, bush, and vine losses in excess of 15 percent mortality, or, where applicable, 15 percent damage, adjusted for normal mortality and normal damage, that occurred in the calendar year for which benefits are being requested and as a direct result of a natural disaster.

§ 760.501 Administration.

The program will be administered as specified in § 760.102 and in this subpart.

§ 760.502 Definitions.

The following definitions apply to this subpart. The definitions in parts 718 and 1400 of this title also apply, except where they conflict with the definitions in this section.

Bush means, a low, branching, woody plant, from which at maturity of the bush, an annual fruit or vegetable crop is produced for commercial purposes, such as a blueberry bush. The definition does not cover plants that produce a bush after the normal crop is harvested such as asparagus.

Commercial use means used in the operation of a business activity engaged in as a means of livelihood for profit by the eligible producer.

County committee means the respective FSA committee.

County office means the FSA or U.S. Department of Agriculture (USDA) Service Center that is responsible for servicing the farm on which the trees, bushes, or vines are located.

Cutting means a piece of a vine which was planted in the ground to propagate a new vine for the commercial production of fruit, such as grapes, kiwi fruit, passion fruit, or similar fruit.

Deputy Administrator or DAFP means the Deputy Administrator for Farm Programs, FSA, USDA, or the designee.

Eligible nursery tree grower means a person or legal entity that produces nursery, ornamental, fruit, nut, or Christmas trees for commercial sale.

Eligible orchardist means a person or legal entity that produces annual crops from trees, bushes, or vines for commercial purposes.

FSA means the Farm Service Agency.

Lost means, with respect to the extent of damage to a tree or other plant, that the plant is destroyed or the damage is such that it would, as determined by FSA, be more cost effective to replace the tree or other plant than to leave it in its deteriorated, low-producing state.

Natural disaster means plant disease, insect infestation, drought, fire, freeze,

flood, earthquake, lightning, or other natural occurrence of such magnitude or severity so as to be considered disastrous, as determined by the Deputy Administrator.

Normal damage means the percentage, as established for the area by the FSA State Committee, of trees, bushes, or vines in the individual stand that would normally be damaged during a calendar year for a producer.

Normal mortality means percentage, as established for the area by the FSA State Committee, of expected lost trees, bushes, or vines in the individual stand that normally occurs during a calendar year for a producer. This term refers to the number of whole trees, bushes, or vines that are destroyed or damaged beyond rehabilitation. Mortality does not include partial damage such as lost tree limbs.

Seedling means an immature tree, bush, or vine that was planted in the ground or other growing medium to grow a new tree, bush, or vine for commercial purposes.

Stand means a contiguous acreage of the same type of trees (including Christmas trees, ornamental trees, nursery trees, and potted trees), bushes (including shrubs), or vines.

State committee means the respective FSA committee.

Tree means a tall, woody plant having comparatively great height, and a single trunk from which an annual crop is produced for commercial purposes, such as a maple tree for syrup, papaya tree, or orchard tree. Trees used for pulp or timber are not considered eligible trees under this subpart.

Vine means a perennial plant grown under normal conditions from which an annual fruit crop is produced for commercial market for human consumption, such as grape, kiwi, or passion fruit, and that has a flexible stem supported by climbing, twining, or creeping along a surface. Perennials that are normally propagated as annuals such as tomato plants, biennials such as the plants that produce strawberries, and annuals such as pumpkins, squash, cucumbers, watermelon, and other melons, are excluded from the term vine in this subpart.

§ 760.503 Eligible losses.

(a) To be considered an eligible loss under this subpart:

(1) Eligible trees, bushes, or vines must have been lost or damaged as a result of natural disaster as determined by the Deputy Administrator;

(2) The individual stand must have sustained a mortality loss or damage, as the case may be, loss in excess of 15 percent after adjustment for normal mortality or damage;

(3) The loss could not have been prevented through reasonable and available measures; and

(4) The trees, bushes, or vines, in the absence of a natural disaster, would not normally have required rehabilitation or replanting within the 12-month period following the loss.

(b) The damage or loss must be visible and obvious to the county committee representative. If the damage is no longer visible, the county committee may accept other evidence of the loss as it determines is reasonable.

(c) The county committee may require information from a qualified expert, as determined by the county committee, to determine extent of loss in the case of plant disease or insect infestation.

(d) The Deputy Administrator will determine the types of trees, bushes, and vines that are eligible.

(e) An individual stand that did not sustain a sufficient loss as specified in paragraph (a)(2) of this section is not eligible for payment, regardless of the amount of loss sustained.

§ 760.504 Eligible orchardists and nursery tree growers.

(a) To be eligible for TAP payments, the eligible orchardist or nursery tree grower must:

(1) Have planted, or be considered to have planted (by purchase prior to the loss of existing stock planted for commercial purposes) trees, bushes, or vines for commercial purposes, or have a production history, for commercial purposes, of planted or existing trees, bushes, or vines;

(2) Have suffered eligible losses of eligible trees, bushes, or vines occurring between January 1, 2008, and September 30, 2011, as a result of a natural disaster or related condition;

(3) Meet the risk management purchase requirement as specified in § 760.104 or the waiver requirements in §§ 760.105 or 760.107; and

(4) Have continuously owned the stand from the time of the disaster until the time that the TAP application is submitted.

(b) A new owner of an orchard or nursery who does not meet the requirements of paragraph (a) of this section may receive TAP payments approved for the previous owner of the orchard or nursery and not paid to the previous owner, if the previous owner of the orchard or nursery agrees to the succession in writing and if the new owner:

(1) Acquires ownership of trees, bushes, or vines for which benefits have been approved;

(2) Agrees to complete all approved practices that the original owner has not completed; and

(3) Otherwise meets and assumes full responsibility for all provisions of this part, including refund of payments made to the previous owner, if applicable.

(c) A producer seeking payment must not be ineligible under the restrictions applicable to citizenship and foreign corporations contained in § 760.103(b) and must meet all other requirements of subpart B of this part.

(d) Federal, State, and local governments and agencies and political subdivisions thereof are not eligible for payment under this subpart.

§ 760.505 Application.

(a) To apply for TAP, a producer that suffered eligible tree, bush, or vine losses that occurred:

(1) During calendar years 2008, 2009, or 2010, prior to May 7, 2010, must provide an application for payment and supporting documentation to FSA no later than July 6, 2010.

(2) On or after May 7, 2010, must provide an application for payment and supporting documentation to FSA within 90 calendar days of the disaster event or date when the loss of trees, bushes, or vines is apparent to the producer.

(b) The producer must submit the application for payment within the time specified in paragraph (a) of this section to the FSA administrative county office that maintains the producer's farm records for the agricultural operation.

(c) A complete application includes all of the following:

(1) A completed application form provided by FSA;

(2) An acreage report for the farming operation as specified in part 718, subpart B, of this chapter;

(3) Subject to verification and a loss amount determined appropriate by the county committee, a written estimate of the number of trees, bushes, or vines lost or damaged that is certified by the producer or a qualified expert, including the number of acres on which the loss occurred; and

(4) Sufficient evidence of the loss to allow the county committee to calculate whether an eligible loss occurred.

(d) Before requests for payment will be approved, the county committee:

(1) Must make an eligibility determination based on a complete application for assistance;

(2) Must verify actual qualifying losses and the number of acres involved by on-site visual inspection of the land and the trees, bushes, or vines;

(3) May request additional information and may consider all

relevant information in making its determination; and

(4) Must verify actual costs to complete the practices, as documented by the producer.

§ 760.506 Payment calculations.

(a) Payment to an eligible orchardist or nursery tree grower for the cost of replanting or rehabilitating trees, bushes, or vines damaged or lost due to a natural disaster, in excess of 15 percent damage or mortality (adjusted for normal damage or mortality), will be calculated as follows:

(1) For the cost of planting seedlings or cuttings, to replace lost trees, bushes, or vines, the lesser of:

(i) 70 percent of the actual cost of the practice, or

(ii) The amount calculated using rates established by the Deputy Administrator for the practice.

(2) For the cost of pruning, removal, and other costs incurred for salvaging damaged trees, bushes, or vines, or in the case of mortality, to prepare the land to replant trees, bushes, or vines, the lesser of:

(i) 50 percent of the actual cost of the practice, or

(ii) The amount calculated using rates established by the Deputy Administrator for the practice.

(b) An orchardist or nursery tree grower that did not plant the trees, bushes, or vines, but has a production history for commercial purposes on planted or existing trees and lost the trees, bushes, or vines as a result of a natural disaster, in excess of 15 percent damage or mortality (adjusted for normal damage or mortality), will be eligible for the salvage, pruning, and land preparation payment calculation as specified in paragraph (a)(2) of this section. To be eligible for the replanting payment calculation as specified in paragraph (a)(1) of this section, the orchardist or nursery grower who did not plant the stock must be a new owner who meets all of the requirements of § 760.504(b) or be considered the owner of the trees under provisions appearing elsewhere in this subpart.

(c) Eligible costs for payment calculation include costs for:

(1) Seedlings or cuttings, for tree, bush, or vine replanting;

(2) Site preparation and debris handling within normal horticultural practices for the type of stand being re-established, and necessary to ensure successful plant survival;

(3) Pruning, removal, and other costs incurred to salvage damaged trees, bushes, or vines, or, in the case of tree mortality, to prepare the land to replant trees, bushes, or vines;

(4) Chemicals and nutrients necessary for successful establishment;

(5) Labor to plant seedlings or cuttings as determined reasonable by the county committee; and

(6) Labor used to transplant existing seedlings established through natural regeneration into a productive tree stand.

(d) The following costs are not eligible:

(1) Costs for fencing, irrigation, irrigation equipment, protection of seedlings from wildlife, general improvements, re-establishing structures, and windscreens.

(2) Any other costs not listed in paragraphs (c)(1) through (c)(6) of this section, unless specifically determined eligible by the Deputy Administrator.

(e) Producers must provide the county committee documentation of actual costs to complete the practices, such as receipts for labor costs, equipment rental, and purchases of seedlings or cuttings.

(f) When lost stands are replanted, the types planted may be different from those originally planted. The alternative types will be eligible for payment if the new types have the same general end use, as determined and approved by the county committee. Payments for alternative types will be based on the lesser of rates established to plant the types actually lost or the cost to establish the alternative used. If the type of plantings, seedlings, or cuttings differs significantly from the types lost, the costs may not be approved for payment.

(g) When lost stands are replanted, the types planted may be planted on the same farm in a different location than the lost stand. To be eligible for payment, site preparation costs for the new location must not exceed the cost to re-establish the original stand in the original location.

(h) Eligible orchardists or nursery tree growers may elect not to replant the entire eligible stand. If so, the county committee will calculate payment based on the number of qualifying trees, bushes, or vines actually replanted.

(i) If a practice, such as site preparation, is needed to both replant and rehabilitate trees, bushes, or vines, the producer must document the expenses attributable to replanting versus rehabilitation. The county committee will determine whether the documentation of expenses detailing the amounts attributable to replanting versus rehabilitation is acceptable. In the event that the county committee determines the documentation does not include acceptable detail of cost allocation, the county committee will pro-rate payment based on physical inspection of the loss, damage, replanting, and rehabilitation.

(j) The cumulative total quantity of acres planted to trees, bushes, or vines for which a producer may receive payment under this part for losses that occurred between January 1, 2008, and September 30, 2011, will not exceed 500 acres.

§ 760.507 Obligations of a participant.

(a) Eligible orchardists and nursery tree growers must execute all required documents and complete the TAP-funded practice within 12 months of application approval.

(b) Eligible orchardist or nursery tree growers must allow representatives of FSA to visit the site for the purposes of certifying compliance with TAP requirements.

(c) Producers who do not meet all applicable requirements and obligations will not be eligible for payment.

PART 783—[REMOVED]

■ 3. Under the authority of 7 U.S.C. 8201 *et seq.,* 7 CFR part 783 is removed.

PART 1416—2006 EMERGENCY AGRICULTURAL DISASTER ASSISTANCE PROGRAMS

■ 4. The authority citation of part 1416 continues to read as follows:

Authority: Title III, Pub. L. 109–234, 120 Stat. 474; 16 U.S.C. 3801, note.

Subpart H—[Removed]

■ 5. Subpart H, consisting of §§ 1416.700 through 1416.705, is removed.

Signed in Washington, DC, on May 3, 2010.

Jonathan W. Coppess,

Administrator, Farm Service Agency, and Executive Vice President, Commodity Credit Corporation.

[FR Doc. 2010–10800 Filed 5–6–10; 8:45 am]

BILLING CODE 3410–05–P

DEPARTMENT OF JUSTICE

Bureau of Prisons

28 CFR Part 540

[BOP–1149]

RIN 1120–AB49

Inmate Communication With News Media: Removal of Byline Regulations

AGENCY: Bureau of Prisons, Justice Department.

ACTION: Interim final rule; technical correction.

SUMMARY: This document corrects the **DATES** section of an interim final rule published on Friday, April 23, 2010. In the interim rule, the Bureau of Prisons (Bureau) revised its regulations regarding inmate contact with the community to remove two current Bureau regulations that prohibit inmates from publishing under a byline, due to a recent court ruling invalidating Bureau regulation language containing this prohibition. The April 23, 2010, publication inadvertently omitted an effective date.

DATES: The interim final rule published April 23, 2010, at 75 FR 21163, is effective May 7, 2010. Comments are due by June 22nd, 2010.

ADDRESSES: Rules Unit, Office of General Counsel, Bureau of Prisons, 320 First Street, NW., Washington, DC 20534.

FOR FURTHER INFORMATION CONTACT: Sarah Qureshi, Office of General Counsel, Bureau of Prisons, phone (202) 307–2105.

SUPPLEMENTARY INFORMATION: This document corrects the **DATES** section of the publication on Friday, April 23, 2010 (75 FR 21163). The **DATES** section of that document should read as follows: "This rule is effective on [insert date of publication]. Comments are due by June 22nd, 2010." However, because that document did not include an effective date, this document announces the effective date of those provisions.

List of Subjects in 28 CFR Part 540

Prisoners.

Harley G. Lappin,

Director, Bureau of Prisons.

[FR Doc. 2010–10727 Filed 5–6–10; 8:45 am]

BILLING CODE P

DEPARTMENT OF DEFENSE

Department of the Navy

32 CFR Part 706

Certifications and Exemptions Under the International Regulations for Preventing Collisions at Sea, 1972; Correction

Correction

In rule document 2010–4666 beginning on page 10413 in the issue of Monday, March 8, 2010 make the following correction:

§706.2 [Corrected]

On page 10413, in §706.2, in the table, under the heading "Number", "CG 59" should read "CG 58".

[FR Doc. C1–2010–4666 Filed 5–6–10; 8:45 am]

BILLING CODE 1505–01–D

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 165

[Docket No. USCG–2010–0162]

RIN 1625–AA00

Safety Zone; KFOG Kaboom, Fireworks Display, San Francisco, CA

AGENCY: Coast Guard, DHS.

ACTION: Temporary final rule.

SUMMARY: The Coast Guard is establishing a temporary safety zone in the navigable waters in San Francisco Bay in San Francisco, CA, in support of the KFOG Kaboom Fireworks Display. This safety zone is established to ensure the safety of participants and spectators from the dangers associated with the pyrotechnics. Unauthorized persons or vessels are prohibited from entering into, transiting through, or remaining in the safety zone without permission of the Captain of the Port or his designated representative.

DATES: This rule is effective from 7:45 a.m. on May 20, 2010, through 9:30 p.m. on May 22, 2010.

ADDRESSES: Documents indicated in this preamble as being available in the docket are part of docket USCG–2010–0162 and are available online by going to *http://www.regulations.gov,* inserting USCG–2010–0162 in the "Keyword" box, pressing Enter, and then clicking "Search." They are also available for inspection or copying at the Docket Management Facility (M–30), U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: If you have questions on this temporary rule, call Ensign Liezl Nicholas at 415–399–7442, or e-mail *D11–PF–MarineEvents@uscg.mil.* If you have questions on viewing the docket, call Renee V. Wright, Program Manager, Docket Operations, telephone 202–366–9826.

SUPPLEMENTARY INFORMATION:

Regulatory Information

The Coast Guard is issuing this temporary final rule without prior notice and opportunity to comment pursuant to authority under section 4(a) of the Administrative Procedure Act (APA) (5 U.S.C. 553(b)). This provision authorizes an agency to issue a rule without prior notice and opportunity to comment when the agency for good cause finds that those procedures are "impracticable, unnecessary, or contrary to the public interest." Under 5 U.S.C. 553(b)(B), the Coast Guard finds that good cause exists, as publishing a notice of proposed rulemaking (NPRM) with respect to this rule would be impracticable because the event would occur before the rulemaking process would be completed. Because of the dangers posed by the pyrotechnics used in these fireworks displays, the safety zones are necessary to provide for the safety of event participants, spectators, spectator craft, and other vessels transiting the event area. For the safety concerns noted, it is in the public interest to have these regulations in effect during the event.

Under 5 U.S.C. 553(d)(3), the Coast Guard finds that good cause exists for making this rule effective less than 30 days after publication in the **Federal Register.** Any delay in the effective date of this rule would expose mariners to the dangers posed by the pyrotechnics used in the fireworks display.

Basis and Purpose

The radio station KFOG will sponsor the KFOG Kaboom Fireworks Display on May 22, 2010, on the navigable waters of San Francisco Bay, CA. The fireworks display is meant for entertainment purposes. This safety zone establishes a temporary restricted area on the waters surrounding the fireworks launch site during loading of the pyrotechnics, and during the fireworks displays. This restricted area around the launch site is necessary to protect spectators, vessels, and other property from the hazards associated with the pyrotechnics on the fireworks barges. The Coast Guard has granted the event sponsor a marine event permit for the fireworks displays.

Discussion of Rule

From 7:45 a.m. on May 20, 2010, during the set up of the fireworks and until the start of the fireworks displays, the temporary safety zone applies to the navigable waters around the fireworks sites within a radius of 100 feet. From 9 p.m. until 9:30 p.m., the area to which the temporary safety zone applies will increase in size to encompass the

navigable waters around the fireworks launch site within a radius of 1,000 feet. The fireworks launch site will be located at 37°42′21.20″ N, 122°23′3.46″ W.

The effect of the temporary safety zones will be to restrict navigation in the vicinity of the fireworks sites while the fireworks are set up, and until the conclusion of the scheduled displays. Except for persons or vessels authorized by the Coast Guard Patrol Commander, no person or vessel may enter or remain in the restricted area. These regulations are needed to keep spectators and vessels a safe distance away from the fireworks barges to ensure the safety of participants, spectators, and transiting vessels.

Regulatory Analyses

We developed this rule after considering numerous statutes and executive orders related to rulemaking. Below we summarize our analyses based on 13 of these statutes or executive orders.

Regulatory Planning and Review

This rule is not a significant regulatory action under section 3(f) of Executive Order 12866, Regulatory Planning and Review, and does not require an assessment of potential costs and benefits under section 6(a)(3) of that Order. The Office of Management and Budget has not reviewed it under that Order.

Although this rule restricts access to the waters encompassed by the safety zones, the effect of this rule will not be significant. The entities most likely to be affected are pleasure craft engaged in recreational activities. In addition, the rule will only restrict access for a limited time. Last but not least, the Public Broadcast Notice to Mariners will notify the users of local waterway to ensure that the safety zone will result in minimum impact.

Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), we have considered whether this rule would have a significant economic impact on a substantial number of small entities. The term "small entities" comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

The Coast Guard certifies under 5 U.S.C. 605(b) that this rule will not have a significant economic impact on a substantial number of small entities.

Although this rule may affect owners and operators of pleasure craft engaged in recreational activities and sightseeing, it will not have a significant economic impact on a substantial number of small entities for several reasons: (i) This rule will encompass only a small portion of the waterway for a limited period of time; (ii) vessel traffic can pass safely around the area; (iii) vessels engaged in recreational activities and sightseeing have ample space outside of the affected areas of San Francisco, CA to engage in these activities; and (iv) the maritime public will be advised in advance of this safety zone via Broadcast Notice to Mariners.

Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we offer to assist small entities in understanding the rule so that they can better evaluate its effects on them and participate in the rulemaking process.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1–888–REG–FAIR (1–888–734–3247). The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

Collection of Information

This rule calls for no new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520).

Federalism

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on State or local governments and would either preempt State law or impose a substantial direct cost of compliance on them. We have analyzed this rule under that Order and have determined that it does not have implications for federalism.

Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 or more in any one year. Though this rule will not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

Taking of Private Property

This rule will not cause a taking of private property or otherwise have taking implications under Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

Civil Justice Reform

This rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

Protection of Children

We have analyzed this rule under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. This rule is not an economically significant rule and does not create an environmental risk to health or risk to safety that may disproportionately affect children.

Indian Tribal Governments

This rule does not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it does not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

Energy Effects

We have analyzed this rule under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. We have determined that it is not a "significant energy action" under that order because it is not a "significant regulatory action" under Executive Order 12866 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The Administrator of the Office of Information and Regulatory Affairs has not designated it as a significant energy action. Therefore, it does not require a Statement of Energy Effects under Executive Order 13211.

Technical Standards

The National Technology Transfer and Advancement Act (NTTAA) (15

U.S.C. 272 note) directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through the Office of Management and Budget, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management systems practices) that are developed or adopted by voluntary consensus standards bodies.

This rule does not use technical standards. Therefore, we did not consider the use of voluntary consensus standards.

Environment

We have analyzed this rule under Department of Homeland Security Management Directive 0023.1 and Commandant Instruction M16475.lD, which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321–4370f), and have concluded this action is one of a category of actions which do not individually or cumulatively have a significant effect on the human environment. This rule is categorically excluded, under figure 2–1, paragraph (34)(g), of the Instruction. This rule involves establishing, disestablishing, or changing Regulated Navigation Areas and security or safety zones.

An environmental analysis checklist and a categorical exclusion determination are available in the docket where indicated under **ADDRESSES.**

List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reporting and recordkeeping requirements, Security measures, and Waterways.

■ For the reasons discussed in the preamble, the Coast Guard amends 33 CFR part 165 as follows:

PART 165—REGULATED NAVIGATION AREAS AND LIMITED ACCESS AREAS

■ 1. The authority citation for part 165 continues to read as follows:

Authority: 33 U.S.C. 1226, 1231; 46 U.S.C. Chapter 701; 50 U.S.C. 191, 195; 33 CFR 1.05–1, 6.04–1, 6.04–6, and 160.5; Pub. L. 107–295, 116 Stat. 2064; Department of Homeland Security Delegation No. 0170.1.

■ 2. Add § 165.T11–306 to read as follows:

§ 165.T11–306 Safety Zone; KFOG Kaboom, Fireworks Display, San Francisco, CA.

(a) *Location.* This temporary safety zone is established for a portion of the waters of San Francisco Bay in San Francisco, CA. The fireworks launch sites are located in position: 37°42′21.20″ N, 122°23′3.46″ W (NAD 83). From 7:45 a.m. on May 20, 2010, until 9 p.m. on May 22, 2010, the temporary safety zone extends to the navigable waters around the fireworks launch sites within a radius of 100 feet. From 9 p.m. until 9:30 p.m. on May 22, 2010, the area to which the temporary safety zones extends encompasses the navigable waters within a radius of 1,000 feet around the fireworks launch sites.

(b) *Definitions.* As used in this section, "designated representative" means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty officer, or other officer operating a Coast Guard vessel and a Federal, State, and local officer designated by or assisting the Captain of the Port San Francisco (COTP) in the enforcement of the safety zone.

(c) *Regulations.* (1) Under the general regulations in § 165.23, entry into, transiting, or anchoring within this safety zone is prohibited unless authorized by the COTP or the COTP's designated representative.

(2) The safety zone is closed to all vessel traffic, except as may be permitted by the COTP or a designated representative.

(3) Vessel operators desiring to enter or operate within the safety zone must contact the COTP or a designated representative to obtain permission to do so. Vessel operators given permission to enter or operate in the safety zone must comply with all directions given to them by the COTP or the designated representative. Persons and vessels may request permission to enter the safety zones on VHF–16 or through the 24-hour Command Center at telephone (415) 399–3547.

(d) *Effective period.* This section is effective from 7:45 a.m. on May 20, 2010 through 9:30 p.m. on May 22, 2010.

Dated: April 16, 2010.

P.M. Gugg,

Captain, U.S. Coast Guard, Captain of the Port San Francisco.

[FR Doc. 2010–10772 Filed 5–6–10; 8:45 am]

BILLING CODE 9110–04–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 54

[WC Docket No. 05–337, CC Docket No. 96–45; FCC 10–57]

High-Cost Universal Service Support, Federal-State Joint Board on Universal Service, Lifeline and Link-Up

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Federal Communications Commission (Commission) concludes that dramatic increases in telephone subscribership in Puerto Rico over the last several years make it unnecessary to adopt a new high-cost support mechanism for non-rural insular carriers as proposed by Puerto Rico Telephone Company. The Commission finds that the existing non-rural high-cost support mechanism, operating in conjunction with the Commission's other universal service programs, is successfully increasing telephone subscribership in Puerto Rico and satisfies the requirements of the Communications Act of 1934, as amended, with respect to Puerto Rico. The Commission believes that the public would be best served by our focusing on comprehensive universal service reform, rather than developing a new non-rural insular high-cost support mechanism within the existing legacy universal service system.

DATES: Effective June 7, 2010.

FOR FURTHER INFORMATION CONTACT: Ted Burmeister, Wireline Competition Bureau, Telecommunications Access Policy Division, (202) 418–7389 or TTY: (202) 418–0484.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Order in WC Docket No. 05–337, CC Docket No. 96–45, WC Docket No. 03–109, FCC 10–57, adopted April 16, 2010, and released April 16, 2010. This Order was also released with a companion Proposed Rule document that is published elsewhere in this **Federal Register** issue. The complete text of this document is available for inspection and copying during normal business hours in the FCC Reference Information Center, Portals II, 445 12th Street, SW., Room CY–A257, Washington, DC 20554. The document may also be purchased from the Commission's duplicating contractor, Best Copy and Printing, Inc., 445 12th Street, SW., Room CY–B402, Washington, DC 20554, telephone (800) 378–3160 or (202) 863- 2893, facsimile (202) 863–2898, or via the Internet at

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Synopsis of the Order

I. Introduction

1. In this Order, we conclude that dramatic increases in telephone subscribership in Puerto Rico over the last several years make it unnecessary to adopt a new high-cost support mechanism for non-rural insular carriers as proposed by Puerto Rico Telephone Company (PRTC). In 2005, the Commission considered creating a separate high-cost universal service support mechanism for non-rural insular areas. At that time, telephone subscribership in Puerto Rico (a non-rural insular area) was 73.8 percent, far below the national average of 94.8 percent. By 2008—the most recent year for which data are available—subscribership in Puerto Rico had jumped to 91.9 percent. During the same period, Puerto Rico has experienced significant growth in disbursements from federal universal service support programs due in large part to changes the Commission made to its rules. Total high-cost support for Puerto Rico has risen from less than $140 million in 1998 to more than $215 million in 2008, an increase of nearly 54 percent, and low-income support has jumped from $1.16 million in 2001 to $23.4 million in 2008. Although subscription rates in Puerto Rico are still lower than the national average (98.2 percent in 2008), the substantial growth in universal service support and the commensurate increase in telephone subscribership represent significant changed circumstances since we issued the NPRM, 71 FR 1721, January 11, 2006, in 2005.

2. In light of these positive developments, we find that the existing non-rural high-cost support mechanism, operating in conjunction with the Commission's other universal service programs, is successfully increasing telephone subscribership in Puerto Rico and satisfies the requirements of section 254 of the Communications Act of 1934, as amended (the Act), with respect to Puerto Rico. Telephone subscribership in Puerto Rico is not yet at the same level as in the mainland United States, but the data before us indicate that the gap is closing rapidly and may well be eliminated entirely in the near future. The Commission, moreover, recently adopted a Joint Statement on Broadband that recommends comprehensive reform of universal service, and delivered to Congress a National Broadband Plan that recommends, among other things, transitioning legacy high-cost universal service support to a new high-cost program that would support broadband as well as voice services. We believe that the public would be best served by our focusing on comprehensive universal service reform, rather than developing a new non-rural insular high-cost support mechanism within the existing legacy universal service system. As we comprehensively reform universal service and implement the National Broadband Plan recommendations, we will strive to further increase telephone subscribership rates in Puerto Rico and to ensure that high-quality voice and broadband services are available in insular areas.

II. Order

3. In response to a proposal PRTC had submitted, the Commission's 2005 *NPRM* sought comment on the adoption of a stand alone universal service support mechanism for non-rural insular carriers. PRTC argues that the Commission must adopt its proposed embedded cost-based mechanism because: (1) Section 254(b)(3) compels the agency to address the unique characteristics of non-rural insular carriers with regime that is distinct from the existing generally applicable non-rural high-cost support mechanism; (2) the existing mechanism does not provide support that is sufficient to ensure reasonably comparable service and affordable rates in Puerto Rico; and (3) the forward-looking economic cost model that currently is used to determine PRTC's eligibility for high-cost model support does not accurately measure its costs. As discussed below, we conclude that the statute does not require us to adopt a separate insular support mechanism as proposed by PRTC.

1. Section 254 of the Act Does Not Require the Commission To Establish an Insular High-Cost Support Mechanism

4. PRTC asserts that section 254(b)(3) of the Act imposes upon the Commission a clear, non-discretionary duty to adopt a separate universal service mechanism for insular areas. We disagree. Section 254(b)(3) provides that "[c]onsumers in all regions of the Nation * * * should have access to telecommunications and information services that are "reasonably comparable" in terms of price and quality to "those services provided in urban areas." That provision also gives examples of the "consumers in all regions of the Nation" that must have such reasonably comparable service; they "include[e] low-income consumers and those in rural, insular and high cost areas." Nothing in the text or structure of the statute, however, requires the Commission to adopt a stand alone mechanism addressed to each of the enumerated examples of non-urban "consumers in all regions of the Nation." Congress in section 254 sought to achieve a result—reasonably comparable rates and services—but did not mandate that the Commission employ specific mechanisms to achieve that result. Rather, the statute leaves to the Commission's discretion the task of developing one or more mechanisms successfully to implement the broad "reasonable comparability" goal of section 254(b)(3).

5. The Commission has taken multiple actions to implement section 254(b)(3)—both by expanding low-income (Lifeline and Link-Up) programs and by designing high-cost support mechanisms. Carriers in insular areas, just like carriers in non-insular areas, are eligible for support under the existing, generally applicable rural and non-rural high-cost support mechanisms. Indeed, carriers in Puerto Rico received $215.6 million in Interstate Common Line Support (a form of high-cost support) during 2008, and rural carriers in insular areas received $42.1 million in high-cost support. Likewise, Puerto Rico receives a substantial amount of low-income support—$23.4 million in 2008. As a result, Puerto Rico currently is the fourth largest recipient of federal high-cost support, the seventh largest recipient of federal low-income support, and the third largest net recipient of universal service dollars among the U.S. states and territories. Instead of creating a specifically tailored program for insular areas, we have chosen to date to comply with the principle in section 254(b)(3) by ensuring that carriers in insular areas are eligible for generally applicable support mechanisms.

6. We must additionally disagree with PRTC's reading of the 2005 *NPRM.* PRTC suggests that the language in the 2005 *NPRM* acknowledges, as a practical matter, the existence of a duty to address insular support separately from a single high-cost mechanism. The *NPRM* merely confirms, however, that in the Commission's view, section 254(b)(3) may authorize the adoption of a separate insular mechanism, but does

not mandate one. In particular, the Commission posited that "[t]here would be no need for a rural insular mechanism because all rural insular carriers already receive rural high-cost support." And the Commission sought comment not on whether section 254(b) requires a separate mechanism for non-rural insular carriers, but whether that statute even "provides the Commission with authority" to adopt one.

7. Although PRTC argues that we have failed to establish mechanisms to provide universal service support to non-rural insular areas, it appears that PRTC's primary objection is that it does not receive high-cost model support under the non-rural mechanism. On three prior occasions, we have declined to adopt PRTC's view that the non-rural high-cost support mechanism fails adequately to take into account cost characteristics and other conditions in Puerto Rico. Consistent with those prior decisions, we conclude that we have met our obligation under section 254(b)(3) by ensuring that carriers in insular areas are eligible for generally applicable support mechanisms, and we address PRTC's other objection further below.

2. The Commission's Universal Service Programs Provide Support That Is Sufficient To Ensure Reasonably Comparable Service and Affordable Rates in Puerto Rico

8. The Commission has long measured the success of its universal service policies on the basis of telephone penetration rates. In tentatively concluding that a non-rural insular mechanism should be adopted, the Commission in the *NPRM* relied heavily on an apparent decline in overall telephone subscribership in Puerto Rico during the period PRTC transitioned to the non-rural high-cost support mechanism. That assumption by the Commission may have been made on the basis of incomplete information at the time we issued the *NPRM.* In any event, it has been rebutted by marketplace developments over the four-plus years since we adopted the *NPRM.* During that period, Puerto Rico's telephone subscribership penetration rate has risen from approximately 73.8 percent in 2005 to 91.9 percent in 2008. And over that same four-year period, the gap in telephone penetration between Puerto Rico and the nation as a whole has been dramatically narrowed—from a deficit of 21 percentage points to one of just over six percentage points. Given this substantial change in circumstances since we issued the *NPRM,* we find that the non-rural high-cost support mechanism, acting in conjunction with our other universal service programs, produces sufficient support to achieve reasonably comparable service in Puerto Rico and non-insular areas consistent with section 254.

9. PRTC argues that a decrease in wireline telephone subscribership in Puerto Rico demonstrates that the non-rural high-cost support mechanism provides insufficient support. We disagree. The Commission measures telephone subscribership based on access to telecommunications service, regardless of whether such access is provided by traditional wireline service or by newer technologies, including wireless. This approach is consistent with our current universal service policies, which make high-cost support "portable" to any carrier that serves a particular customer, regardless of the technology used. Thus, on this record, a decline in wireline subscribership (as measured solely by PRTC's loss of switched access lines) is not determinative given the overall increase in telephone subscribership in Puerto Rico. Commission data show that competitive local exchange carriers served approximately 19 percent of all switched access lines in Puerto Rico as of June 2008, and the number of wireless subscribers in the Commonwealth more than doubled from approximately 1.1 million in 2001 to more than 2.4 million in 2007. Indeed, PRTC's own 2005 study concluded that "universal service is a virtual reality," because 92.8 percent of households surveyed in Puerto Rico had wireline or wireless service, and 44 percent of households had both. Accordingly, we believe it more likely that PRTC's line losses have resulted from customer migration to new service providers, not from the decisions of customers to terminate service entirely because high-cost support levels have rendered local service rates unaffordable. This decision to "cut the cord" reflects a trend occurring throughout the country.

10. PRTC further asserts that several communities and many customers in Puerto Rico have no access to telecommunications infrastructure (and, thus, no service) because PRTC has found it too costly to deploy facilities without federal high-cost loop support. We find that this claim does not justify the creation of PRTC's preferred non-rural insular support mechanism, within the current high-cost support framework, for several reasons. First, it is not clear in the record before us how many households on Puerto Rico lack access to wireline infrastructure that delivers basic voice service. To the extent that PRTC believes unique circumstances in Puerto Rico warrant additional high-cost support in order to extend broadband infrastructure, those arguments are more appropriately raised in the context of upcoming proceedings to consider the recommendations of the National Broadband Plan to reform the legacy high-cost support mechanisms to support broadband. Second, establishing a non-rural insular mechanism would not guarantee that PRTC would deploy infrastructure to expand service. Third, we are not persuaded that areas unserved by PRTC are without access to basic local telephone service from *any* provider today. Data from American Roamer show that mobile wireless coverage in Puerto Rico is nearly ubiquitous, and that wireless subscribership has more than doubled since 2001.

11. PRTC also claims that "[a]bsent sufficient federal support, carriers are forced to choose between fully investing in network development and expansion and raising rates to levels that could further diminish subscribership levels." There are no data in the record supporting this position, however. As we found in 2003, PRTC offered no evidence that the elimination of its high-cost loop support caused rate shock or rate comparability problems. While PRTC asserts that any increase in rates would negatively affect telephone subscribership in Puerto Rico, PRTC has placed no rate data in the record. Moreover, recent rate data submitted by Verizon show that PRTC's local service rates fall well below the national average urban rate, demonstrating that these rates are reasonably comparable to the rates paid by consumers in non-insular areas. We further note that PRTC submitted a study of telephone subscribership, which it claims is "useful in demonstrating that increases in residential wireline rates" in Puerto Rico "would not be inconsistent with public policy. Moreover, the relevance of PRTC's earlier (2004–2006) claim that it cannot invest in its network without additional high-cost support is substantially diminished, if not extinguished, by its later (2007) commitment—unqualified with respect to universal service support—to the Commission that it would invest more than $1 billion over five years to improve communications and information services in Puerto Rico.

12. In short, PRTC has not shown that the subscribership levels in Puerto Rico are related to excessively high local rates or that providing additional high-cost support would have any direct impact on facilities deployment or subscribership levels.

13. Although most of the increase in high-cost support disbursements to Puerto Rico is attributable to support received by other providers, notably PRTC's wireless affiliate and other mobile wireless service providers, those carriers (as much as PRTC) promote the universal service goals of the 1996 Act. The current universal service program does not embody a preference for service by any one carrier, or any one technology. Thus, the dramatic increase in high-cost support for wireless competitive ETCs in Puerto Rico relative to PRTC, the only wireline ETC, is entirely consistent with the high-cost program, as it is currently designed. As the Fifth Circuit explained, "the purpose of universal service is to benefit the customer, not the carrier," so " '[s]ufficient' funding of the customer's right to adequate telephone service can be achieved regardless of which carrier ultimately receives the subsidy."

14. A similar lack of evidence caused the Fifth Circuit Court of Appeals to reject a challenge to a cap the Commission had imposed on certain ILEC high-cost support mechanisms. The court in that case held that a single provider's reduced rate of return "does not establish that the cap [on certain ILEC high-cost support mechanisms] fails to provide sufficient service" to customers. "[T]he Act only promises universal service, and that is a goal that requires sufficient funding of customers, not providers." So long as the mechanism in place enables "customer[s] to receive basic telecommunications services, the FCC * * * is not further required to ensure sufficient funding of every local provider as well." Faced with record evidence showing that universal service for customers has dramatically improved since we adopted the *NPRM* in 2005, we reject PRTC's argument that the non-rural mechanism provides insufficient support to maintain affordable rates and reasonably comparable service in Puerto Rico.

15. Comments challenging the sufficiency of universal service support in Puerto Rico also fail to give weight to efforts by the FCC, the Puerto Rico Telecommunications Regulatory Board (TRB), PRTC, and competitive ETCs that have significantly increased the number of recipients of federal low-income support in Puerto Rico since 2003 and, commensurately, increased telephone subscribership. The Commission has taken steps to improve the effectiveness of the low-income support mechanism by expanding the federal default eligibility criteria for Lifeline/Link-Up to include an income-based criterion and additional means-tested programs. And to target low-income consumers more effectively, the Commission adopted outreach guidelines for Lifeline/Link-Up and issued a voluntary survey to gather data and information from states regarding the administration of the programs. Further, low-income consumers in Puerto Rico receive the maximum amount of Lifeline assistance available ($13.50 per month) due to the substantial contribution ($3.50 per month) provided by the Commonwealth. Importantly, the Commission has found a positive correlation between the amount of state Lifeline support and telephone subscribership penetration rates. We also found that the transfer of PRTC to América Móvil in 2007 was in the public interest based, in part, on América Móvil's extensive experience in designing products specifically for rural and low-income populations. Finally, we note again that through the operation of market forces, the wireless subscription rate in Puerto Rico has grown substantially, with low-income customers subscribing to wireless service in ever-increasing numbers, so that the customers of wireless competitive ETCs received more than one-third of total low-income support in 2008.

16. These combined public and private efforts have contributed to the dramatic growth in low-income support provided to the Commonwealth. Combined annual Lifeline and Link-Up support in Puerto Rico has grown from just over $1.16 million in 2001 to more than $23.4 million in 2008, ranking Puerto Rico as the seventh largest recipient of low-income support among the states and territories. This increase was driven by a dramatic expansion in the number of low-income support recipients, which grew from zero in 1997 to 188,000 in 2008. The Commission has previously attributed Puerto Rico's historically lagging telephone subscribership penetration rate to low per-capita income, not a high cost of service. PRTC acknowledges this fact. We therefore find the expansion of subsidies associated with the low-income support program significant given our prior finding that low-income support—*not* high-cost support—is the federal program best suited to address issues of affordability and subscribership in Puerto Rico. On the basis of the record before us, we are unpersuaded that providing additional high-cost support through a non-rural insular mechanism is needed to address the underlying concern that PRTC identifies regarding low telephone subscribership in Puerto Rico. While we emphasize that there is still work to be done, this dramatic narrowing of the gap in telephone subscribership between Puerto Rico and non-insular areas reinforces our long-held view that low-income support, in combination with our other universal service programs, is an effective means to address affordability and subscribership in Puerto Rico. As indicated in the companion NPRM, we seek comment on whether, due to the extraordinarily low income levels in Puerto Rico, it is appropriate to amend our rules to allow eligible low-income consumers in Puerto Rico additional support through the Link Up Program to offset special construction charges incurred if additional facilities are required to provide them with access to voice telephone service.

17. In summary, we agree with PRTC that "the Commission has created a set of complementary universal service programs that work in conjunction to ensure that all consumers have access to affordable and reasonably comparable telecommunications services." Indeed, in responding to the Tenth Circuit's *Qwest II* decision, we concluded generally that the non-rural high-cost support mechanism, acting in combination with the Commission's other universal service programs, provides sufficient support to achieve the universal service objectives set forth in section 254 of the Act. These programs have produced almost ubiquitous access to telecommunications services and very high telephone subscribership rates throughout the United States, including Puerto Rico. We therefore do not agree with PRTC that its loss of high-cost loop support from the legacy program that preceded the creation of the non-rural support mechanism rendered universal service support to Puerto Rico insufficient. As we recently explained, the Commission cannot reasonably evaluate the non-rural high-cost support mechanism in isolation. Sufficient support that satisfies the universal service objectives of Act—including reasonable comparability and affordability—can only be achieved through the totality of the Commission's universal service programs. Moreover, we reject PRTC's contention that the Commission views high-cost support and low-income support to be "mutually exclusive." To the contrary, we simply find that PRTC is not entitled to federal high-cost model support under the non-rural mechanism because its costs do not meet the eligibility threshold and, on the basis of this record, that total support provided to Puerto Rico through

the various universal service programs is sufficient to satisfy the objectives in section 254 of the Act.

18. We acknowledge that in the 2005 *NPRM,* the Commission tentatively concluded that "adopting a non-rural mechanism would have a limited impact on the universal service fund." PRTC estimates that a non-rural insular mechanism would provide PRTC with approximately $33 million in additional annual support based on 2004 data, which amounts to less than one percent of the total high-cost program. We are not persuaded, however, that the relatively limited financial impact of PRTC's proposal compels us to adopt it. Because universal service is funded by contributions from telecommunications carriers, which typically pass their contributions on to consumers, we must take care to avoid "excess subsidization of the universal service fund," which may actually "detract from universal service by causing rates to unnecessarily rise, thereby pricing some consumers out of the market." Moreover, as the D.C. Circuit recently held, we "must consider not only the possibility of pricing some customers out of the market altogether, but the need to limit the burden on customers who continue to maintain telephone service." In administering the universal service program, we take seriously our obligation to "strike an appropriate balance between the interests of widely dispersed customers with small stakes and a concentrated interest group seeking to increase its already large stake." Given our conclusion on this record that universal service support for Puerto Rico is sufficient under the Commission's existing universal service programs, we find that any additional high-cost support provided to PRTC cannot be justified under those existing programs.

3. The Application of the Commission's Forward-Looking Cost-Based Model for Determining Non-Rural High-Cost Support Adequately Addresses PRTC's Circumstances

19. The Commission determined in the *Universal Service First Report and Order,* 62 FR 32862, June 17, 1997, that non-rural carriers would receive support based on forward-looking economic costs (*i.e.,* costs estimated by the Commission's cost model), that the definition of rural carriers would exclude carriers of PRTC's size, and that a separate support mechanism for carriers serving insular areas was not warranted. As a result, although PRTC receives significant levels of Interstate Common Line Support, it does not receive high-cost model support or any specially targeted insular support today. In the *NPRM,* the Commission sought comment on a PRTC proposal that the Commission adopt a non-rural insular high-cost support mechanism based on the existing rural high-cost loop support mechanism, but with a cost threshold far below that currently used for rural telephone companies.

20. PRTC's proposal is predicated, in part, on its long-standing contention that the extreme weather and terrain conditions and high shipping costs in insular areas make the cost characteristics of even large insular carriers more like those of rural carriers. In the *Universal Service First Report and Order,* the Commission rejected this argument as grounds for providing PRTC high-cost support on the basis of embedded costs, finding that, "as a large telephone compan[y]," PRTC "should possess the economies of scale and scope to deal efficiently with the cost of providing service in their areas." We believe this reasoning still applies to PRTC. In approving license transfers associated with América Móvil's 2007 acquisition of PRTC, for example, we found that América Móvil "brings significant advantages of scale and scope to bear" in providing telecommunications services to consumers.

21. Even more significantly, record evidence in this proceeding reinforces our earlier decision. While PRTC claims that its costs are similar to those of rural carriers, PRTC's embedded costs are actually too low to make it eligible for support under the high-cost support mechanism that currently funds much smaller, rural telephone companies that do not enjoy the same economies of scale and scope. Only by lowering the rural mechanism's cost threshold significantly—from slightly more than $400 per loop to about $240 per loop (as proposed by PRTC)—would PRTC become eligible for the significant increase in high-cost loop support (about $33 million annually) that it has requested. Thus, based on PRTC's own embedded cost data in the record before us, we find that PRTC has not justified a departure from our prior determinations that, for purposes of high-cost support, PRTC should be treated as a non-rural carrier due to its size and resulting economies of scale and scope.

22. We also reject PRTC's claim that the non-rural forward-looking cost model fails accurately to represent insular costs. In particular, we do not find persuasive PRTC's arguments that it should receive high-cost support based on its embedded costs because the forward-looking economic costs produced by the high-cost model are less than PRTC's actual costs. First, PRTC's arguments do not address the central purpose of using forward-looking economic costs in the non-rural support model, which is to estimate the costs that would be incurred by an efficient provider of service. The Commission previously found that "variability in historic costs among companies is due to a variety of factors and does not simply reflect how efficient or inefficient a firm is in providing the supported services." Indeed, in this proceeding, PRTC has merely asserted that its costs are higher because it serves an insular area and has not addressed whether inefficiencies may have contributed to the difference. Second, PRTC argues that the national average costs used in the model are inappropriate for estimating the costs of serving insular areas and states that "it remains unclear the extent to which [PRTC's] costs were included in those national averages." In the *Tenth Report and Order,* 64 FR 67372, December 1, 1999, the Commission considered the use of a variety of data sources to determine input values in the high-cost model, including surveys of non-rural carriers. To the extent that PRTC declined to respond to a voluntary survey seeking cost data from carriers, the Commission could not include PRTC's cost data. Finally, PRTC's argument relies on inaccurate premises. For example, PRTC argues that the model's use of customer addresses from Puerto Rico results in erroneous customer locations that generate inaccurate results. In fact, the road surrogate method used by the model assumes an even distribution of customers along roads and does not attempt to precisely assign customer location based on addresses. PRTC also complains that "[a] comparison of the actual operating costs of other non-rural jurisdictions further calls attention to the disparate treatment of Puerto Rico." But it does not follow that the forward-looking cost model produces inaccurate results simply because Puerto Rico receives less high-cost model support than other jurisdictions. In any event, we find PRTC's "analysis" unpersuasive due to the manner in which it mixes statewide average embedded costs with support amounts from two different support mechanisms (*i.e.,* the rural and non-rural support mechanisms) that are based on two different methodologies (*i.e.,* embedded versus forward-looking costs).

23. PRTC's attacks on the accuracy of the forward-looking cost model are similar to arguments that the Commission rejected when it adopted

that model in the *Tenth Report and Order.* For example, in "explain[ing] why the model estimates higher costs in some states relative to others in a distribution that differs from carriers' book costs and from some observers' expectations," the Commission found that "[i]n general, * * * the states where the model estimated the highest costs were those states in which the territory served by the non-rural carriers, which are typically larger carriers, included more rural areas than in other states." This analysis is entirely consistent with the data in the record, which show that PRTC's embedded costs fall below the threshold for support under the rural high-cost support mechanism. Simply stated, PRTC has not persuaded us that the model fails to accurately measure its costs because PRTC has not demonstrated that its actual costs share the cost characteristics of rural carriers, as opposed to non-rural carriers. We further note that the Tenth Circuit in *Qwest I* upheld that Order (and our use of the cost model) against a similar challenge from Qwest, explaining that "while Qwest notes analytic problems with * * * the model it has not presented any evidence that the model overall produces such inaccurate results that it cannot form the basis of rational decision-making." Indeed, as the Tenth Circuit explained, "[t]he model is meant to estimate the costs of providing service," so "[i]t need not reflect physical reality in all aspects if it produces 'reasonably accurate estimates,' as the FCC has found it does." PRTC has provided no new evidence on this record that compels reconsideration of our previous conclusion that the cost model provides a reasonable means of determining appropriate levels of high-cost support. To the contrary, as noted, the record demonstrates a significant increase in telephone subscribership in Puerto Rico in the years since the *NPRM* was issued.

24. Nor do we believe that it would be in the public interest to transition PRTC from the non-rural mechanism to an entirely new high-cost support mechanism based on embedded costs, even on an interim basis. As a general matter, we have determined that the appropriate basis for high-cost support is forward-looking economic cost and have moved away from the use of embedded costs for determining universal service support wherever possible. We intend to continue that process, and agree with GCI that adoption of PRTC's proposal would be a step in the wrong direction.

4. Comprehensive Reform and the National Broadband Plan

25. The Commission has long recognized the need for comprehensive review and possible reform of universal service reform, and has sought comment on various proposals for comprehensive reform of the high-cost support mechanisms, rural as well as non-rural. Since the Commission originally adopted the non-rural high-cost mechanism in 1999, the telecommunications marketplace has undergone significant changes. While in 1996 the majority of consumers subscribed to separate local and long distance providers, today the majority of consumers subscribe to local/long distance bundles offered by a single provider. In addition, the vast majority of subscribers have wireless phones as well as wireline phones, and an increasing percentage of consumers are dropping their wireline phones in favor of wireless or broadband-based (voice over Internet protocol) phone services. Finally, an increasing percentage of carriers are converting their networks from circuit-switched to Internet protocol (IP) technology.

26. On March 16, 2010, the Commission adopted a Joint Statement on Broadband, which sets forth the overarching vision and goals for U.S. broadband policy and recommends comprehensive reform of universal service. The Commission also delivered to Congress the National Broadband Plan, which contains specific recommendations for reform. The National Broadband Plan recommends that all Americans should have access to affordable broadband service and proposes a comprehensive reform program to shift the high-cost universal service program from primarily supporting voice communications to supporting broadband platforms that enable many applications, including voice. As set forth in the National Broadband plan, a new Connect America Fund would provide universal service support in areas where there is no private sector business case to offer broadband platforms that are capable of delivering high-quality voice services because providers cannot earn enough revenue to cover the costs of deploying and operating broadband infrastructure and services.

27. The recommendations to transition the existing high-cost universal service mechanisms to a new broadband program further cause us to conclude that PRTC's requested reform, limited only to non-rural insular areas, should not be undertaken at this time. While we believe that we have fully addressed the insular support questions raised in the *NPRM*, we anticipate that our efforts to reform universal service support will be advanced further through future proceedings that follow from the National Broadband Plan. The Commission will release a notice of proposed rulemaking later this year that will address the high-cost universal service recommendations of the National Broadband Plan. We encourage parties with information about any unique cost characteristics of providing broadband service in insular areas, such as Puerto Rico, to participate in these forthcoming proceedings and submit any relevant data. Doing so will ensure that the Commission has the information necessary to determine the cost of deploying and operating a broadband infrastructure in insular areas.

28. In the interim, we find that it will further the public interest if PRTC remains subject to the non-rural support mechanism until comprehensive universal service reform is adopted, consistent with the recommendations contained in the National Broadband Plan. If PRTC were to receive additional support for voice service pursuant to its proposed non-rural insular mechanism, it likely would be more difficult to transition that support to focus on areas unserved or underserved by broadband.

III. Procedural Matters

A. Procedural Matters Related to the Order

1. Paperwork Reduction Analysis

29. This order does not contain new, modified, or proposed information collections subject to the Paperwork Reduction Act of 1995, Public Law 104–13. In addition, therefore, it does not contain any new, modified, or proposed "information collection burden for small business concerns with fewer than 25 employees," pursuant to the Small Business Paperwork Relief Act of 2002, Public law 107–198, *see* 44 U.S.C. 3506(c)(4).

2. Final Regulatory Flexibility Act Certification

30. As we are adopting no rules in this order, no regulatory flexibility analysis is required.

3. Congressional Review Act

31. The Commission will not send a copy of this order in a report to Congress and the Government Accountability Office pursuant to the Congressional Review Act because no rules are being adopted at this time.

B. Ex Parte Presentations

32. This proceeding shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules. Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. Other requirements pertaining to oral and written presentations are set forth in § 1.1206(b) of the Commission's rules.

List of Subjects in 47 CFR Part 54

Communications common carriers, High-Cost universal support, Reporting and recordkeeping requirements, Schools, Telecommunications, Telephone.

Federal Communications Commission.

Marlene H. Dortch,

Secretary.

[FR Doc. 2010–10852 Filed 5–6–10; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[DA 10–698; MB Docket No. 09–230; RM–11586]

Television Broadcasting Services; Seaford, DE

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: The Commission grants the allotment of channel 5 to Seaford, Delaware. The Commission waived the freeze on the filing of new DTV allotments to initiate this proceeding and to advance the policy, as set forth in Section 331(a) of the Communications Act of 1934, as amended, to allocate not less than one very high frequency commercial television channel to each State, if technically feasible.

DATES: This rule is effective June 7, 2010.

FOR FURTHER INFORMATION CONTACT: Adrienne Y. Denysyk, Media Bureau, (202) 418–1600.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's *Report and Order*, MB Docket No. 09–230, adopted April 23, 2010, and released April 28, 2010. The full text of this document is available for public inspection and copying during normal business hours in the FCC's Reference Information Center at Portals II, CY–A257, 445 12th Street, SW., Washington, DC 20554. This document will also be available via ECFS (*http://fjallfoss.fcc.gov/ecfs/*). This document may be purchased from the Commission's duplicating contractor, Best Copy and Printing, Inc., 445 12th Street, SW., Room CY–B402, Washington, DC 20554, telephone 1–800–478–3160 or via the company's Web site, *http://www.bcipweb.com.* To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to *fcc504@fcc.gov* or call the Consumer & Governmental Affairs Bureau at 202–418–0530 (voice), 202–418–0432 (tty).

This document does not contain information collection requirements subject to the Paperwork Reduction Act of 1995, Public Law 104–13. In addition, therefore, it does not contain any information collection burden "for small business concerns with fewer than 25 employees," pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, *see* 44 U.S.C. 3506(c)(4). Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding.

The Commission will send a copy of this *Report and Order* in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

List of Subjects in 47 CFR Part 73

Television, Television broadcasting.

■ For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 73 as follows:

PART 73—RADIO BROADCAST SERVICES

■ 1. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334, 336.

§ 73.622 [Amended]

■ 2. Section 73.622(i), the Post-Transition Table of DTV Allotments under Delaware, is amended by adding channel 5 at Seaford.

Federal Communications Commission.

Clay C. Pendarvis,

Associate Chief, Video Division, Media Bureau.

[FR Doc. 2010–10865 Filed 5–6–10; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

48 CFR Part 252

Defense Federal Acquisition Regulation Supplement; Technical Amendment

AGENCY: Defense Acquisition Regulations System, Department of Defense (DoD).

ACTION: Final rule.

SUMMARY: DoD is issuing a technical amendment to the Defense Federal Acquisition Regulation Supplement (DFARS) to correct a reference to a paragraph in a FAR clause.

DATES: *Effective Date:* May 7, 2010.

FOR FURTHER INFORMATION CONTACT: Ms. Ynette R. Shelkin, Defense Acquisition Regulations System, OUSD (AT&L) DPAP (DARS), Room 3B855, 3060 Defense Pentagon, Washington, DC 20301–3060. Telephone 703–602–8384; facsimile 703–602–0350.

SUPPLEMENTARY INFORMATION: This final rule amends DFARS text at 252.204–7007, Alternate A, Annual Representations and Certifications, by correcting the paragraph reference to FAR 52.204–8 from paragraph (c) to paragraph (d).

List of Subjects in 48 CFR Part 252

Government procurement.

Ynette R. Shelkin,

Editor, Defense Acquisition Regulations System.

■ Therefore DoD is amending 48 CFR part 252 as follows:

■ 1. The authority citation for 48 CFR part 252 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR chapter 1.

PART 252—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

252.204–7007 [Amended]

■ 2. Amend section 252.204–7007 by revising the clause date to read "(MAY 2010)" and the paragraph designation in the FAR provision to read "(d)".

[FR Doc. 2010–10757 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–08–P

Proposed Rules

Federal Register

Vol. 75, No. 88

Friday, May 7, 2010

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

NUCLEAR REGULATORY COMMISSION

10 CFR Part 72

[NRC–2009–0538]

RIN 3150–AI75

List of Approved Spent Fuel Storage Casks: NUHOMS® HD System Revision 1

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend its spent fuel storage cask regulations by revising the Transnuclear, Inc. (TN), NUHOMS® HD System listing within the "List of Approved Spent Fuel Storage Casks" to include Amendment No. 1 to Certificate of Compliance (CoC) Number 1030. Amendment No. 1 would modify the CoC to add Combustion Engineering 16x16 class fuel assemblies as authorized contents, reduce the minimum off-normal ambient temperature from −20 °F to −21 °F, expand the authorized contents of the NUHOMS® HD System to include pressurized water reactor fuel assemblies with control components, reduce the minimum initial enrichment of fuel assemblies from 1.5 weight percent uranium-235 to 0.2 weight percent uranium-235, clarify the requirements of reconstituted fuel assemblies, add requirements to qualify metal matrix composite neutron absorbers with integral aluminum cladding, delete use of nitrogen for draining the water from the dry shielded canister (DSC) and allow only helium as a cover gas during DSC cavity water removal operations, and make corresponding changes to the technical specifications.

DATES: Comments on the proposed rule must be received on or before June 7, 2010.

ADDRESSES: Please include Docket ID NRC–2009–0538 in the subject line of your comments. For instructions on submitting comments and accessing documents related to this action, see Section I, "Submitting Comments and Accessing Information" in the **SUPPLEMENTARY INFORMATION** section of this document. You may submit comments by any one of the following methods.

Federal Rulemaking Web Site: Go to *http://www.regulations.gov* and search for documents filed under Docket ID NRC–2009–0538. Address questions about NRC dockets to Carol Gallagher, telephone 301–492–3668, e-mail *Carol.Gallager@nrc.gov.*

Mail Comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, ATTN: Rulemakings and Adjudications Staff.

E-mail Comments to: Rulemaking.Comments@nrc.gov. If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at 301–415–1677.

Hand-deliver Comments to: 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 a.m. and 4:15 p.m. Federal workdays (Telephone 301–415–1677).

Fax Comments to: Secretary, U.S. Nuclear Regulatory Commission at 301–415–1101.

FOR FURTHER INFORMATION CONTACT: Jayne M. McCausland, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, telephone (301) 415–6219, e-mail *Jayne.McCausland@nrc.gov.*

SUPPLEMENTARY INFORMATION:

Submitting Comments and Accessing Information

Comments submitted in writing or in electronic form will be posted on the NRC Web site and on the Federal rulemaking Web site *http://www.regulations.gov.* Because your comments will not be edited to remove any identifying or contact information, the NRC cautions you against including any information in your submission that you do not want to be publicly disclosed. The NRC requests that any party soliciting or aggregating comments received from other persons for submission to the NRC inform those persons that the NRC will not edit their comments to remove any identifying or contact information, and therefore, they should not include any information in their comments that they do not want publicly disclosed.

You can access publicly available documents related to this document using the following methods:

NRC's Public Document Room (PDR): The public may examine and have copied for a fee publicly available documents at the NRC's PDR, Room O–1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland.

NRC's Agencywide Documents Access and Management System (ADAMS): Publicly available documents created or received at the NRC are available electronically at the NRC's Electronic Reading Room at *http://www.nrc.gov/reading-rm/adams.html.* From this page, the public can gain entry into ADAMS, which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC's PDR reference staff at 1–800–397–4209, or 301–415–4737, or by e-mail to *PDR.Resource@nrc.gov.*

Federal Rulemaking Web Site: Public comments and supporting materials related to this proposed rule can be found at *http://www.regulations.gov* by searching on Docket ID NRC–2009–0538.

For additional information, see the Direct Final Rule published in the Rules and Regulations section of this **Federal Register**.

Procedural Background

This rule is limited to the changes contained in Amendment 1 to CoC No. 1030 and does not include other aspects of the NUHOMS® HD System design. Because NRC considers this action noncontroversial and routine, the NRC is publishing this proposed rule concurrently as a direct final rule in the Rules and Regulations section of this **Federal Register**. Adequate protection of public health and safety continues to be ensured. The direct final rule will become effective on July 21, 2010. However, if the NRC receives significant adverse comments on the direct final rule by June 7, 2010, then the NRC will publish a document that withdraws the direct final rule. If the direct final rule is withdrawn, the NRC will address the comments received in response to the proposed revisions in a subsequent final rule. Absent significant modifications to the proposed revisions requiring

republication, the NRC will not initiate a second comment period on this action in the event the direct final rule is withdrawn.

A significant adverse comment is a comment where the commenter explains why the rule would be inappropriate, including challenges to the rule's underlying premise or approach, or would be ineffective or unacceptable without a change. A comment is adverse and significant if:

(1) The comment opposes the rule and provides a reason sufficient to require a substantive response in a notice-and-comment process. For example, a substantive response is required when:

(a) The comment causes the NRC staff to reevaluate (or reconsider) its position or conduct additional analysis;

(b) The comment raises an issue serious enough to warrant a substantive response to clarify or complete the record; or

(c) The comment raises a relevant issue that was not previously addressed or considered by the NRC staff.

(2) The comment proposes a change or an addition to the rule, and it is apparent that the rule would be ineffective or unacceptable without incorporation of the change or addition.

(3) The comment causes the NRC staff to make a change (other than editorial) to the rule, CoC, or TS.

For additional procedural information and the regulatory analysis, see the direct final rule published in the Rules and Regulations section of this **Federal Register**.

List of Subjects in 10 CFR Part 72

Administrative practice and procedure, Hazardous waste, Nuclear materials, Occupational safety and health, Radiation protection, Reporting and recordkeeping requirements, Security measures, Spent fuel, Whistleblowing.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; the Nuclear Waste Policy Act of 1982, as amended, and 5 U.S.C. 553; the NRC is proposing to adopt the following amendments to 10 CFR part 72.

PART 72—LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE, AND REACTOR-RELATED GREATER THAN CLASS C WASTE

1. The authority citation for part 72 continues to read as follows:

Authority: Secs. 51, 53, 57, 62, 63, 65, 69, 81, 161, 182, 183, 184, 186, 187, 189, 68 Stat. 929, 930, 932, 933, 934, 935, 948, 953, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2071, 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2201, 2232, 2233, 2234, 2236, 2237, 2238, 2282); sec. 274, Pub. L. 86–373, 73 Stat. 688, as amended (42 U.S.C. 2021); sec. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846); Pub. L. 95–601, sec. 10, 92 Stat. 2951 as amended by Pub. L. 102–486, sec. 7902, 106 Stat. 3123 (42 U.S.C. 5851); sec. 102, Pub. L. 91–190, 83 Stat. 853 (42 U.S.C. 4332); secs. 131, 132, 133, 135, 137, 141, Pub. L. 97–425, 96 Stat. 2229, 2230, 2232, 2241, sec. 148, Pub. L. 100–203, 101 Stat. 1330–235 (42 U.S.C. 10151, 10152, 10153, 10155, 10157, 10161, 10168); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); sec. 651(e), Pub. L. 109–58, 119 Stat. 806–10 (42 U.S.C. 2014, 2021, 2021b, 2111).

Section 72.44(g) also issued under secs. 142(b) and 148(c), (d), Pub. L. 100–203, 101 Stat. 1330–232, 1330–236 (42 U.S.C. 10162(b), 10168(c),(d)). Section 72.46 also issued under sec. 189, 68 Stat. 955 (42 U.S.C. 2239); sec. 134, Pub. L. 97–425, 96 Stat. 2230 (42 U.S.C. 10154). Section 72.96(d) also issued under sec. 145(g), Pub. L. 100–203, 101 Stat. 1330–235 (42 U.S.C. 10165(g)). Subpart J also issued under secs. 2(2), 2(15), 2(19), 117(a), 141(h), Pub. L. 97–425, 96 Stat. 2202, 2203, 2204, 2222, 2244 (42 U.S.C. 10101, 10137(a), 10161(h)).

Subparts K and L are also issued under sec. 133, 98 Stat. 2230 (42 U.S.C. 10153) and sec. 218(a), 96 Stat. 2252 (42 U.S.C. 10198).

2. In § 72.214, Certificate of Compliance 1030 is revised to read as follows:

§ 72.214 List of approved spent fuel storage casks.

* * * * *

Certificate Number: 1030.

Initial Certificate Effective Date: January 10, 2007.

Amendment Number 1 Effective Date: July 21, 2010.

SAR Submitted by: Transnuclear, Inc.

SAR Title: Final Safety Analysis Report for the NUHOMS® HD Horizontal Modular Storage System for Irradiated Nuclear Fuel.

Docket Number: 72–1030.

Certificate Expiration Date: January 10, 2027.

Model Number: NUHOMS® HD–32PTH.

* * * * *

Dated at Rockville, Maryland, this 19th day of April 2010.

For the Nuclear Regulatory Commission.

R.W. Borchardt,

Executive Director for Operations.

[FR Doc. 2010–10674 Filed 5–6–10; 8:45 am]

BILLING CODE 7590–01–P

DEPARTMENT OF ENERGY

10 CFR Parts 430 and 431

[Docket No. EERE–2010–BT–CE–0014]

RIN 1904–AC23

Revisions to Energy Efficiency Enforcement Regulations

AGENCY: Office of Energy Efficiency and Renewable Energy and Office of the General Counsel, Department of Energy.

ACTION: Request for Information (RFI); request for comment.

SUMMARY: The U.S. Department of Energy (DOE or the "Department") intends to expand and revise its existing energy efficiency enforcement regulations for certain consumer products and commercial and industrial equipment covered under the Energy Policy and Conservation Act of 1975, as amended (EPCA or the "Act"). These regulations provide for manufacturer submission of compliance statements and certification reports to DOE, maintenance of compliance records by manufacturers, and the availability of enforcement actions for improper certification or upon a determination of noncompliance. To facilitate this process and to allow interested parties to provide suggestions, comments, and information, DOE is publishing this request for information. This request identifies several areas on which DOE is particularly interested in receiving information; however, any input and suggestions considered relevant to the topic are welcome.

DATES: Written comments and information are requested on or before June 7, 2010.

ADDRESSES: Interested persons are encouraged to submit comments using the *Federal eRulemaking Portal* at *http://www.regulations.gov*. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE–2010–BT–CE–0014, by any of the following methods:

- *E-mail:* to *EnforcementRFI@hq.DOE.gov*. Include EERE–2010–BT–CE–0014 in the subject line of the message.
- *Mail:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE–2J, Revisions to Energy Efficiency Enforcement Regulations, EERE–2010–BT–CE–0014, 1000 Independence Avenue, SW., Washington, DC 20585–0121. Phone: (202) 586–2945. Please submit one signed paper original.
- *Hand Delivery/Courier:* Ms. Brenda Edwards, U.S. Department of Energy,

Building Technologies Program, 6th Floor, 950 L'Enfant Plaza, SW., Washington, DC 20024. Phone: (202) 586–2945. Please submit one signed paper original.

Instructions: All submissions received must include the agency name and docket number or RIN for this rulemaking.

Docket: For access to the docket to read background documents, or comments received, go to the *Federal eRulemaking Portal* at *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT: Direct requests for additional information may be sent to Ms. Celia Sher, U.S. Department of Energy, Office of the General Counsel, Forrestal Building, GC–71, 1000 Independence Avenue, SW., Washington, DC 20585. Telephone: 202–287–6122. E-mail: *Celia.Sher@hq.doe.gov*; and Mr. Richard Karney, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, EE–2J, 1000 Independence Avenue, SW., Washington, DC 20585–0121. Telephone: 202–586–9449. E-mail: *Richard.Karney@ee.doe.gov*.

SUPPLEMENTARY INFORMATION:

Authority and Background: EPCA authorizes DOE to enforce compliance with the energy and water conservation standards (all references herein referring to energy use and consumption include water use and consumption; all references to energy efficiency include water conservation) established for certain consumer products and commercial equipment. 42 U.S.C. 6299–6305 (consumer products), 6316 (commercial and industrial equipment). To ensure that all covered products distributed in the United States comply with DOE's energy conservation standards, the Department has promulgated enforcement regulations that include specific certification and compliance requirements. See Title 10 of the Code of Federal Regulations (10 CFR) part 430, subpart F; 10 CFR part 431, subparts B, K, S, T, U, and V.

The Department is considering revising its enforcement procedures to ensure that all of its energy efficiency regulations are rigorously and consistently enforced. The Department is issuing this initial request for information to allow interested parties an opportunity to provide information that will assist DOE in reforming the existing enforcement process. This initial request will be followed by a notice of proposed rulemaking that will be based on the information received as a result of this notice and other data and information gathered by DOE.

Public Participation

A. Submission of Information

DOE will accept comments in response to this RFI under the timeline provided in the **DATES** section above. Comments submitted to the Department through the eRulemaking Portal or by e-mail should be provided in WordPerfect, Microsoft Word, PDF, or text file format. Those responding should avoid the use of special characters or any form of encryption, and wherever possible, comments should include the electronic signature of the author. Comments submitted to the Department by mail or hand delivery/courier should include one signed original paper copy. No telefacsimiles will be accepted.

Comments submitted in response to this notice will become a matter of public record and will be made publicly available.

The Department encourages interested parties to contact DOE if they would like to meet in person to discuss their comments. The Department's policy governing ex parte communications is posted on the Office of the General Counsel's Web site at: *http://www.gc.energy.gov/1309.htm*.

B. Issues on Which DOE Seeks Information

For this RFI, DOE requests comments, information, and recommendations on the following concepts for the purpose of revising current enforcement regulations in Parts 430 and 431 of 10 CFR. As set forth below, we seek comment on DOE's requirements for (1) Certification; (2) Enforcement Testing and Adjudication; (3) Verification Testing; (4) Waivers; and (5) the Application of our Regulations to Distinctive Products. The sequence of these proposals does not reflect any specific DOE preference.

(1) Certification Requirements

a. Under existing Department rules, manufacturers of covered products must satisfy a one-time certification requirement for each basic model. DOE would like to establish an annual certification requirement, similar to the Federal Trade Commission's (FTC) reporting requirements under the FTC's Appliance Labeling Rule (see 16 CFR 305.8). DOE is also considering options to consolidate filings with FTC, the Environmental Protection Agency (EPA) and other agencies, as appropriate, to reduce the reporting burdens on manufacturers. To the extent there are covered products not already required to file annual reports with FTC, this would increase the reporting burden on the manufacturers of those products. What are the costs and benefits of switching to an annual filing process for certification?

b. DOE is also considering implementing a recertification requirement when there is a change to a basic model that either increases or decreases energy efficiency or energy consumption. Section 10 CFR 430.62(b) presently provides for such reporting to DOE only if there is a change that increases energy consumption or decreases energy efficiency. This system creates a disconnect between the information certified to DOE and the energy consumption or energy efficiency of products actually on the market. DOE is looking for ways to have a more current and complete picture of the energy consumption and energy efficiency of the covered products being distributed in the U.S. Requiring recertification for any change in energy consumption or energy efficiency is one way to address this issue. With regard to recertification, should the Department establish a threshold percentage change in energy consumption or energy efficiency that must be reached before any recertification requirement is triggered? If we move to such a system, should the threshold percentage be product specific? Are there reasons why DOE should not require recertification for energy efficiency improvements? For example, would such a requirement create a disincentive to making such improvements? If so, to what extent? Are there alternative ways to address the Department's interest in obtaining more current and complete certification data?

c. In conjunction with the possible recertification requirement referenced above, DOE is interested in pursuing improvements to the manner in which basic model numbers are designated, so that the number that is provided to DOE for certification is clearly associated with the model number used to identify the unit in the market. A more unified numbering system would assist the Department and the public in identifying the market-based model number that corresponds with what is certified to DOE.

d. Under existing regulations, the sampling procedures to be used for compliance certification purposes are set forth in 10 CFR 430.24, and the sampling procedures to be used for enforcement testing (to determine compliance with the applicable energy conservation standard) are set forth in

Appendix B to Subpart F of Part 430. The Department seeks comment regarding any needed changes in the current sampling plans and the reasons the changes are warranted for a given product. DOE seeks comment on whether the sampling procedures for compliance certification and enforcement testing should be identical.

e. The regulations currently permit in-house, as well as independent, certification testing. In light of issues identified through DOE's recent enforcement efforts and the Government Accountability Office's recent report on ENERGY STAR, DOE requests comment on whether all covered products should be required to be independently tested for certification purposes.

f. Currently, the certification regulations allow a manufacturer or private labeler to elect to use a third party to submit certification reports to DOE. Should DOE continue to permit this practice? If so, what recourse should be available if a third party fails to follow through on filing for the manufacturer or labeler? Should that recourse be available if the third party fails just once to file on behalf of the manufacturer or labeler? Should DOE disallow a third party with a history of poor performance (*e.g.,* failure to submit certification reports, submission of inaccurate information, submission of incomplete information) from acting as a third party representative?

(2) Enforcement Testing and Adjudication

a. Pursuant to EPCA, DOE has authority to initiate enforcement actions to ensure compliance with its standards. The current regulations provide for enforcement testing upon DOE's receipt of written information that a covered product may be violating a standard. DOE contemplates revising its procedures to allow the Department more flexibility in its initiation of enforcement actions. For example, DOE is considering initiating and performing its own testing at the DOE-owned National Energy Technology Laboratory (NETL) Appliance Technology Evaluation Center (ATEC). DOE seeks comments on the use of its own facility for testing and the relationship of DOE testing as compared to industry testing.

In addition, DOE contemplates initiating enforcement actions, as needed, in response to credible information, or with reference to a set of established factors, such as: Manufacturer history of non-compliance; product class history of non-compliance; third party referrals from other regulatory agencies, advocacy groups, consumers, or competitors; models or technologies new to the marketplace; or other factors indicating that a model may not comply with the applicable standard. The Department seeks comment on this concept. Information relating to enforcement testing is also requested on the following:

(i) *Unit selection.* How should units be selected for enforcement testing? For example, should the units be manufacturer provided, supplied by the manufacturer's distributor, obtained off-the-shelf from a retailer, or should DOE have the ability to choose from any of these options? Should the cost allocation for the unit be the same regardless of how the product is obtained (*e.g.,* off-the-shelf or manufacturer provided)?

Under the current rules for enforcement testing, a manufacturer in receipt of a DOE test notice must ship a select number of units for testing as specified on the notice. In situations where the manufacturer keeps limited inventory, the manufacturer may need to build units specifically for enforcement testing, rather than providing DOE off-the-shelf, or already manufactured units. This creates a circumstance vulnerable to bias, which could undermine the overall effectiveness of enforcement testing. Are there suggestions regarding how the Department should address unit selection in these situations?

(ii) *Cost allocation for testing.* Should the cost of performing the enforcement testing be assumed by the manufacturer or DOE? Should the cost allocation of the testing be different if the product is found in compliance? What other factors should be taken into consideration when determining how to distribute the cost of testing?

(iii) *Sampling plan.* The Department seeks comment regarding any needed changes in the current enforcement sampling plans and the reasons the changes are warranted for a given product. As discussed above, the Department seeks comment regarding the adequacy of the current sampling plan for enforcement testing and whether the plans for enforcement and certification testing should be identical. *See* Part B, Section (1)d. above.

(iv) *Manufacturer role.* How should manufacturers be apprised of enforcement testing steps, including: Test set up; test conditions; and test data and reports? Should manufacturers have the opportunity to do additional testing? If so, what conditions and timeframe should govern such testing?

(3) Verification Testing

a. DOE is considering instituting a new requirement for periodic verification testing that would be applicable to all basic models certified with DOE. This requirement would be separate from enforcement testing and would be used to verify that the units distributed into commerce continue to be at the certified levels. DOE seeks comment on whether DOE should require manufacturers and/or private labelers to perform verification testing according to specified conditions and criteria.

b. With regard to such verification testing, the Department seeks comment on the following conditions and criteria:

Information Flow

(i) With what frequency should verification testing be required? What specific criteria should be used? Should this be an annual requirement?

(ii) What percentage of basic models should be verification tested annually, and how should units be selected? How many units of each model should be tested? What level of tolerance would be acceptable if only one unit is tested?

(iii) What level of information resulting from the verification testing should be communicated to DOE (*e.g.,* test data, test reports, final results)?

(iv) When and with what frequency should verification testing information be communicated to DOE? Should performance of verification testing be documented on the certification report?

(v) What steps should be taken if a basic model fails the verification testing? What information should be communicated to DOE and when should it be communicated?

(vi) What level of access should DOE and its representatives have to testing done pursuant to DOE regulations (such as the ability to observe testing)?

Testing Laboratories

(i) DOE contemplates that testing done to verify compliance would be performed by independent labs. What level of independence from the manufacturer should be required? We also seek comment on whether we should require that verification testing be done by a different lab than the lab that performed the certification testing.

(ii) DOE understands that some industry associations have in place or are currently developing verification testing programs. How should such industry verification programs tie into DOE's verification testing process? How would ties to such programs affect those manufacturers that are not members of industry associations? What information

should verification programs provide to DOE (*i.e.,* test reports) and with what frequency?

(iii) Should DOE require labs to be accredited to international standards such as International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) 17025, or specifically accredited to perform DOE testing? Should labs that manufacturers use for verification testing be accredited by DOE? By an accreditation body like the National Institute of Standards and Technology's National Voluntary Laboratory Accreditation Program?

(iv) What conditions should DOE require for labs doing verification testing to ensure unbiased, consistent, and robust results? For example, should DOE require that all labs performing verification testing be calibrated with the same frequency, in order to ensure consistency across labs? Should all verification testing labs be required to participate in round robin testing? How should such round robin testing be conducted to ensure accurate and consistent lab results?

Cost

(i) Should verification testing be paid for by the manufacturer or private labeler? DOE requests comments regarding the cost burden placed on manufacturers for the above described verification testing. Please provide a detailed description of the costs and supporting information.

c. DOE seeks comment on whether it should conduct its own random verification testing of products separate from any required manufacturer verification testing. If so, what conditions and criteria should govern DOE performed verification testing?

(4) Waivers

Under existing regulations in 10 CFR 430.27, manufacturers have the option of seeking a waiver from the test procedure when a basic model contains a design characteristic that either prevents testing according to the prescribed test procedures or causes the test procedure to evaluate the basic model in a manner so unrepresentative of the model's true energy consumption characteristics as to provide materially inaccurate comparative data. DOE is considering establishing a mandatory waiver requirement, which would obligate manufacturers to obtain a waiver in those instances where the test procedure does not evaluate the energy or water consumption characteristics in a representative manner or where the test procedure yields materially inaccurate comparative data. This requirement would apply whether the product consumes more energy or less energy than would be measured by the applicable test procedure. DOE requests comments on this concept.

(5) Application of Regulations to Distinctive Products

DOE has an interest in creating a consistent, uniform enforcement framework across industries, manufacturers and products. Deviations from this approach must be justified based on distinctive product characteristics. We are interested in comments on the following questions relating to products that may justify unique approaches to certification, verification, and enforcement:

a. DOE understands some niche products or large commercial products are manufactured at very low quantities on a made-to-order basis. How should DOE's testing requirements and procedures be applied to these products? For example, how should units of these products be selected for testing?

b. Some products, such as electric motors, are distributed in commerce or imported into the U.S. as components of other products where the component product is not readily accessible. When products with regulated components are imported into the U.S., how can DOE best ensure that the components are compliant with U.S. regulations?

Docket: For direct access to the docket to read background documents, or comments received, visit the U.S. Department of Energy, Resource Room of the Building Technologies Program, 950 L'Enfant Plaza, SW., Suite 600, Washington, DC, 20024, (202) 586–2945, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. Please call Ms. Brenda Edwards at the above telephone number for additional information regarding visiting the Resource Room.

Procedural Requirements: Today's regulatory action has been determined not to be a significant regulatory action under section 3(f)(1) of Executive Order 12866, "Regulatory Planning and Review", 58 FR 51735 (Oct. 4, 1993).

Statutory Authority: 42 U.S.C. 6299–6305; 6316.

Issued in Washington, DC, on May 4, 2010.

Cathy Zoi,

Assistant Secretary, Energy Efficiency and Renewable Energy.

Scott Blake Harris,

General Counsel.

[FR Doc. 2010–10894 Filed 5–6–10; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2010–0437; Directorate Identifier 2009–NM–130–AD]

RIN 2120–AA64

Airworthiness Directives; The Boeing Company Model 737–200, –300, –400, and –500 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain Model 737–200, –300, –400, and –500 series airplanes. This proposed AD would require repetitive inspections for cracking of certain fuselage frames and stub beams, and corrective actions if necessary. This proposed AD also provides for an optional repair, which would terminate the repetitive inspections. For airplanes on which a certain repair is done, this proposed AD would also require repetitive inspections for cracking of certain fuselage frames and stub beams, and corrective actions if necessary. This proposed AD results from reports of the detection of fatigue cracks at certain frame sections, in addition to stub beam cracking, caused by high flight cycle stresses from both pressurization and maneuver loads. We are proposing this AD to detect and correct fatigue cracking of certain fuselage frames and stub beams and possible severed frames, which could result in reduced structural integrity of the frames. This reduced structural integrity can increase loading in the fuselage skin, which will accelerate skin crack growth and could result in rapid decompression of the fuselage.

DATES: We must receive comments on this proposed AD by June 21, 2010.

ADDRESSES: You may send comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov*. Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m.

and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H–65, Seattle, Washington 98124–2207; telephone 206–544–5000, extension 1, fax 206–766–5680; e-mail *me.boecom@boeing.com*; Internet *https://www.myboeingfleet.com*. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425–227–1221.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov*; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Wayne Lockett, Aerospace Engineer, Airframe Branch, ANM–120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057–3356; telephone (425) 917–6447; fax (425) 917–6590.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA–2010–0437; Directorate Identifier 2009–NM–130–AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to *http://www.regulations.gov*, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We have received reports of fatigue cracks at certain frame sections, in addition to stub beam cracking. The fatigue cracking is caused by high flight cycle stresses from both pressurization and maneuver loads. Reduced structural integrity of the frames can increase loading in the fuselage skin, which will accelerate skin crack growth and could result in rapid decompression of the fuselage.

Relevant Service Information

We have reviewed Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009. The service bulletin describes procedures for, among other actions, repetitive detailed inspections for cracks in the body station (BS) 616 and BS 639 frame webs, inner chord, and outer chord, and the stub beam, and corrective actions if necessary. The corrective actions include repair of any cracking before further flight. The procedures also recommend contacting Boeing for repair instructions for certain cracking and repairing before further flight.

As an option to the detailed inspection, the service bulletin describes procedures for a high frequency eddy current (HFEC) inspection for cracks in the same areas, and repair of any crack found. The service bulletin also describes procedures for doing a detailed inspection of the inner chord along the length of the repair and around the fastener heads if a repair or preventative modification exists on the inner chord below the floor that prevents the accomplishment of the detailed or HFEC inspection in that area.

For airplanes on which a certain repair is done, the service bulletin describes procedures for repetitive detailed or HFEC inspections for cracking of the replacement frame section (frame webs, inner chord, and outer chord), and contacting Boeing for repair instructions if any crack is found, and repairing before further flight.

FAA's Determination and Requirements of This Proposed AD

We are proposing this AD because we evaluated all relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. This proposed AD would require accomplishing the actions specified in the service information described previously, except as discussed under "Differences Between the Proposed AD and Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009."

Differences Between the Proposed AD and Boeing Alert Service Bulletin 737–53A1254, Revision 1, Dated July 9, 2009

Although the service bulletin specifies economic inspections and repairs of BS 597 and BS 601 frames, this proposed AD would not require those inspections and repairs.

Although the service bulletin does not address accomplishing the inspections for airplanes on which fewer than 15,000 total flight cycles have been accumulated, this proposed AD would require the inspections on those airplanes.

The service bulletin specifies to contact the manufacturer for instructions on repairing cracks, but this proposed AD would require repairing cracks in one of the following ways:

- Using a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that we have authorized to make those findings.

Costs of Compliance

We estimate that this proposed AD would affect 635 airplanes of U.S. registry. The following table provides the estimated costs for U.S. operators to comply with this proposed AD.

ESTIMATED COSTS

Action	Work hours	Average labor rate per hour	Cost per product	Number of U.S.-registered airplanes	Fleet cost
BS 616 and BS 639 inspection/lower frame and stub beam.	15	$85	$1,275, per inspection cycle.	635	$809,625 per inspection cycle.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866,

2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979), and

3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

You can find our regulatory evaluation and the estimated costs of compliance in the AD Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new AD:

The Boeing Company: Docket No. FAA–2010–0437; Directorate Identifier 2009–NM–130–AD.

Comments Due Date

(a) We must receive comments by June 21, 2010.

Affected ADs

(b) None.

Applicability

(c) This AD applies to The Boeing Company Model 737–200, –300, –400, and –500 series airplanes, certificated in any category; as identified in Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009.

Subject

(d) Air Transport Association (ATA) of America Code 53: Fuselage.

Unsafe Condition

(e) This AD results from the detection of fatigue cracks at certain frame sections, in addition to stub beam cracking, caused by high flight cycle stresses from both pressurization and maneuver loads. The Federal Aviation Administration is issuing this AD to detect and correct fatigue cracking of certain fuselage frames and stub beams and possible severed frames, which could result in reduced structural integrity of the frames. This reduced structural integrity can increase loading in the fuselage skin, which will accelerate skin crack growth and could result in rapid decompression of the fuselage.

Compliance

(f) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Repetitive Inspections and Corrective Actions

(g) At the applicable time specified in paragraph (g)(1), (g)(2), or (g)(3) of this AD: Do a detailed or high frequency eddy current (HFEC) inspection for cracking of body station (BS) 616 and BS 639 frame webs, inner chord, and outer chord, and the stub beams; and do all applicable related investigative and corrective actions; by accomplishing all the actions specified in Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009, except as specified in paragraphs (i) and (j) of this AD. Do all applicable related investigative and corrective actions before further flight. Thereafter, repeat the inspection at intervals not to exceed 4,500 flight cycles since accomplishing the detailed inspection or at intervals not to exceed 9,000 flight cycles since accomplishing the HFEC inspection, as applicable.

(1) For airplanes on which no inspection of the BS 616 and BS 639 frames specified in Boeing Alert Service Bulletin 737–53A1254, dated February 17, 2005, has been done as of the effective date of this AD, and that have accumulated fewer than 55,000 total flight cycles as of the effective date of this AD: Inspect within 3,000 flight cycles after the effective date of this AD, or before the accumulation of 56,500 total flight cycles, whichever occurs first.

(2) For airplanes on which no inspection of the BS 616 and BS 639 frames specified in Boeing Alert Service Bulletin 737–53A1254, dated February 17, 2005, has been done as of the effective date of this AD, and that have accumulated 55,000 or more total flight cycles as of the effective date of this AD: Inspect within 1,500 flight cycles after the effective date of this AD.

(3) For airplanes on which a detailed or HFEC inspection of the BS 616 and BS 639 frames, specified in Boeing Alert Service Bulletin 737–53A1254, dated February 17, 2005, has been done as of the effective date of this AD: Inspect at the later of the times specified in paragraphs (g)(3)(i) and (g)(3)(ii) of this AD.

(i) Within 3,000 flight cycles after the effective date of this AD.

(ii) Within 4,500 flight cycles after the previous inspection done in accordance with Boeing Alert Service Bulletin 737–53A1254, dated February 17, 2005.

Post-Repair Repetitive Inspections and Corrective Actions

(h) For airplanes on which the repair specified in Part 4 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009, has been done: At the applicable time specified in paragraphs (h)(1) and (h)(2) of this AD, do a detailed or HFEC inspection for cracking of the replacement frame section (frame webs, inner chord, and outer chord); and do all applicable related investigative and corrective actions; by accomplishing all the actions specified in Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009, except as specified in paragraphs (i) and (j) of this AD. Do all applicable related investigative and corrective actions before further flight. Thereafter, repeat the inspection at intervals not to exceed 4,500 flight cycles since accomplishing the detailed inspection or at intervals not to exceed 9,000 flight cycles since accomplishing the HFEC inspection, as applicable.

(1) For airplanes on which a partial frame splice repair at BS 616 or BS 639 has been done, and the inner chord and web have been cold-worked: Inspect within 44,000 flight cycles after the repair has been done.

(2) For airplanes on which a partial frame splice repair at BS 616 or BS 639 has been done, and the inner chord and web have not been cold-worked: Inspect within 29,000 flight cycles after that repair has been done.

Alternative Inspection of Repaired or Modified Area

(i) For airplanes on which a repair or preventative modification exists on the inner chord below the floor which prevents the accomplishment of the detailed or HFEC inspection in that area as required by paragraph (g) of this AD: In lieu of inspecting that area, do a detailed inspection of the

inner chord along the length of the repair and around the fastener heads in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009.

Exceptions to Service Information

(j) Where Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009, specifies to contact Boeing for repair instructions and repair: Before further flight, repair the cracking using a method approved in accordance with the procedures specified in paragraph (m) of this AD.

(k) Although Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009, specifies to submit information to the manufacturer, this AD does not include that requirement.

Terminating Action

(l) Doing the repair specified in Part 4 of Boeing Alert Service Bulletin 737–53A1254, Revision 1, dated July 9, 2009, terminates the repetitive inspection requirements of paragraph (g) of this AD for the repaired frame only.

Alternative Methods of Compliance (AMOCs)

(m)(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Wayne Lockett, Aerospace Engineer, Airframe Branch, ANM–120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, Washington 98057–3356; telephone (425) 917–6447; fax (425) 917–6590. Or, e-mail information to *9–ANM–Seattle-ACO–AMOC–Requests@faa.gov*.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office. The AMOC approval letter must specifically reference this AD.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD, if it is approved by an Authorized Representative for the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane.

Issued in Renton, Washington, on April 28, 2010.

Jeffrey E. Duven,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2010–10902 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 110, 119, 121, 129, and 135

[Docket No. FAA–2009–0140; Notice No. 10–07]

RIN 2120–AJ45

Operations Specifications

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This proposed rule would clarify and standardize the rules for applications by foreign air carriers and foreign persons for operations specifications and establish new standards for amendment, suspension or termination of those operations specifications. The proposed rule would also apply to foreign persons operating U.S.-registered aircraft in common carriage solely outside the United States. This action is necessary to update the process for issuing operations specifications, and it will establish a regulatory basis for current practices, such as amending, terminating or suspending operations specifications.

DATES: Send your comments on or before August 5, 2010.

ADDRESSES: You may send comments identified by Docket Number FAA–2009–0140 using any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov* and follow the online instructions for sending your comments electronically.
- *Mail:* Send comments to Docket Operations, M–30; U.S. Department of Transportation, 1200 New Jersey Avenue, SE., Room W12–140, West Building Ground Floor, Washington, DC 20590–0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to Docket Operations at 202–493–2251.

For more information on the rulemaking process, *see* the **SUPPLEMENTARY INFORMATION** section of this document.

Privacy: We will post all comments we receive, without change, to *http://www.regulations.gov*, including any personal information you provide. Using the search function of our docket Web site, anyone can find and read the electronic form of all comments received into any of our dockets, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477–78) or you may visit *http://DocketsInfo.dot.gov*.

Docket: To read background documents or comments received, go to *http://www.regulations.gov* at any time and follow the online instructions for accessing the docket, or, go to the Docket Operations in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Darcy D. Reed, International Programs and Policy Division, AFS–50, Flight Standards Service, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; *e-mail: darcy.d.reed@faa.gov*; *Telephone:* 202–385–8078. For legal questions concerning this proposed rule contact Lorna John, Office of the Chief Counsel, Regulations Division, AGC–200, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; *e-mail: Lorna.John@faa.gov; telephone:* 202–267–3921.

SUPPLEMENTARY INFORMATION: Under the Additional Information section of this preamble, you will find a discussion of how you can comment on this proposal and how the agency will handle your comments. Included in this discussion is related information about the docket, privacy, and handling proprietary or confidential business information. There is also a discussion on how you can get a copy of related rulemaking documents.

Authority for This Rulemaking

The FAA's authority to issue rules on aviation safety is found in title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This proposed rule is issued under the authority described in Title 49 of the United States Code, Subtitle VII, Part A, Subpart III, Section 44701(a)(5). Under that section, the Administrator is charged with promoting safe flight of civil aircraft in air commerce by prescribing regulations and minimum standards for practices, methods, and procedures the Administrator finds

necessary to ensure safety in air commerce. Clarifying and standardizing the rules for application, amendment, suspension, or termination of operations specifications issued to foreign air carriers operating in the United States and to foreign air carriers or foreign persons conducting operations of U.S.-registered aircraft solely outside the United States enhances the FAA's oversight of U.S.-registered aircraft and those foreign air carriers' operations within the United States.

I. Background

Title 49 of the United States Code contains the basic authority for promoting safe flight of civil aircraft in air commerce and for regulating the global operations of U.S.-registered aircraft. For foreign air carriers serving the United States, the basic operating requirements are found in 14 CFR parts 91 and 129. The standards set forth in Annexes 1, 6, and 8 to the Convention on International Civil Aviation (the Chicago Convention), as implemented by the International Civil Aviation Organization (ICAO), also apply to the international operations of air carriers. *The applicable ICAO Annexes* are:

Annex 1—Personnel Licensing,
Annex 6—Part I, Operation of Aircraft—International Commercial Air Transport—Aeroplanes,
Annex 6—Part III, Operation of Aircraft—International Operations—Helicopters, and
Annex 8—Airworthiness of Aircraft.

ICAO Annexes contain the international standards for safety, regulation, and efficiency of air navigation. These international standards define the minimum level of safety necessary for the recognition by Contracting States to the Chicago Convention of certificates of airworthiness, certificates of competency and licenses that allow for the flight of aircraft of other States into or over their territories. They also provide for the protection of other aircraft, third parties, and property. As with all Contracting States to the Chicago Convention, the United States is obligated to recognize only those certificates of airworthiness, certificates of competency, and licenses issued or rendered valid by another Contracting State. The requirements under which these certificates or licenses are issued or rendered valid by the Contracting State must be equal to or above the minimum standards established by the Chicago Convention.

The FAA's authority over a foreign air carrier using foreign-registered aircraft is limited to overseeing compliance with all the applicable provisions of the Chicago Convention and its Annexes, and U.S. regulations for the flights conducted by the foreign air carrier into the United States. Adherence to these standards assures the foreign air carrier's ability to navigate and communicate safely within the U.S. National Airspace System (NAS) while protecting individuals and property on the ground.

To fulfill its oversight responsibilities, the FAA issues operations specifications to foreign air carriers and foreign persons. These operations specifications ensure a common understanding between the foreign air carrier or foreign person and the FAA. The FAA-issued operations specifications describe the scope of a foreign air carrier's operations into the United States, including any applicable authorizations and limitations, and a foreign person's maintenance responsibility for U.S.-registered aircraft operated in common carriage solely outside the United States. The FAA-issued operations specifications do not, however, affect or interfere with the responsibilities of the foreign Civil Aviation Authority (CAA) that issued an air operator certificate to the foreign air carrier. The foreign CAA maintains primary responsibility for the certification of the foreign air carrier and the continuing oversight of the air carrier or foreign person's operations in accordance with applicable ICAO standards.

II. Discussion of the Proposal

14 CFR part 129 prescribes the rules governing foreign air carrier operations within the United States and the operations of U.S.-registered aircraft solely outside the United States in common carriage. In order to meet international standards and the changing aviation environment, it is necessary to revise part 129. For example, the processes for application and amendment of operations specifications for U.S. operators subject to 14 CFR parts 121, 125, and 135 are described in part 119. However, there are no explicit provisions governing the application for, or amendment of, operations specifications issued to foreign air carriers or foreign persons in part 129, nor is there a provision in part 129 for the suspension or termination of operations specifications. Therefore, the FAA proposes to clarify the process for application, amendment, suspension, and termination of operations specifications issued to foreign air carriers and foreign persons.

This proposal would add three new sections to subpart A: § 129.5, Operations Specifications; § 129.7, Application, issuance, or denial of operations specifications; and § 129.9, Contents of operations specifications. This proposed rule would also amend the existing § 129.11 to specifically address amendment, suspension and termination of operations specifications.

Section 129.5 would define which foreign air carriers or foreign persons must hold FAA operations specifications and the effective period of such operations specifications. Current regulations require only foreign air carriers conducting operations into the United States to conduct their operations in accordance with operations specifications issued by the Administrator. Section 129.5 of the proposed rule would extend this requirement to a foreign air carrier or foreign person operating a U.S.-registered aircraft solely outside the United States in common carriage. Additionally, the FAA proposes to include a provision in § 129.5 requiring the foreign air carrier to keep each of its employees, and other persons used in its operations, informed of the provisions of its FAA-issued operations specifications that apply to that employee's or person's duties and responsibilities.

In § 129.7, the FAA proposes to include provisions governing the application, issuance, or denial of operations specifications. The application process for foreign air carriers is presently defined in § 129.11(b) and Appendix A of part 129. It contains outdated requirements that are no longer relevant to the FAA's safety oversight needs.[1] Also, unlike the process for domestic air carrier applicants, which allows more cooperation between the applicant and the FAA, current Appendix A of part 129 requires a foreign applicant to provide very specific information in a particular format. Requiring this degree of detail in form and content does not advance aviation safety and may limit the flexibility necessary to ensure the safety of the flying public. The FAA proposes to remove Appendix A and place general requirements in the new § 129.7(a). However, proposed § 129.7(b) would retain the current requirement in Appendix A, section VIII.B for the applicant to provide a written certification that the statements in the application are true. Using this approach allows the operations specification process to be easily revised

[1] An example of an outdated requirement is a listing of the type and class of certificate held by each flight crewmember employed in the proposed operation within the United States. This requirement is duplicative. Contracting states to the Chicago Convention are obligated to recognize as valid certificates and licenses issued by other contracting states.

and updated to meet the changing aviation environment and FAA safety oversight needs.

Upon issuance of the final rule, the FAA will revise the inspector handbook guidance with an updated application procedure for foreign applicants to obtain FAA-issued foreign operations specifications. The procedure would provide for greater interaction between the foreign applicant and the FAA and ensure that a foreign applicant's programs, systems, and intended methods of compliance are thoroughly reviewed and evaluated in light of U.S. requirements.

The proposed application procedure is as follows:

Preapplication. The foreign applicant makes an inquiry to the FAA regarding the process for obtaining operations specifications. The FAA will provide the foreign applicant with an application package and information on the operations specifications application process.

Formal Application. The responsible Flight Standards District Office (FSDO) will conduct an in-depth review of the foreign air carrier's formal application for operations specifications. Also, the responsible office will hold a formal application meeting to discuss the feasibility of the project and obtain any additional information or request corrections needed for its review.

Documentation. The responsible FSDO will review the applicant's documents in support of its request for issuance of mandatory and optional operations specifications.

Verification. The responsible FSDO will verify the foreign air carrier applicant's DOT economic authority and TSA security program approval (if required).

Issuance. The FAA will assign an operations specification designator and number, and the part 129 operations specifications will be generated and issued to the applicant for acceptance and signature. After issuance, the responsible FSDO will implement a comprehensive ongoing surveillance program.

Using this procedure would allow the FAA to verify that the foreign applicant's programs, systems, and intended methods of compliance have been approved or accepted by the State of the Operator. The information obtained during the application process would also provide the FAA with a basis to determine whether the applicant would be able to comply with all applicable FAA requirements while operating in the NAS.

For foreign air carriers or foreign persons who operate U.S.-registered aircraft in common carriage solely outside the United States, the FAA would provide a simplified application procedure.

Section 129.9 would define the content of operations specifications to be issued to either a foreign air carrier conducting operations within the United States, or a foreign air carrier or foreign person operating U.S.-registered aircraft solely outside the United States in common carriage. By specifying the content of the operations specifications in proposed § 129.9, applicants for these specifications would have clear standards for the submission of their application.

Current regulations do not contain provisions for the amendment, suspension or termination of operations specifications. For example, a foreign air carrier or foreign person may seek reconsideration of an adverse decision relating to its operations specifications using an informal process not established in the regulations. An operator may submit its petition for reconsideration through the FSDO, or an FAA Flight Standards Regional Office or FAA Headquarters. Therefore, there is a need to standardize and streamline all petitions for reconsideration through the office responsible for oversight of the foreign air carrier or foreign person.

The proposed rule would amend § 129.11 to address amendments, suspensions and terminations of operations specifications. The amendment process would be consistent with the process for amending operations specifications issued to domestic operators under part 119. Under the proposed rule, an applicant may apply for an amendment of its operations specification to the responsible FSDO, or the Administrator may amend operations specifications if the Administrator determines that safety in air commerce and the public interest require the amendment. Following an adverse decision, the applicant may submit a petition for reconsideration to the Director, Flight Standards Service within thirty (30) days after the date the foreign air carrier or foreign person receives a notice of the decision. The filing of the petition for reconsideration suspends the decision unless the Administrator determines that an emergency exists requiring immediate action to maintain safety in air commerce or air transportation. For suspension and termination, the FAA proposes to use a process similar to that used for amendments; however the Administrator may conduct consultations under relevant Air Services Agreements prior to suspending or terminating an operations specification.

The FAA proposes to amend § 129.13, the aircraft airworthiness and registration certificate requirements, to include recognition of the validity of certificates of airworthiness issued or validated by a State of the Operator under Article 83bis of the Chicago Convention. Currently § 129.13 requires airworthiness certificates for foreign air carriers to be issued or validated by the State of Registry and does not recognize Article 83bis agreements with the State of the Operator, although the U.S. obligation to accept those agreements is stated in inspector handbook guidance. The proposed amendment to § 129.13 would allow recognition of third-party transfers of airworthiness certificates under Article 83bis agreements registered with ICAO.

Similarly, the FAA proposes to amend § 129.15 to provide for the recognition of the validity of crew licenses (certificates) issued or validated by a State of the Operator under agreements whereby the State of Registry of an aircraft transfers certain oversight functions to the State of the Operator of the aircraft in accordance with Article 83bis of the Chicago Convention. Although this U.S. obligation is also currently stated in inspector handbook guidance, § 129.15 requires crew licenses (certificates) for foreign air carriers to be issued or validated by the State of Registry and does not recognize crew licenses or certificates transferred under Article 83bis agreements registered with ICAO.

Present regulations do not define how the FAA grants maintenance approval for U.S.-registered aircraft. Therefore, the FAA proposes to amend § 129.14 by changing the FAA approval process for the minimum equipment list (MEL) and maintenance programs of U.S.-registered aircraft used by foreign air carriers and foreign persons. Under this proposed rule, the FAA would grant maintenance program and minimum equipment list approval for U.S.-registered aircraft in FAA-issued operations specifications, which is the practice FAA field offices currently follow.

With the addition of §§ 129.5, 129.7, 129.9, and the amendments to § 129.11 and § 129.14, the FAA proposes to clarify the applicability of part 129 to certain operations of U.S.-registered aircraft operated solely outside the United States in common carriage by a foreign person or foreign air carrier. Therefore, § 129.1(b) would be revised to clarify that §§ 129.5, 129.7, 129.9, 129.11, 129.14, 129.20 and 129.24 and subpart B apply to U.S.-registered aircraft operated solely outside the

United States in common carriage by a foreign person or foreign air carrier.

As described in § 119.1(d), part 119 does not govern operations conducted under part 91, subpart K (when common carriage is not involved), nor does it apply to parts 129, 133, 137 or 139. However, the introductory sentence of § 119.3 requires application of the definitions included in § 119.3 to all of subchapter G, which includes parts 119, 121, 125, 129, 133, 135, 136, 137 and 139. Because not all of these parts are subject to the substantive requirements of part 119, it is not immediately clear that all of the definitions in § 119.3 apply to subchapter G, including part 129.

The FAA proposes to create a new part 110 which will set forth the general requirements applicable to all of subchapter G, including the definitions currently located in § 119.3. Section 119.3 is redesignated as § 110.2, and all of the references in parts 119, 121 and 135 of subchapter G to the definitions formerly contained in § 119.3 were changed to § 110.2. These changes to parts 110, 119, 121 and 135 are editorial in nature, and the FAA has made no substantive changes to any of the definitions transferred to the new part. Further, this editorial change will have no impact on the applicability of the definitions contained in 14 CFR part 1 to subchapter G, unless otherwise specified.

Additionally, the FAA proposes to eliminate the outdated reference to the Civil Aeronautics Board (CAB) in 14 CFR 129.1(a)(1). This revision is necessary since the CAB no longer exists, and all economic authority is now granted by the Department of Transportation (DOT).

Currently, § 129.11(a) requires foreign air carriers to comply with ICAO standards and recommended practices in part 1 of Annex 6 of the Chicago Convention; however, the Chicago Convention requires compliance with ICAO standards only. By amending § 129.11(a) to remove the incorrect reference to "recommended practices," the proposed rule would clarify the international standards applicable to foreign air carriers operating within the United States.

In 2007, FAA chartered the Part 129 Aviation Rulemaking Committee (ARC) to provide advice, guidance and recommendations on comprehensive changes to part 129. This proposed rule does not address the ARC's recommendations. The FAA will consider those recommendations in a future rulemaking.

To fulfill its oversight responsibilities, the FAA issues operations specifications to foreign air carriers and foreign persons to ensure a common understanding of the scope of their operations. Operations specifications describe: (1) The scope of a foreign air carrier's operations into the United States, including any applicable authorizations and limitations; and (2) Maintenance responsibility for U.S.-registered aircraft operated by foreign air carriers and foreign persons within or outside the United States. The foreign civil aviation authority is responsible for the certification and the continuing oversight of the air carrier or foreign person's operations in accordance with applicable ICAO standards.

The following table summarizes the proposed changes to existing provisions of parts 119 and 129, identifies new provisions, and references the relevant ICAO standard implemented in the rule, if applicable.

Existing part 119	Proposed new part 110
Definitions: Definitions applicable to part 129 are currently included in part 119, subchapter G. Since part 119 applies to certification requirements for part 135 and 121 operators, there is potential confusion concerning whether subchapter G applies to part 129.	*Definitions:* The proposal would remove definitions from subchapter G of part 119 and include them in a new part 110.
Existing part 129	**Proposed part 129 changes**
Ops Specs—Amendment, suspension or termination: Current regulations do not provide for the amendment, suspension, or termination of Operations Specifications. Information is currently in the Inspector Guidance.	*Ops Specs—Amendment, suspension or termination:* The proposal would provide a legal basis for the amendment, suspension, or termination of Operations Specifications.
Application process: The application process and requirements are outdated and impose an unnecessary burden on the operator and the FAA—No safety value (*e.g.,* Provide names, license type and class held by each flight crewmember to include en route training—Lufthansa employs numerous airmen that change constantly).	*Application process:* The proposal would remove outdated portions of Appendix A and place general requirements in the new § 129.7(a). Specific application processes will be contained in Inspector Guidance for easy updating. In addition, the proposal would clarify and standardize the rules for applications by foreign air carriers and foreign persons for operations specifications issued under 14 CFR part 129.
Appeal process for foreign operators: There is no formal administrative process for a foreign operator to appeal a decision to amend, suspend or terminate its operations specifications.	*Appeal process for foreign operators:* The proposal would provide an administrative appeals process allowing foreign operators and foreign persons to submit a petition for reconsideration to the Director, Flight Standards Service before seeking judicial review under 49 USC 46110.
Chicago Convention: There is no regulatory provision for the recognition of Article 83*bis* of the Chicago Convention. However, current FAA guidance contains this information. (**Note:** Article 83*bis* allows the transfer of certain functions and duties from the State of Registry to the State of the Operator under an agreement between the States concerned.)	*Chicago Convention:* The proposed rule allows the FAA to recognize crew licenses and/or airworthiness certificates issued or validated by a State of the Operator under agreements whereby the State of Registry of an aircraft transfers certain oversight functions to the State of the Operator in accordance with Article 83*bis* of the Chicago Convention.

III. Paperwork Reduction Act

This proposal contains the following new information collection requirements. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. section 3507(d)), the FAA has submitted the information requirements associated with this proposal to the Office of Management and Budget for its review.

Title: Part 129 Operations Specifications.

Summary: This proposed rule would clarify and standardize the rules for applications by foreign air carriers and foreign persons for operations specifications issued under 14 CFR part 129 and establish new standards for

amendment, suspension and termination of those operations specifications. The proposed rule would also apply to foreign persons operating U.S. registered aircraft in common carriage solely outside the United States. This action is necessary to update the process for issuing operations specifications, and it will establish a regulatory basis for current practices, such as amending, terminating or suspending operations specifications.

Use of: This proposal would support the information needs of the FAA in order to maintain an adequate level of safety oversight.

Respondents (including number of): The likely respondents to this proposed information requirement are potential new applicants for operations specifications. The average number of respondents is approximately twenty-five each year.

Frequency: The FAA estimates five Flight Standards District Offices (FSDOs) will receive approximately five applications each per year.

Annual Burden Estimate: This proposal would result in an annual recordkeeping and reporting burden as follows: 75 hours annually.

The agency is soliciting comments to—

(1) Evaluate whether the proposed information requirement is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of the agency's estimate of the burden;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of collecting information on those who are to respond, including by using appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Individuals and organizations may send comments on the information collection requirement by August 5, 2010, and should direct them to the address listed in the Addresses section at the end of this preamble. Comments also should be submitted to the Office of Management and Budget, Office of Information and Regulatory Affairs, *Attention:* Desk Officer for FAA, New Executive Building, Room 10202, 725 17th Street, NW., Washington, DC 20053.

According to the 1995 amendments to the Paperwork Reduction Act (5 CFR 1320.8(b)(2)(vi)), an agency may not collect or sponsor the collection of information, nor may it impose an information collection requirement unless it displays a currently valid OMB control number. The OMB control number for this information collection will be published in the **Federal Register**, after the Office of Management and Budget approves it.

IV. International Compatibility

Consistent with U.S. obligations under the Chicago Convention, it is the FAA's policy to comply with ICAO standards to the maximum extent practicable. The proposed amendments will allow the FAA to carry out its obligations under the Chicago Convention by providing for the recognition of the validity of certificates of airworthiness and crew licenses issued or validated by a State of the Operator in accordance with Article 83*bis* of the Chicago Convention. Additionally, the provisions relating to the issuance of operations specifications are consistent with the ICAO standard for issuing operations specifications to operators conducting international air transportation.

The European Aviation Safety Agency (EASA) obtained competence from the European Parliament to regulate third country operators of aircraft engaged in commercial operations into, within or out of the European Community (EC) in 2008. Regulation (EC) No 216/2008 provides competence to EASA to issue and renew authorizations for third country operators and to amend, limit, suspend or revoke the relevant authorization. The FAA will continue to coordinate with EASA on methods to streamline the operations specifications process, as appropriate.

V. Regulatory Evaluation, Regulatory Flexibility Determination, International Trade Impact Assessment, and Unfunded Mandates Assessment

Proposed changes to Federal Regulations must undergo several economic analyses. First, Executive Order 12866 directs each Federal agency to propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Pub. L. 96–354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Pub. L. 96–39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, the Trade Act requires agencies to consider international standards and, where appropriate, use them as the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by private sector, of $100 million or more annually (adjusted for inflation with base year of 1995).

For regulations with an expected minimal impact, the above-specified analyses are not required. The Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If it is determined that the expected impact is so minimal that the proposal does not warrant a full evaluation, a statement to that effect and the basis for it is included in proposed regulation.

This NPRM will have minimal economic impact because it does not propose to significantly change the rules regarding FAA's obligation for safety oversight of foreign air carriers and foreign persons under the Chicago Convention, but actually incorporates ICAO standards for acceptance of airworthiness certificates and crewmember licenses under Article 83*bis* of the Chicago Convention. This proposed rule also standardizes and clarifies the operations specification process. Accordingly, the FAA has determined as a result of the removal of outdated requirements in Appendix A, there may be a reduction in costs for foreign air carriers or persons who will need to apply for operations specifications. Due to streamlining and clarification of the application process, there may be a decrease in costs to foreign air carriers or persons. In addition, there will be some benefits to foreign air carriers and foreign persons by creating an administrative appeals process. The FAA requests comments from the public on the costs and benefits of this proposal, and the resulting determination that the proposals within the NPRM will have minimal economic impact.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Pub. L. 96–354) (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals

and to explain the rationale for their actions to assure that such proposals are given serious consideration." The RFA covers a wide range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a large number of small entities. If the agency determines that it will, the agency must prepare an initial regulatory flexibility analysis as described in the RFA. However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

This proposed rule would clarify and standardize the rules for applications by foreign air carriers and foreign persons for operations specifications issued under 14 CFR part 129 and establish new standards for amendment, suspension and termination of operations specifications by incorporating current policies and procedures into the regulations. The proposed rule applies only to foreign air carriers and operations of U.S.-registered aircraft in common carriage solely outside the United States. Domestic operators are not impacted by this proposed rule. This proposed rule merely revises and clarifies FAA operations specifications application procedures; the expected outcome will not increase cost to any United States small entity. Therefore, the FAA certifies that this proposed rule will not have a significant economic impact on a substantial number of small entities.

International Trade Impact Assessment

The Trade Agreements Act of 1979 (Pub. L. 96–39), as amended by the Uruguay Round Agreements Act (Pub. L. 103–465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The purpose of this proposed rule is to ensure the safety of the American public, and it does not exclude imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The proposed rule considers and incorporates an international standard promulgated pursuant to the Chicago Convention and is consistent with current ICAO standards. The FAA has assessed the potential effect of this proposed rule and has determined that it will impose minimal costs on international entities and may provide cost-savings to these entities and thus have a neutral trade impact.

Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of $100 million or more (adjusted annually for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action." The FAA currently uses an inflation-adjusted value of $143.1 million in lieu of $100 million.

This NPRM does not contain such a mandate. Therefore, the requirements of Title II of the Act do not apply.

VI. Executive Order 13132, Federalism

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, Federalism. We determined that this action would not have a substantial direct effect on the States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, does not have federalism implications.

VII. Regulations Affecting Intrastate Aviation in Alaska

Section 1205 of the FAA Reauthorization Act of 1996 (110 Stat. 3213) requires the Administrator, when modifying regulations in title 14 CFR in a manner affecting intrastate aviation in Alaska, to consider the extent to which Alaska is not served by transportation modes other than aviation, and to establish appropriate regulatory distinctions. Because this proposed rule would apply to the application, amendment, suspension and termination of operations specifications of foreign air carriers that operate into the United States, the rule should not affect intrastate aviation in Alaska.

VIII. Environmental Analysis

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this proposed rulemaking action qualifies for the categorical exclusion identified in paragraph 312d and involves no extraordinary circumstances.

IX. Regulations That Significantly Affect Energy Supply, Distribution, or Use

The FAA has analyzed this NPRM under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). It has determined that it is not a "significant energy action" under the executive order, and it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

X. Additional Information

Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The FAA also invites comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA asks that you send two copies of written comments.

The FAA will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. The docket is available for public inspection before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also review the docket using the Internet at the web address in the **ADDRESSES** section.

Availability of Rulemaking Documents

You can get an electronic copy of rulemaking documents using the Internet by—

1. Searching the Federal eRulemaking Portal (*http://www.regulations.gov*);

2. Visiting the FAA's Regulations and Policies web page at *http://www.faa.gov/regulations_policies/;* or

3. Accessing the Government Printing Office's web page at *http://www.gpoaccess.gov/fr/index.html.*

You can also get a copy by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM–1, 800 Independence Avenue, SW., Washington, DC 20591, or by calling (202) 267–9680. Make sure to identify the docket number, notice number, or amendment number of this rulemaking.

You may access all documents the FAA considered in developing this proposed rule, including economic analyses and technical reports, from the internet through the Federal eRulemaking Portal referenced in the paragraph above.

List of Subjects

14 CFR Part 110

Administrative practice and procedure, air carriers, aircraft, aviation safety, charter flights, reporting and recordkeeping requirements.

14 CFR Part 119

Administrative practice and procedure, air carriers, aircraft, aviation safety, charter flights, reporting and recordkeeping requirements.

14 CFR Part 121

Air carriers, aircraft, airmen, alcohol abuse, aviation safety, charter flight, drug abuse, drug testing, reporting and recordkeeping requirements, safety, transportation.

14 CFR Part 129

Air carriers, aircraft, aviation safety, reporting and recordkeeping requirements, security measures, smoking.

14 CFR Part 135

Air taxis, aircraft, airmen, alcohol abuse, aviation safety, drug abuse, drug testing, reporting and recordkeeping requirements.

The Proposed Amendments

In consideration of the foregoing, the Federal Aviation Administration proposes to amend chapter I of title 14, Code of Federal Regulations as follows:

1. Add part 110 to read as follows:

PART 110—GENERAL REQUIREMENTS

Sec.
110.1 Applicability.
110.2 Definitions.

Authority: 49 U.S.C. 106(g), 1153, 40101, 40102, 40103, 40113, 44105, 44106, 44111, 44701–44717, 44722, 44901, 44903, 44904, 44906, 44912, 44914, 44936, 44938, 46103, 46105.

§ 110.1 Applicability.

This part governs all operations conducted under subchapter G of this chapter.

§ 110.2 Definitions.

For the purpose of this subchapter, the term—

All-cargo operation means any operation for compensation or hire that is other than a passenger-carrying operation or, if passengers are carried, they are only those specified in §§ 121.583(a) or 135.85 of this chapter.

Certificate-holding district office means the Flight Standards District Office that has responsibility for administering the certificate and is charged with the overall inspection of the certificate holder's operations.

Commercial air tour means a flight conducted for compensation or hire in an airplane or helicopter where a purpose of the flight is sightseeing. The FAA may consider the following factors in determining whether a flight is a commercial air tour:

(1) Whether there was a holding out to the public of willingness to conduct a sightseeing flight for compensation or hire;

(2) Whether the person offering the flight provided a narrative that referred to areas or points of interest on the surface below the route of the flight;

(3) The area of operation;

(4) How often the person offering the flight conducts such flights;

(5) The route of flight;

(6) The inclusion of sightseeing flights as part of any travel arrangement package;

(7) Whether the flight in question would have been canceled based on poor visibility of the surface below the route of the flight; and

(8) Any other factors that the FAA considers appropriate.

Commuter operation means any scheduled operation conducted by any person operating one of the following types of aircraft with a frequency of operations of at least five round trips per week on at least one route between two or more points according to the published flight schedules:

(1) Airplanes, other than turbojet powered airplanes, having a maximum passenger-seat configuration of 9 seats or less, excluding each crewmember seat, and a maximum payload capacity of 7,500 pounds or less; or

(2) Rotorcraft.

Direct air carrier means a person who provides or offers to provide air transportation and who has control over the operational functions performed in providing that transportation.

DOD commercial air carrier evaluator means a qualified Air Mobility Command, Survey and Analysis Office (AMC/DOB) cockpit evaluator performing the duties specified in Public Law 99–661 when the evaluator is flying on an air carrier that is contracted or pursuing a contract with the U.S. Department of Defense (DoD).

Domestic operation means any scheduled operation conducted by any person operating any airplane described in paragraph (1) of this definition at locations described in paragraph (2) of this definition:

(1) Airplanes:

(i) Turbojet-powered airplanes;

(ii) Airplanes having a passenger-seat configuration of more than 9 passenger seats, excluding each crewmember seat; or

(iii) Airplanes having a payload capacity of more than 7,500 pounds.

(2) Locations:

(i) Between any points within the 48 contiguous States of the United States or the District of Columbia; or

(ii) Operations solely within the 48 contiguous States of the United States or the District of Columbia; or

(iii) Operations entirely within any State, territory, or possession of the United States; or

(iv) When specifically authorized by the Administrator, operations between any point within the 48 contiguous States of the United States or the District of Columbia and any specifically authorized point located outside the 48 contiguous States of the United States or the District of Columbia.

Empty weight means the weight of the airframe, engines, propellers, rotors, and fixed equipment. Empty weight excludes the weight of the crew and payload, but includes the weight of all fixed ballast, unusable fuel supply, undrainable oil, total quantity of engine coolant, and total quantity of hydraulic fluid.

Flag operation means any scheduled operation conducted by any person operating any airplane described in paragraph (1) of this definition at the locations described in paragraph (2) of this definition:

(1) Airplanes:

(i) Turbojet-powered airplanes;

(ii) Airplanes having a passenger-seat configuration of more than 9 passenger seats, excluding each crewmember seat; or

(iii) Airplanes having a payload capacity of more than 7,500 pounds.

(2) Locations:

(i) Between any point within the State of Alaska or the State of Hawaii or any territory or possession of the United States and any point outside the State of Alaska or the State of Hawaii or any territory or possession of the United States, respectively; or

(ii) Between any point within the 48 contiguous States of the United States or the District of Columbia and any point outside the 48 contiguous States of the United States and the District of Columbia.

(iii) Between any point outside the U.S. and another point outside the U.S.

Justifiable aircraft equipment means any equipment necessary for the operation of the aircraft. It does not include equipment or ballast specifically installed, permanently or otherwise, for the purpose of altering the empty weight of an aircraft to meet the maximum payload capacity.

Kind of operation means one of the various operations a certificate holder is authorized to conduct, as specified in its operations specifications, i.e., domestic, flag, supplemental, commuter, or on-demand operations.

Maximum payload capacity means:

(1) For an aircraft for which a maximum zero fuel weight is prescribed in FAA technical specifications, the maximum zero fuel weight, less empty weight, less all justifiable aircraft equipment, and less the operating load (consisting of minimum flightcrew, foods and beverages, and supplies and equipment related to foods and beverages, but not including disposable fuel or oil).

(2) For all other aircraft, the maximum certificated takeoff weight of an aircraft, less the empty weight, less all justifiable aircraft equipment, and less the operating load (consisting of minimum fuel load, oil, and flightcrew). The allowance for the weight of the crew, oil, and fuel is as follows:

(i) Crew—for each crewmember required by the Federal Aviation Regulations—

(A) For male flight crewmembers—180 pounds.

(B) For female flight crewmembers—140 pounds.

(C) For male flight attendants—180 pounds.

(D) For female flight attendants—130 pounds.

(E) For flight attendants not identified by gender—140 pounds.

(ii) Oil—350 pounds or the oil capacity as specified on the Type Certificate Data Sheet.

(iii) Fuel—the minimum weight of fuel required by the applicable Federal Aviation Regulations for a flight between domestic points 174 nautical miles apart under VFR weather conditions that does not involve extended overwater operations.

Maximum zero fuel weight means the maximum permissible weight of an aircraft with no disposable fuel or oil. The zero fuel weight figure may be found in either the aircraft type certificate data sheet, the approved Aircraft Flight Manual, or both.

Noncommon carriage means an aircraft operation for compensation or hire that does not involve a holding out to others.

On-demand operation means any operation for compensation or hire that is one of the following:

(1) Passenger-carrying operations conducted as a public charter under part 380 of this chapter or any operations in which the departure time, departure location, and arrival location are specifically negotiated with the customer or the customer's representative that are any of the following types of operations:

(i) Common carriage operations conducted with airplanes, including turbojet-powered airplanes, having a passenger-seat configuration of 30 seats or fewer, excluding each crewmember seat, and a payload capacity of 7,500 pounds or less, except that operations using a specific airplane that is also used in domestic or flag operations and that is so listed in the operations specifications as required by § 119.49(a)(4) of this chapter for those operations are considered supplemental operations;

(ii) Noncommon or private carriage operations conducted with airplanes having a passenger-seat configuration of less than 20 seats, excluding each crewmember seat, and a payload capacity of less than 6,000 pounds; or

(iii) Any rotorcraft operation.

(2) Scheduled passenger-carrying operations conducted with one of the following types of aircraft with a frequency of operations of less than five round trips per week on at least one route between two or more points according to the published flight schedules:

(i) Airplanes, other than turbojet powered airplanes, having a maximum passenger-seat configuration of 9 seats or less, excluding each crewmember seat, and a maximum payload capacity of 7,500 pounds or less; or

(ii) Rotorcraft.

(3) All-cargo operations conducted with airplanes having a payload capacity of 7,500 pounds or less, or with rotorcraft.

Passenger-carrying operation means any aircraft operation carrying any person, unless the only persons on the aircraft are those identified in §§ 121.583(a) or 135.85 of this chapter, as applicable. An aircraft used in a passenger-carrying operation may also carry cargo or mail in addition to passengers.

Principal base of operations means the primary operating location of a certificate holder as established by the certificate holder.

Provisional airport means an airport approved by the Administrator for use by a certificate holder for the purpose of providing service to a community when the regular airport used by the certificate holder is not available.

Regular airport means an airport used by a certificate holder in scheduled operations and listed in its operations specifications.

Scheduled operation means any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier or commercial operator for which the certificate holder or its representative offers in advance the departure location, departure time, and arrival location. It does not include any passenger-carrying operation that is conducted as a public charter operation under part 380 of this chapter.

Supplemental operation means any common carriage operation for compensation or hire conducted with any airplane described in paragraph (1) of this definition that is a type of operation described in paragraph (2) of this definition:

(1) Airplanes:

(i) Airplanes having a passenger-seat configuration of more than 30 seats, excluding each crewmember seat;

(ii) Airplanes having a payload capacity of more than 7,500 pounds; or

(iii) Each propeller-powered airplane having a passenger-seat configuration of more than 9 seats and less than 31 seats, excluding each crewmember seat, that is also used in domestic or flag operations and that is so listed in the operations specifications as required by § 119.49(a)(4) of this chapter for those operations; or

(iv) Each turbojet powered airplane having a passenger seat configuration of 1 or more and less than 31 seats, excluding each crewmember seat, that is also used in domestic or flag operations and that is so listed in the operations specifications as required by § 119.49(a)(4) of this chapter for those operations.

(2) Types of operation:

(i) Operations for which the departure time, departure location, and arrival location are specifically negotiated with the customer or the customer's representative;

(ii) All-cargo operations; or

(iii) Passenger-carrying public charter operations conducted under part 380 of this chapter.

Wet lease means any leasing arrangement whereby a person agrees to

provide an entire aircraft and at least one crewmember. A wet lease does not include a code-sharing arrangement.

When common carriage is not involved or operations not involving common carriage means any of the following:

(1) Noncommon carriage.

(2) Operations in which persons or cargo are transported without compensation or hire.

(3) Operations not involving the transportation of persons or cargo.

(4) Private carriage.

Years in service means the calendar time elapsed since an aircraft was issued its first U.S. or first foreign airworthiness certificate.

PART 119—CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

2. The authority citation for part 119 continues to read as follows:

Authority: 49 U.S.C. 106(g), 1153, 40101, 40102, 40103, 40113, 44105, 44106, 44111, 44701–44717, 44722, 44901, 44903, 44904, 44906, 44912, 44914, 44936, 44938, 46103, 46105.

§ 119.3 [Removed and Reserved]

3. Remove and reserve § 119.3.

§ 119.51 [Amended]

4. Amend § 119.51(c)(1)(i) by removing the citation "§ 119.3" and adding the citation "§ 110.2" in its place.

§ 119.53 [Amended]

5. Amend § 119.53(e) by removing the citation "§ 119.3" and adding the citation "§ 110.2" in its place.

PART 121—CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

6. The authority citation for part 121 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40119, 41706, 44101, 44701, 44702, 44705, 44709, 44710, 44711, 44713, 44716, 44717, 44722, 46105.

§ 121.313 [Amended]

7. Amend § 121.313 by removing the citation "§ 119.3" and adding the citation "§ 110.2" in its place.

§ 121.582 [Amended]

8. Amend § 121.582 by removing the citation "§ 119.3" and adding the citation "§ 110.2" in its place.

PART 129—OPERATIONS: FOREIGN AIR CARRIERS AND FOREIGN OPERATORS OF U.S.-REGISTERED AIRCRAFT ENGAGED IN COMMON CARRIAGE

9. The authority citation for part 129 continues to read as follows:

Authority: 49 U.S.C. 1372, 40113, 40119, 44101, 44701–44702, 44705, 44709–44711, 44713, 44716–44717, 44722, 44901–44904, 44906, 44912, 46105, Pub. L. 107–71 sec, 104.

10. Amend § 129.1 by revising paragraphs (a)(1), (a)(2), and (b) to read as follows:

§ 129.1 Applicability and definitions.

(a) * * *

(1) A permit issued by the U.S. Department of Transportation under 49 U.S.C. 41301 through 41306, or

(2) Other appropriate economic or exemption authority issued by the U.S. Department of Transportation.

(b) Operations of U.S.-registered aircraft solely outside the United States.

In addition to the operations specified under paragraph (a) of this section, §§ 129.5, 129.7, 129.9, 129.11, 129.14, 129.20 and 24, and subpart B of this part also apply to operations of U.S.-registered aircraft operated solely outside the United States in common carriage by a foreign person or foreign air carrier.

* * * * *

11. Add § 129.5 to read as follows:

§ 129.5 Operations specifications.

(a) Each foreign air carrier conducting operations within the United States, and each foreign air carrier or foreign person operating U.S. registered aircraft solely outside the United States in common carriage must conduct its operations in accordance with operations specifications issued by the Administrator under this part.

(b) Each foreign air carrier conducting operations within the United States must conduct its operations in accordance with the Standards contained in Annex 1 (Personnel Licensing), Annex 6 (Operation of Aircraft), Part I (International Commercial Air Transport—Aeroplanes) or Part III (International Operations—Helicopters), as appropriate, and in Annex 8 (Airworthiness of Aircraft) to the Convention on International Civil Aviation.

(c) No foreign air carrier may operate to or from locations within the United States without, or in violation of, appropriate operations specifications.

(d) No foreign air carrier or foreign person shall operate U.S. registered aircraft solely outside the United States in common carriage without, or in violation of, appropriate operations specifications.

(e) Each foreign air carrier must keep each of its employees and other persons used in its operations informed of the provisions of its operations specifications that apply to that employee's or person's duties and responsibilities.

(f) Operations specifications issued under this part are effective until—

(1) The foreign air carrier or foreign person surrenders them to the FAA;

(2) The Administrator suspends or terminates the operations specifications; or

(3) The operations specifications are amended as provided in § 129.11.

(g) Within 30 days after a foreign air carrier or foreign person terminates operations under part 129 of this subchapter, the operations specifications must be surrendered by the foreign air carrier or foreign person to the responsible Flight Standards District Office.

(h) No person operating under this part may operate or list on its operations specifications any airplane listed on operations specifications issued under part 125 of this chapter.

12. Add § 129.7 to read as follows:

§ 129.7 Application, issuance, or denial of operations specifications.

(a) A foreign air carrier or foreign person applying to the FAA for operations specifications under this part must submit an application—

(1) In a form and manner prescribed by the Administrator; and

(2) At least 90 days before the intended date of operation.

(b) An authorized officer or employee of the applicant, having knowledge of the matters stated in the application, must sign the application and certify in writing that the statements in the application are true. The application must include two copies of the appropriate written authority issued to that officer or employee by the applicant.

(c) A foreign applicant may be issued operations specifications, if after review, the Administrator finds the applicant—

(1) Meets the applicable requirements of this part;

(2) Holds the economic or exemption authority required by the Department of Transportation, applicable to the operations to be conducted;

(3) Complies with the applicable security requirements of 49 CFR chapter XII;

(4) Is properly and adequately equipped to conduct the operations described in the operations specifications; and

(5) Holds a valid air operator certificate issued by the State of the Operator.

(d) An application may be denied if the Administrator finds that the applicant is not properly or adequately equipped to conduct the operations to be described in the operations specifications.

13. Add § 129.9 to read as follows:

§ 129.9 Contents of operations specifications.

(a) The contents of operations specifications issued to a foreign air carrier conducting operations within the United States under § 129.1(a) shall include:

(1) The specific location and mailing address of the applicant's principal place of business in the State of the Operator and, if different, the address that will serve as the primary point of contact for correspondence between the FAA and the foreign air carrier;

(2) The designation of an agent for service within the United States, including the agent's full name and office address or usual place of residence;

(3) The certificate number and validity of the foreign air carrier's Air Operator Certificate issued by the State of the Operator;

(4) Each regular and alternate airport to be used in scheduled operations;

(5) The type of aircraft and registration markings of each aircraft;

(6) The approved maintenance program and minimum equipment lists for United States registered aircraft authorized for use; and

(7) Any other item the Administrator determines is necessary.

(b) The contents of operations specifications issued to a foreign air carrier or foreign person operating U.S.-registered aircraft solely outside the United States in common carriage in accordance with § 129.1(b) shall include—

(1) The specific location and mailing address of the principal place of business in the State of the Operator and, if different, the address that will serve as the primary point of contact for correspondence between the FAA and the foreign air carrier or foreign person;

(2) The designation of an agent for service within the United States, including the agent's full name and office address or usual place of residence;

(3) In the case of a foreign air carrier, the certificate number and validity of the foreign air carrier's Air Operator Certificate issued by the State of the Operator;

(4) Any other business names under which the foreign air carrier or foreign person may operate;

(5) The type, registration markings, and serial number of each United States registered aircraft authorized for use;

(6) The approval of maintenance programs and minimum equipment lists for United States registered aircraft authorized for use; and

(7) Any other item the Administrator determines is necessary.

14. Revise § 129.11 to read as follows:

§ 129.11 Amendment, suspension, and termination of operations specifications.

(a) The Administrator may amend any operations specifications issued under this part if—

(1) The Administrator determines that safety in air commerce and the public interest require the amendment; or

(2) The foreign air carrier or foreign person applies for an amendment, and the Administrator determines that safety in air commerce and the public interest allows the amendment.

(b) The Administrator may suspend or terminate any operations specifications issued under this part if the Administrator determines that safety in air commerce and the public interest require the suspension or termination;

(c) Except as provided in paragraphs (f) and (g) of this section, when the Administrator initiates an action to amend, suspend or terminate a foreign air carrier or foreign person's operations specifications, the following procedure applies:

(1) The responsible Flight Standards District Office notifies the foreign air carrier or foreign person in writing of the proposed amendment, suspension or termination.

(2) The responsible Flight Standards District Office sets a reasonable period (but not less than 7 days) within which the foreign air carrier or foreign person may submit written information, views, and arguments on the amendment, suspension or termination.

(3) After considering all material presented, the responsible Flight Standards District Office notifies the foreign air carrier or foreign person of—

(i) The adoption of the proposed amendment, suspension or termination;

(ii) The partial adoption of the proposed amendment, suspension or termination; or

(iii) The withdrawal of the proposed amendment, suspension or termination.

(4) If the responsible Flight Standards District Office issues an action to amend, suspend or terminate the operations specifications, it becomes effective not less than 30 days after the foreign air carrier or foreign person receives notice of it unless—

(i) The responsible Flight Standards District Office finds under paragraph (g) of this section that there is an emergency requiring immediate action with respect to safety in air commerce; or

(ii) The foreign air carrier or foreign person petitions for reconsideration of the amendment, suspension or termination under paragraph (e) of this section.

(d) When the foreign air carrier or foreign person applies for an amendment to its operations specifications, the following procedure applies:

(1) The foreign air carrier or foreign person must file an application to amend its operations specifications—

(i) At least 90 days before the date proposed by the applicant for the amendment to become effective in cases of mergers; acquisitions of airline operational assets that require an additional showing to Department of Transportation for economic authority; major changes in the type of operation and resumption of operations following a suspension of operations as a result of bankruptcy actions, unless a shorter time is approved by the Administrator.

(ii) At least 30 days before the date proposed by the applicant for the amendment to become effective in all other cases.

(2) The application must be submitted to the responsible Flight Standards District Office in a form and manner prescribed by the Administrator.

(3) After considering all material presented, the responsible Flight Standards District Office notifies the foreign air carrier or foreign person of—

(i) The adoption of the applied for amendment;

(ii) The partial adoption of the applied for amendment; or

(iii) The denial of the applied for amendment.

(4) If the responsible Flight Standards District Office approves the amendment, following coordination with the foreign air carrier or foreign person regarding its implementation, the amendment is effective on the date the responsible Flight Standards District Office approves it.

(e) The foreign air carrier or foreign person may petition for reconsideration of a full or partial adoption of an amendment, a denial of an amendment or a suspension or termination of operations specifications.

(f) When a foreign air carrier or foreign person seeks reconsideration of a decision from the responsible Flight Standards District Office concerning the amendment, suspension or termination

of operations specifications, the following procedure applies:

(1) The foreign air carrier or foreign person must petition for reconsideration of that decision within 30 days after the date that the foreign air carrier or foreign person receives a notice of the decision.

(2) The foreign air carrier or foreign person must address its petition to the Director, Flight Standards Service.

(3) A petition for reconsideration, if filed within the 30-day period, suspends the effectiveness of any amendment, suspension or termination issued by the responsible Flight Standards District Office unless the responsible Flight Standards District Office has found, under paragraph (g) of this section, that an emergency exists requiring immediate action with respect to safety in air transportation or air commerce.

(g) If the responsible Flight Standards District Office finds that an emergency exists requiring immediate action with respect to safety in air commerce or air transportation that makes the procedures set out in this section impracticable or contrary to the public interest, that office may make the amendment, suspension or termination effective on the day the foreign air carrier or foreign person receives notice of it. In the notice to the foreign air carrier or foreign person, the responsible Flight Standards District Office will articulate the reasons for its finding that an emergency exists requiring immediate action with respect to safety in air transportation or air commerce or that makes it impracticable or contrary to the public interest to stay the effectiveness of the amendment, suspension or termination.

15. Amend § 129.13 by revising paragraph (a) to read as follows:

§ 129.13 Airworthiness and registration certificates.

(a) No foreign air carrier may operate any aircraft within the United States unless that aircraft carries a current registration certificate and displays the nationality and registration markings of the State of Registry, and an airworthiness certificate issued or validated by:

(1) The State of Registry; or

(2) The State of the Operator, provided that the State of the Operator and the State of Registry have entered into an agreement under Article 83*bis* of the Convention on International Civil Aviation that covers the aircraft.

* * * * *

16. Amend § 129.14 by revising paragraphs (a), (b)(4) and (b)(7) to read as follows:

§ 129.14 Maintenance program and minimum equipment list requirements for U.S.-registered aircraft.

(a) Each foreign air carrier and each foreign person operating a U.S.-registered aircraft within or outside the United States in common carriage must ensure that each aircraft is maintained in accordance with a program approved by the Administrator in the operations specifications.

(b) * * *

(4) The FAA operations specification permitting the operator to use an approved minimum equipment list is carried aboard the aircraft. An approved minimum equipment list, as authorized by the operations specifications, constitutes an approved change to the type design without requiring recertification.

* * * * *

(7) The aircraft is operated under all applicable conditions and limitations contained in the minimum equipment list and the operations specification authorizing the use of the list.

17. Revise § 129.15 to read as follows:

§ 129.15 Flight crewmember certificates.

Each person acting as a flight crewmember must hold a certificate or license that shows the person's ability to perform duties in connection with the operation of the aircraft. The certificate or license must have been issued or rendered valid by:

(a) The State in which the aircraft is registered; or

(b) The State of the Operator, provided that the State of the Operator and the State of Registry have entered into an agreement under Article 83*bis* of the Convention on International Civil Aviation that covers the aircraft.

Appendix A to Part 129 [Removed and Reserved]

18. Remove and reserve Appendix A to part 129.

PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON DEMAND OPERATIONS AND RULES GOVERNING PERSONS ON BOARD SUCH AIRCRAFT

19. The authority citation for part 135 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 41706, 44701, 44702, 44705, 44709, 44711, 44713, 44715, 44717, 44722, 46105.

§ 135.127 [Amended]

20. Amend § 135.127(b)(1)(iii) by removing the citation "§ 119.3" and adding the citation "§ 110.2" in its place.

§ 135.127 [Amended]

21. Amend § 135.127(b)(2) by removing the citation "§ 119.3" and adding the citation "§ 110.2" in its place.

Issued in Washington, DC, on May 4, 2010.

Raymond Towles,

Acting Director, Flight Standards Service.

[FR Doc. 2010–10890 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Parts 173, 174, 181, and 187

[Docket No. USCG–2003–14963]

RIN 1625–AB45

Changes to Standard Numbering System, Vessel Identification System, and Boating Accident Report Database

AGENCY: Coast Guard, DHS.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Coast Guard proposes to amend its rules related to numbering of undocumented vessels and reporting of casualties. These changes would align and modernize terminology used in the Standard Numbering System (SNS), the Vessel Identification System (VIS), and casualty reporting; require validation of vessel hull identification numbers; require SNS vessel owners to provide personally identifiable information; and provide administrative flexibility for States. Together, the proposed changes would improve recreational boating safety efforts, enhance law enforcement capabilities, advance maritime security, and clarify requirements for all stakeholders.

DATES: Comments and related material must either be submitted to our online docket via *http://www.regulations.gov* on or before August 5, 2010 or reach the Docket Management Facility by that date. Comments sent to the Office of Management and Budget (OMB) on collection of information must reach OMB on or before August 5, 2010.

ADDRESSES: You may submit comments identified by docket number USCG–2003–14963 using any one of the following methods:

(1) *Federal eRulemaking Portal: http://www.regulations.gov.*

(2) *Fax:* 202–493–2251.

(3) *Mail:* Docket Management Facility (M–30), U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590–0001.

(4) *Hand delivery:* Same as mail address above, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is 202–366–9329.

To avoid duplication, please use only one of these four methods. See the "Public Participation and Request for Comments" portion of the **SUPPLEMENTARY INFORMATION** section below for instructions on submitting comments.

Collection of Information Comments: If you have comments on the collection of information discussed in section V.D of this NPRM, you must also send comments to the Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget. To ensure that your comments to OIRA are received on time, the preferred methods are by e-mail to *oira_submission@omb.eop.gov* (include the docket number and "Attention: Desk Officer for Coast Guard, DHS" in the subject line of the e-mail) or fax at 202–395–6566. An alternate, though slower, method is by U.S. mail to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, ATTN: Desk Officer, U.S. Coast Guard.

FOR FURTHER INFORMATION CONTACT: If you have questions on this proposed rule, write, call or e-mail Mr. Jeff Ludwig at 2100 2nd St., SW. Stop 7581, Washington, DC 20593–7581; telephone 202–372–1061, or e-mail *Jeffrey.A.Ludwig@uscg.mil*. If you have questions on viewing or submitting material to the docket, call Renee V. Wright, Program Manager, Docket Operations, telephone 202–366–9826.

SUPPLEMENTARY INFORMATION:

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I. Public Participation and Request for Comments

We encourage you to participate in this rulemaking by submitting comments and related materials to us. All comments received will be posted without change to *http://www.regulations.gov* and will include any personal information you provide.

A. Submitting Comments

If you submit a comment, please include the docket number for this rulemaking (USCG–2003–14963), indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation. You may submit your comments and material online or by fax, mail, or hand delivery, but please use only one of these means. We recommend that you include your name and a mailing address, an e-mail address, or a phone number in the body of your document so that we can contact you if we have questions regarding your submission.

To submit your comment online, go to *http://www.regulations.gov,* click on the "submit a comment" box, which will then become highlighted in blue. In the "Document Type" drop down menu select "Proposed Rule" and insert "USCG–2003–14963" in the "Keyword" box. Click "Search"; then click on the balloon shape in the "Actions" column. If you submit your comments by mail or hand delivery, submit them in an unbound format, no larger than 8½ by 11 inches, suitable for copying and electronic filing. If you submit comments by mail and would like to know that they have reached the Facility, please enclose a stamped, self-addressed postcard or envelope.

We will consider all comments and material received during the comment period and may change this proposed rule based on your comments.

B. Viewing Comments and Documents

To view comments, as well as documents mentioned in this preamble as being available in the docket, go to *http://www.regulations.gov,* click on the "read comments" box, which will then become highlighted in blue. In the "Keyword" box insert USCG–2003–14963 and click "Search." Click the "Open Docket Folder" in the "Actions" column. If you do not have access to the internet, you may view the docket online by visiting the Docket Management Facility in Room W12–140 on the ground floor of the Department of Transportation West Building, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. We have an agreement with the Department of Transportation that allows you to use the Docket Management Facility.

C. Privacy Act

Anyone can search the electronic form of comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, *etc.*). You may review a Privacy Act notice regarding our public dockets in the January 17, 2008 issue of the **Federal Register** (73 FR 3316).

D. Public Meeting

We do not plan to hold a public meeting. But you may submit a request for one to the docket using one of the methods specified under **ADDRESSES**. In your request, explain why you believe a public meeting would be beneficial. If we determine that one would aid this rulemaking, we will hold one at a time and place to be announced by a later notice in the **Federal Register.**

II. Abbreviations

BARD Boating Accident Report Database
CFR Code of Federal Regulations
DHS Department of Homeland Security
FR Federal Register
HIN Hull Identification Number
NBSAC National Boating Safety Advisory Council
PII Personally Identifiable Information
§ Section symbol
SNS Standard Numbering System
U.S.C. United States Code
VIS Vessel Identification System

III. Background

Coast Guard regulations in 33 CFR parts 173 and 174 implement two statutory mandates relating to undocumented vessels equipped with propulsion machinery of any kind. First, the regulations provide for a Standard Numbering System (SNS) that assigns unique identification numbers to those vessels, as required by 46 U.S.C. 12302. Each State voluntarily uses the SNS to number vessels that are registered in that State.[1] Second, the regulations provide for the uniform reporting by each State of recreational vessel casualty and accident data, as required by 46 U.S.C. 6102. We maintain a Boating

[1] If a State does not have a numbering system consistent with the SNS, or does not issue identification numbers to vessels registered in that State, the Coast Guard issues those vessels identification numbers under the SNS. "State" is defined in 33 CFR 173.3 as "a State of the United States, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and the District of Columbia."

Accident Report Database (BARD) for this data.

We are also statutorily required to maintain a Vessel Identification System (VIS) that covers not only the undocumented vessels to which SNS applies, but also documented vessels and any vessel titled under State law (46 U.S.C. 12501). VIS makes vessel identification information available, for law enforcement or other purposes, to the Coast Guard and to States that voluntarily comply with its data sharing requirements. VIS was developed in coordination with relevant State agencies and became operational in 2007. To date, many States have opted to participate in VIS. VIS regulations appear in 33 CFR part 187.

Because of our role as the coordinator of the National Recreational Boating Safety Program, our leadership position in maritime law enforcement and maritime security efforts, and our partnership with other Federal and State agencies with similar responsibilities, we seek continual improvement in the efficiency and effectiveness of SNS, BARD, and VIS. This rulemaking proposes several changes that are intended to further those improvements. Many of the proposed changes were initially suggested by the National Boating Safety Advisory Council (NBSAC), a 21-member group that operates under the Federal Advisory Committee Act to advise the Coast Guard on recreational boating safety issues. NBSAC consists of seven representatives of State officials responsible for State boating safety programs; seven representatives of recreational vessel manufacturers and associated equipment manufacturers; and seven representatives of national recreational boating organizations and from the general public, at least five of whom must be representatives of national recreational boating organizations.

IV. Discussion of Proposed Rule

We propose the following changes. We intend to phase-in many of the most substantive proposed changes over three years, and we specifically invite public comment on whether that phase-in period is adequate.

Terminology alignment. We propose aligning the terminology used by SNS, BARD, and VIS to describe recreational vessels and their operation. This will leverage our ability to coordinate data from all three databases to facilitate boating safety, law enforcement, and maritime security purposes.

Terminology modernization and harmonization. We propose updating the terminology used by SNS, BARD, and VIS to reflect today's recreational boating environment. For example, we propose new language to recognize the increased use of personal watercraft, towed watersports, and pod drive propulsion systems; and updated terminology to describe how recreational vessels are operated. We will also harmonize language in our regulations with wording changes made in the 1983 revision of Title 46 of the U.S. Code.

Hull identification numbers (HINs). We propose requiring the States administering SNS to ensure that each SNS-registered vessel built after November 1, 1972, when the original HIN regulations took effect, has or obtains a valid HIN. Many vessels that are required to have a valid HIN either lack any HIN or have a HIN that does not comply with current requirements. This proposal is intended to help deter theft and improve law enforcement and maritime security capabilities by ensuring that law enforcement officers can readily identify vessels by their HIN and, in turn, identify their rightful owners.

Unique personal identifiers. For VIS vessel owners, we currently collect personally identifiable information (PII), like taxpayer identification numbers, as required by 46 U.S.C. 12501. This PII has high value for law enforcement and maritime security purposes because it provides unique information connecting individuals with the vessels they own. Additionally, 46 U.S.C. 12501(a)(2) and (b) require that the VIS contain the PII of the owners of vessels numbered under the SNS. Therefore, we propose requiring the collection of PII for SNS as well as VIS. This proposed change would align the SNS and VIS data elements that States must collect, which will facilitate law enforcement and maritime safety efforts by broadening and aligning the data available in these two systems, and may make it easier for States to decide to participate in VIS.

Administrative flexibility. We propose some changes that would provide additional administrative flexibility for States. For example, we propose adding waiver provisions to VIS regulations in 33 CFR 187.11. Waivers could allow a State to participate temporarily in VIS, despite the need for new State legislation or other action to bring the State into full compliance with our regulations, under a memorandum of agreement that sets conditions intended to ensure effective participation.

Table 1 shows how these changes would apply to specific sections of Title 33 of the CFR. It omits discussion of several non-substantive style or format changes made solely to improve clarity or internal organization.

TABLE 1—CHANGES PROPOSED FOR 33 CFR

CFR section affected	Proposed changes	Discussion
***Note:** Substantive changes proposed for sections marked with an asterisk (*) in this table would be phased in over three years.		
Purpose, § 173.1	Clarify that Part 173 has preemptive effect over State or local regulation.	Clarification.
Definitions, § 173.3	Add or revise definitions	Align with substantive changes elsewhere in the proposal.
Vessel number required, § 173.15	Substitute "State of principal operation" for "State in which the vessel is principally used."	Modernize/harmonize terminology.
Other numbers prohibited, § 173.19	Substitute "operate" for "use."	Modernize/harmonize terminology.
Certificate of number required, § 173.21	Substitute "operate" and "operated" for "use" and "used."	Modernize/harmonize terminology.
Inspection of certificate, § 173.23	Substitute "operating" for "using."	Modernize/harmonize terminology.
Location of certificate of number, § 173.25	Substitute "operate" for "use."	Modernize/harmonize terminology.
Removal of number, § 173.33	Substitute "operated" for "used."	Modernize/harmonize terminology.
Coast Guard validation sticker, § 173.35	Substitute "operate" for "use."	Modernize/harmonize terminology.
Applicability, § 173.51	Substitute "operated" for "used."	Modernize/harmonize terminology.

TABLE 1—CHANGES PROPOSED FOR 33 CFR—Continued

CFR section affected	Proposed changes	Discussion
Contents of report,* § 173.57	Amend current section so that it remains in effect only until January of the year following the third anniversary of the final rule's taking effect.	(c)(10), (c)(21)–(c)(24): Align and modernize/harmonize terminology.
	Add new (c), containing provisions that would take effect in January of the year following the third anniversary of the final rules's taking effect.	(c)(14), (c)(16): Facilitate accident investigations by collecting information about the owners of damaged property and about fire extinguishers on vessels involved in accidents. The phase-in period allows adequate time for transition and ensures a uniform date for revising the data to be reported in all States.
Where to report, § 173.59	Delete option of reporting accident elsewhere than in the State where the accident occurred.	Require report to be filed where accident occurred because this has greater relevance than a report to the State of principal operation or of certificate issuance.
Application for and issuance of certificate of number, § 173.71.	Authorize issuance of original or duplicate certificates.	Clarify authority and make it explicit. Modernize/harmonize terminology.
Duplicate certificate of number, § 173.73	Remove section	Transfer substance to § 173.71.
Validity of certificate of number, § 173.77	Substitute "operated" for "used."	*Modernize/harmonize terminology.*
Issuing authorities and reporting authorities, 33 CFR Part 173, Appendix A.	Substitute "operation" for "use."	*Modernize/harmonize terminology.*
Applicability, § 174.1	Clarify that Part 174 has preemptive effect over State or local regulation.	Clarification.
Definitions, § 174.3	Add or revise definitions	Align with substantive changes elsewhere in the proposal.
Verification of hull identification number,* § 174.16.	Require States to verify vessel's compliance with HIN requirements, or to assign valid HIN, using methods of the State's choice.	Per text discussion of HINs.
	Allow States up to three years to implement the changes.	Effective date is intended to give the states up to three years to implement the changes. States will have up to three additional years to update boat registration information depending on registration cycle.
Contents of application for certificate of number,* § 174.17.	Require unique personal identifier	Per text discussion of unique personal identifiers. Align and modernize/harmonize terminology.
	(c) Allow States up to three years to implement the changes.	Up to three years after final rule for States to implement changes. Up to three additional years for States to update boat registration.
Contents of a certificate of number,* § 174.19	Delete current option for owners of vessels with HINs to omit information about the vessel's make, manufacture date, length, type, hull material, propulsion method, and fuel; and make other minor changes.	Eliminate option, to facilitate data verification for law enforcement and maritime security purposes by ensuring that full information is available for enforcement or security personnel. Align and modernize/harmonize terminology.
	Allow States up to three years to implement the changes.	Up to three years after final rule for States to implement changes. Up to three additional years for States to update boat registration.
Temporary certificates,* § 174.21	Clarify, add HIN as required information, substitute "operated" for "used."	Per text discussion of HINs. Clarify and modernize/harmonize terminology.
	Allow States up to three years to implement the changes.	Up to three years after final rule for States to implement changes. Up to three additional years for States to update boat registration.
Forwarding of casualty or accident reports, § 174.121.	Add electronic submission option. Change address.	Allow for choices in reporting method, align with Federal e-Government initiatives, and update information.
Coast Guard address, § 174.125	Change address	Update information.
Purpose and applicability, § 181.1	Clarify that Part 181 has preemptive effect over State or local regulation.	Clarification.
Definitions, § 181.3	Add or revise definitions	Align with substantive changes elsewhere in the proposal.
Hull identification numbers required, § 181.23	Add new (b) (revise and relocate current language from § 181.31(c)).	Per text discussion of HINs.
	Substitute "agency designated by the issuing authority" for references to the State boating law administrator.	Provide flexibility for States to designate, as HIN number assignor, agencies other than the State boating law administrator.

TABLE 1—CHANGES PROPOSED FOR 33 CFR—Continued

CFR section affected	Proposed changes	Discussion
Manufacturer identification code assignment, § 181.31.	Remove (c) (relocated to § 181.23).	
How is a State's participation in VIS documented? § 187.11.	Revise section	Per text discussion of administrative flexibility.
What information must be collected to identify a vessel? § 187.103.	Add "of vessel" in (h), and revise (i)–(n)	Clarify (h) and align and modernize/harmonize terminology in (i)–(n).

V. Regulatory Analyses

We developed this proposed rule after considering numerous statutes and executive orders related to rulemaking. Below we summarize our analyses based on 13 of these statutes or executive orders.

A. Regulatory Planning and Review

This proposed rule is not a significant regulatory action under section 3(f) of Executive Order 12866, Regulatory Planning and Review, and does not require an assessment of potential costs and benefits under section 6(a)(3) of that Order. The Office of Management and Budget has not reviewed it under that Order.

A combined "Preliminary Regulatory Analysis and Initial Regulatory Flexibility Analysis" is available in the docket where indicated under the "Public Participation and Request for Comments" section of this preamble. A summary of the analysis follows:

Coast Guard regulations in 33 CFR parts 173 and 174 implement two statutory mandates relating to undocumented vessels equipped with propulsion machinery of any kind. First, the regulations provide for an SNS that assigns unique identification numbers to those vessels, as required by 46 U.S.C. 12302. Second, the regulations provide for the uniform reporting by each State [2] of recreational vessel casualty and accident data, as required by 46 U.S.C. 6102. The Coast Guard maintains a Boating Accident Report Database (BARD) that contains this information.

The Coast Guard is statutorily required to maintain a Vessel Identification System (VIS), which covers not only the undocumented vessels to which SNS applies, but also documented vessels and any vessel titled under State law. VIS comprises a nationwide information system for identifying recreational, commercial, and public vessels that are numbered or titled under the laws of a state or territory. VIS includes information identifying vessels, vessel owners and information to assist law enforcement officials in the investigation of stolen vessels or other legal investigation, such as fraud. That information includes the personally identifiable information required by 46 U.S.C. 12501(a)(2) and (b).

The Coast Guard proposes to amend its rules to promote uniformity between the Standard Numbering System (SNS), the Vessel Identification System (VIS), and Boating Accident Report Database (BARD).

The proposed changes would enhance the capabilities of Federal, State, and local boating safety and law enforcement officials. These proposed changes would result in additional costs and benefits. In general, this rulemaking would:

- Require issuance of a valid HIN to vessels that do not already have one. This would be phased in only as certificates of number are issued or renewed or upon the transfer of a vessel's ownership.
- Align terminology used by SNS, BARD, and VIS to describe recreational vessels and their operation.
- Modernize terminology to reflect statutory usage and current recreational vessel types, operations and equipment. States would have up to three years in which to update their systems to use the newer terminology.
- Require the collection of unique identification information for each vessel owner who applies for an SNS number. States would have up to three years in which to implement this change.
- Provide administrative flexibility for States to designate, as HIN number assignor, agencies other than the State boating law administrator.

We estimate that this proposed rule would affect approximately 12.4 million recreational vessels. The harmonization of terminology and the additional questions on the forms used to collect the data for the SNS would affect all recreational vessels. The harmonization of terminology and the additional questions on the forms used to collect information from boating casualties would affect those recreational vessels involved in boating accidents. There are approximately 5,094 boating accidents annually. Approximately 91 percent of recreational boats affected by this rulemaking appear to be in compliance with the HIN requirement already, leaving 9 percent potentially needing to have the HIN verified or affixed.[3]

The implementation of these requirements would begin in the third year of the effective date of the proposed rule, so costs would be incurred during the third year of the period of analysis. There would be a three-year implementation period for requirements from the third year through the fifth year. We estimated the total average costs of this rulemaking over a 10-year period as summarized in Table 1. Costs are presented as undiscounted and discounted estimates.

TABLE 1—SUMMARY OF COSTS

[Millions of dollars]

Year	Undiscounted	Discount rate	
		7%	3%
1	$0.0	$0.0	$0.0
2	0.0	0.0	0.0
3	16.5	13.5	15.1
4	10.2	7.8	9.0
5	7.9	5.6	6.8
6	3.8	2.5	3.2
7	3.8	2.4	3.1
8	3.8	2.2	3.0
9	3.8	2.1	2.9
10	3.8	1.9	2.8
Total	53.6	38.0	46.0

* Figures may not total due to rounding.

In the initial year of implementation (year 3), we estimate the cost of the rulemaking to be $16.5 million (undiscounted). We estimate the annual recurring costs to be $3.8 million (undiscounted) after the three-year implementation period. We estimate the total present value cost over a 10-year period of analysis to be $38.0 million,

[2] Throughout the Regulatory Analyses section, "State" refers not only to a State of the United States, but also to the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and the District of Columbia.

[3] We obtained information on boat hull identification numbers from Info-Link, which is the company that administers the Coast Guard's Vessel Identification System.

discounted at 7 percent, and $46.0 million, discounted at 3 percent.

The main cost driver for this proposed rule is the verification of the HIN by the issuing authority with documentation or visual inspection of the vessel when no proper record of the HIN exists. The issuing authority, usually the State, would have the option to choose the most suitable verification method. For example, some States might require the vessel owner to take the vessel to a specific location for verification, while others might assign personnel to conduct verification at marinas or merely require the vessel owner to file a sworn compliance affidavit. The HIN verification makes up over 90% percent ($15.3 million, non-discounted) of the first-year cost of implementation and over 70% ($2.8 million, non-discounted) of the annual recurring cost after the three-year implementation period of this proposed rule.

In this rulemaking, the Coast Guard is proposing requirements that are intended to improve the information within various databases by increasing the quality of the information and by harmonizing terminology. This enhanced information and subsequent cross-reference between the databases is a benefit that would accrue to all users of these databases. The Coast Guard and other users of the SNS, VIS and BARD information utilize it in their decision-making processes. Sometimes these are decisions made by law enforcement in the field, such as boarding officers, in determining how best to investigate an accident involving a vessel.[4] The information would also prove useful in decision-making and analysis when it comes to future boating safety rulemakings.

Some of the benefits of the proposed HIN verification may accrue to the boat-owner or other entity associated with the vessel. For example, a verified HIN properly linked to the boat-owner can aid in the return of a stolen vessel.

The "Preliminary Regulatory Analysis and Initial Regulatory Flexibility Analysis" available on the docket provides additional detail on the costs and benefits of this rulemaking. The Coast Guard urges interested parties to submit comments that specifically address the economic impacts of this rulemaking. Comments can be made as indicated in the **ADDRESSES** section.

B. Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601–612), we have considered whether this proposed rule would have a significant economic impact on a substantial number of small entities. The term "small entities" comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of fewer than 50,000 people.

A combined "Preliminary Regulatory Analysis and Initial Regulatory Flexibility Analysis" discussing the impact of this proposed rule on small entities is available in the docket where indicated under the **ADDRESSES** section of this preamble. A summary of the analysis follows:

The proposed rule would regulate recreational vessels. Individuals, such as the recreational vessel owners regulated by this rule, are not small entities under the definition of a small entity in the Regulatory Flexibility Act (RFA).[5]

We estimate that there are potentially 136,209 owners of recreational vessels used for commercial purposes that may be affected by parts of this rulemaking. Of these, there are potentially 12,259 owners of recreational vessels used for commercial purposes that may have to have the HIN of the vessel verified.

Based on available data, we determined that over 90 percent of these entities are small by SBA size standards. We found that small entities affected by this proposed rule were small businesses consisting of owners and operators in the industry categories of engine equipment manufacturing, boat dealers, hotels, business support services and amusement and recreation.

Based on our assessment of the impacts, we determined that all owners or operators affected by this rule would incur an economic impact of less than 1 percent of revenue. At this time, we have determined that this proposed rule would not have a significant economic impact on a substantial number of small entities under section 605(b) of the Regulatory Flexibility Act.

We are interested in the potential impacts from this proposed rule on small businesses and we request public comment on these potential impacts. If you think that your business, organization, or governmental jurisdiction qualifies as a small entity and that this rulemaking would have a significant economic impact on it, please submit a comment to the Docket Management Facility at the address under **ADDRESSES**. In your comment, explain why, how and to what degree you think this rule would have an economic impact on you.

C. Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this proposed rule so that they can better evaluate its effects on them and participate in the rulemaking. If the proposed rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please consult Jeff Ludwig, Office of Auxiliary and Boating Safety, 202–372–1061. The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1–888–REG–FAIR (1–888–734–3247).

D. Collection of Information

This proposed rule affects three collections of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). It would modify existing Office of Management and Budget (OMB) Collection of Information, OMB Control Number 1625–0003, "Coast Guard Boating Accident Report Form," OMB Control Number 1625–0070, "Vessel Identification System," and OMB Control Number 1625–0108, "Standard Numbering System for Undocumented Vessels."

As defined in 5 CFR 1320.3(c), "collection of information" comprises reporting, recordkeeping, monitoring, posting, labeling, and other, similar actions. The title and description of the information collections, a description of those who must collect the information, and an estimate of the total annual burden follow. The estimate covers the time for reviewing instructions, searching existing sources of data, gathering and maintaining the data needed, and completing and reviewing the collection.

The proposed rule would add to the recordkeeping and reporting

[4] See the Collection of Information OMB 1625–0108 supporting documentation for further information.

[5] These are individuals that do not use vessels for commercial purposes.

requirements of recreational vessel owners and agencies involved in issuing registrations for recreational vessels and reporting boating accidents.

The issuing authority would have to modify the Boating Casualty Report form, modify the Certificate of Number application and, in cases where necessary, verify that a HIN is properly affixed to the vessel and recorded. The owners of recreational vessels would have to answer more questions when they or their vessels are involved in a boating accident and when applying for a Certificate of Number. Owners of recreational vessels that do not have a properly fixed or recorded HIN would have to allow the issuing authorities to verify the HIN.

For additional detail and information on the burden of this proposed rule, see the Preliminary Regulatory Analysis available in the docket as listed under the "Public Participation and Request for Comments" section of this preamble. A summary of each collection amendment and associated burden follows:

Title: Coast Guard Boating Accident Report Form.

OMB Control Number: 1625–0003.

Summary of the Collection of Information: Federal regulations (33 CFR 173.55) require the operator of any vessel that is numbered or used for recreational purposes to submit an accident report to the issuing authority where the accident occurred.

Need for Information: 46 U.S.C. 6102(a) requires a uniform marine casualty reporting system, with regulations prescribing casualties to be reported and the manner of reporting.

Proposed Use of Information: The Coast Guard uses accident data and statistical information received from the current collection to establish National Recreational Boating Safety (RBS) Program goals, objectives, strategies and performance measures; report RBS Program performance to Congress in the performance and budget reports; identify possible manufacturer defects in boats or equipment; develop boat manufacturing standards; develop safe boating education and accident prevention programs; and publish accident statistics in accordance with Title 46 U.S.C. 6102.

Description of Respondents: Operators of recreational boats and governments of States.

Number of Respondents/Reports: The estimated number of respondents is 56, both current and revised. The revised estimated number of reports is 5,094 compared to the current estimate of 5,000. The higher number of reports is based on an increase in the average number of reports, not a programmatic change.

Frequency of Response: On occasion. Specifically, within 30 days of their receipt of a report as prescribed by 33 CFR 174.121 (Forwarding of casualty or accident reports).

Burden of Response: The estimated revised burden is 2,972 hours per year. The current burden is 2,500. There is an estimated 35-minute burden to a respondent for each report filed for an annual estimated burden of 2,972 hours for the estimated 5,094 reports (5,094 reports * 0.583 hours = 2,972 hours).

Title: Vessel Identification System.

OMB Control Number: 1625–0070.

Summary of the Collection of Information: The Coast Guard established a nationwide vessel identification system (VIS) and centralized certain vessel documentation functions. VIS provides participating States with access to data on vessels numbered by States. Participation in VIS is voluntary.

Need for Information: Title 46 U.S.C. 12501 mandates the establishment of a VIS. Title 33 CFR part 187 prescribes the requirements of VIS.

Proposed Use of Information: This information collection supports the strategic goals of the Department of Homeland Security, the Coast Guard and the Marine Safety, Security and Stewardship Directorate (CG–5).

Description of Respondents: Operators of recreational boats and governments of States.

Number of Respondents and Responses: The estimated number of respondents is 56, both revised and current. The revised estimate of the number of responses is 117,671 compared to the current 125,716. The decrease shown above is due to a reduction in the average number of responses and not a programmatic change.

Frequency of Response: Daily.

Burden of Response: The estimated burden has decreased from 5,829 hours to the revised estimate of 5,456 hours a year. Each response is expected to take approximately 3 minutes (117,671 responses * 0.046 hours = 5,456 hours; rounded).

Title: Standard Numbering System for Undocumented Vessels.

OMB Control Number: 1625–0108.

Summary of the Collection of Information: The SNS collects information on undocumented vessels and vessel owners. States submit reports annually to the Coast Guard on the number, size, construction, *etc.,* of the vessels they have numbered. That information is used by the Coast Guard in the publication of an annual "Boating Statistics" report required by 46 U.S.C. 6102(b), and for allocation of Federal funds to assist in carrying out the Recreational Boating Safety (RBS) Program established by 46 U.S.C. Chapter 131.

Need for Information: On a daily basis or as warranted, Federal, State, and local law enforcement personnel use SNS information from the States' numbering systems for enforcement of boating laws or theft and fraud investigations. In addition, when encountering a vessel suspected of illegal activity, information from the SNS increases officer safety by assisting boarding officers in determining how best to approach a vessel.

Proposed Use of Information: Federal, State, and local law enforcement personnel use SNS information from the States' numbering systems for enforcement of boating laws or theft and fraud investigations. The information is used by the Coast Guard for publication of an annual "Boating Statistics" report required by 46 U.S.C. 6102(b) and for allocation of Federal funds to assist States in carrying out the Recreational Boating Safety (RBS) Program established by 46 U.S.C. Chapter 131.

Description of Respondents: Operators of recreational boats and governments of States.

Number of Respondents and Responses: The estimated number of respondents is 56, both revised and current. The revised estimate of the number of responses is 4,644,142 compared to the current 4,333,333.

Frequency of Response: Daily as necessary.

Burden of Response: The revised estimate of the number of burden hours per year is 379,852 compared to the current burden hours of 286,458. There would be an average 5-minute burden per response for each report filed for an annual estimated burden of 379,852 hours for the estimated 4,644,142 responses.

There are no collection costs to the Federal Government for the SNS because States implement the program.

If you submit comments on the collection of information, submit them both to OMB and to the Docket Management Facility as indicated under **ADDRESSES**, by the date under **DATES**.

You need not respond to a collection of information unless it displays a currently valid control number from OMB. Before the Coast Guard could enforce the collection of information requirements in this proposed rule, OMB would need to approve the Coast Guard's request to collect this information.

E. Federalism

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on State or local governments and would either preempt State law or impose a substantial direct cost of compliance on them. It is well settled that States may not regulate in categories reserved for regulation by the Coast Guard.

The regulations in 33 CFR part 173 subparts A, B, and D, and Part 174 subparts A, B, and D, are issued pursuant to 46 U.S.C. 12301 and 12302 and expressly preempt conflicting State or local regulation.

The regulations in 33 CFR part 173 subpart C and part 174 subpart C are issued pursuant to 46 U.S.C. 6101. 46 U.S.C. 6101 states that "The Secretary shall prescribe regulations on the marine casualties to be reported and the manner of reporting." The statute requires, among other things, the reporting of the death of an individual, serious injury to an individual, material loss of property, material damage affecting the seaworthiness or efficiency of the vessel, and significant harm to the environment.

The Supreme Court has held that "Congress intended that the Coast Guard regulations be the sole source of a vessel's reporting obligations * * *" and that Coast Guard regulations promulgated pursuant to the authority of 46 U.S.C. 6101 were not intended by Congress "to be cumulative to those enacted by each political subdivision whose jurisdiction a vessel enters." *See* the decision of the Supreme Court in the consolidated cases of *United States* v. *Locke* and *Intertanko* v. *Locke,* 529 U.S. 89, 115–116 (2000). Therefore, the Coast Guard's view is that regulations issued under the authority of 46 U.S.C. 6101 for marine casualty reporting requirements have preemptive effect over State regulation in these fields, except to the extent that Congress requires the Coast Guard to allow State casualty reporting systems pursuant to 46 U.S.C. Chapter 131.

The regulations in 33 CFR part 181 are issued pursuant to 46 U.S.C. 4302. Under 46 U.S.C. 4306, Federal regulations establishing minimum safety standards for recreational vessels and associated equipment, and establishing procedures and tests required to measure conformance with those standards preempt State law, unless the State law is identical to a Federal regulation or a State is specifically provided an exemption to those regulations, or permitted to regulate marine safety articles carried or used to address a hazardous condition or circumstance unique to that State.

The regulations in 33 CFR part 187 are currently issued pursuant to 46 U.S.C. 2103. We are proposing to add 46 U.S.C. 12501 as an additional authority. Because State participation in the VIS is entirely voluntary, the regulations in 33 CFR part 187 do not have preemptive impact over State regulation in this field. However, once electing to participate, a State must comply with the requirements of this part to ensure integrity and uniformity of information in both the SNS and VIS.

The Coast Guard recognizes the key role State and local governments may have in making regulatory determinations. Additionally, sections 4 and 6 of Executive Order 13132 require that for any rules with preemptive effect, the Coast Guard must provide elected officials of affected State and local governments and their representative national organizations the notice and opportunity for appropriate participation in any rulemaking proceedings, and to consult with such officials early in the rulemaking process. Therefore, we invite affected State and local governments and their representative national organizations to indicate their desire for participation and consultation in this rulemaking process by submitting comments to the docket using one of the methods specified under **ADDRESSES**. In accordance with Executive Order 13132, the Coast Guard will provide a federalism impact statement to document (1) the extent of the Coast Guard's consultation with State and local officials that submit comments to this proposed rule, (2) a summary of the nature of any concerns raised by State or local governments and the Coast Guard's position thereon, and (3) a statement of the extent to which the concerns of State and local officials have been met.

F. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 (adjusted for inflation) or more in any one year. Though this proposed rule would not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

G. Taking of Private Property

This proposed rule would not effect a taking of private property or otherwise have taking implications under Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

H. Civil Justice Reform

This proposed rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

I. Protection of Children

We have analyzed this proposed rule under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. This rule is not an economically significant rule and would not create an environmental risk to health or risk to safety that might disproportionately affect children.

J. Indian Tribal Governments

This proposed rule does not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it would not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

K. Energy Effects

We have analyzed this proposed rule under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. We have determined that it is not a "significant energy action" under that order because it is not a "significant regulatory action" under Executive Order 12866 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

L. Technical Standards

The National Technology Transfer and Advancement Act (NTTAA) (15 U.S.C. 272 note) directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through the Office of Management and Budget, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* specifications of materials, performance, design, or

operation; test methods; sampling procedures; and related management systems practices) that are developed or adopted by voluntary consensus standards bodies.

This proposed rule does not use technical standards. Therefore, we did not consider the use of voluntary consensus standards.

M. Environment

We have analyzed this proposed rule under Department of Homeland Security Management Directive 023–01 and Commandant Instruction M16475.lD, which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321–4370f), and have made a preliminary determination that this action is one of a category of actions which do not individually or cumulatively have a significant effect on the human environment. A preliminary environmental analysis checklist supporting this determination is available in the docket where indicated under the "Public Participation and Request for Comments" section of this preamble. This rule involves regulations which are editorial or procedural, such as those updating addresses or establishing application procedures; and regulations concerning manning, documentation, admeasurement, inspection, and equipping of vessels. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

List of Subjects

33 CFR Part 173

Marine safety, Reporting and recordkeeping requirements.

33 CFR Part 174

Intergovernmental relations, Marine safety, Reporting and recordkeeping requirements.

33 CFR Part 181

Labeling, Marine safety, Reporting and recordkeeping requirements.

33 CFR Part 187

Administrative practice and procedure, Marine safety, Reporting and recordkeeping requirements.

For the reasons discussed in the preamble, the Coast Guard proposes to amend 33 CFR parts 173, 174, 181, and 187 as follows:

PART 173—VESSEL NUMBERING AND CASUALTY AND ACCIDENT REPORTING

1. The authority citation for part 173 is revised to read as follows:

Authority: 31 U.S.C. 9701; 46 U.S.C. 2110, 6101, 12301, 12302; OMB Circular A–25; Department of Homeland Security Delegation No. 0170.1.

2. Revise § 173.1 to read as follows:

§ 173.1 Purpose; preemptive effect.

This part prescribes requirements for numbering vessels and for reporting casualties and accidents to implement sections 6101, 6102, 12301, and 12302 of Title 46, United States Code. The regulations in subparts A, B, and D of this part have preemptive effect over conflicting State or local regulation. The regulations in subpart C of this part have preemptive effect over State or local regulation within the same field, except to the extent that Congress requires the Coast Guard to allow State casualty reporting systems pursuant to 46 U.S.C. Chapter 131.

3. Revise § 173.3 to read as follows:

§ 173.3 Definitions.

As used in this part:

Airboat means a vessel that is typically flat-bottomed and propelled by an aircraft-type propeller powered by an engine.

Auxiliary sail means a vessel whose primary method of propulsion is sail but has a secondary means of mechanical propulsion.

Cabin motorboat means a type of vessel propelled by propulsion machinery that provides enclosed spaces inside the structure of the vessel.

Certificate of number means a certificate issued by a State that meets the requirements of 33 CFR 174.19, containing vessel and vessel owner registration information for a vessel that is registered and issued a number in that State.

Houseboat means a motorized vessel that is usually non-planing and designed primarily for multipurpose accommodation spaces with low freeboard and little or no foredeck or cockpit.

Hull identification number or *HIN* means a serial number that meets the requirements of 33 CFR part 181, subpart C;

Inboard, in the context of an engine, means an engine mounted inside the confines of a vessel which turns a drive shaft that runs through the bottom of the hull and is attached to a propeller or water jet at the other end.

Inflatable boat means a vessel that uses air-filled flexible fabric for buoyancy.

Issuing authority means a State listed in Appendix A of this part as having a numbering system approved by the Coast Guard, or the Coast Guard where a State numbering system has not been approved.

Open motorboat means a type of vessel equipped with propulsion machinery which has an open load carrying area not protected from the entry of water by means of a continuous deck.

Operate means use, navigate, or employ.

Operator means the person who is in control or in charge of a vessel while it is in use.

Outboard, in the context of an engine, means an engine with propeller or water jet integrally attached which is usually mounted at the stern of a vessel.

Owner means a person who claims lawful possession of a vessel by virtue of a legal title or an equitable interest therein, which entitles him to such possession and includes co-owners.

Paddlecraft means a vessel powered only by a craft's occupant(s) using a single or double bladed paddle as a lever without the aid of a fulcrum provided by oarlocks, thole pins, crutches, or similar arrangements.

Permitted event means an organized water event of limited duration which is conducted according to a prearranged schedule and approved by the Coast Guard or by a State that has jurisdiction over the particular body of water on which the event will take place.

Person means an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity and includes a trustee, receiver, assignee, or similar representative of any of them.

Personal watercraft means a vessel propelled by a water-jet pump or other machinery as its primary source of motive power which is designed to be operated by a person sitting, standing, or kneeling on the vessel, rather than the conventional manner of sitting or standing within the confines of the hull.

Pod drive means an engine mounted in front of the transom of a vessel and attached through the bottom of the hull to a steerable propulsion unit.

Pontoon boat means a vessel with a broad, flat deck that is affixed on top of closed cylinders which are used for buoyancy, the basic design of which is usually implemented with two rows of floats as a catamaran or with three rows of floats as a trimaran.

Reporting authority means a State listed in Appendix A of this part as having a numbering system approved by the Coast Guard, or the Coast Guard

where a numbering system has not been approved.

Rowboat means an open vessel manually propelled by oars.

Sail only means a vessel propelled only by sails.

State means a State of the United States, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the District of Columbia, the Commonwealth of the Northern Mariana Islands, and any other territory or possession of the United States.

State of principal operation means the State on whose waters a vessel is or will be operated most during a calendar year.

Sterndrive means an engine mounted in front of the transom of a vessel which is attached through the transom to a drive unit that is similar to the lower unit of an outboard. The engine turns a drive shaft that is attached to a propeller at the other end. A sterndrive is also known as an inboard-outdrive or an inboard-outboard.

Towed watersports means any watersports activity that takes place when towed or pulled behind a boat, including, but not limited to, waterskiing, wakeboarding, parasailing, and tubing.

Whitewater boating means any activity with a vessel on Class II and above rapid as determined by the six class International Scale of River Difficulty. This definition applies only to the sections of any river with such rapids and not the entire river.

§ 173.15 [Amended]

4. In § 173.15, remove the words "State in which the vessel is principally used" wherever they occur, and add, in their place, the words "State of principal operation."

§ 173.19 [Amended]

5. In § 173.19, remove the word "use" and add, in its place, the word "operate."

§ 173.21 [Amended]

6. In § 173.21(a) introductory text, remove the word "use" and add, in its place, the word "operate," and in paragraph (a)(1), remove the word "used" and add, in its place, the word "operated."

§ 173.23 [Amended]

7. In § 173.23, remove the word "using" and add, in its place, the word "operating."

§ 173.25 [Amended]

8. In § 173.25, remove the word "use" and add, in its place, the word "operate."

§ 173.33 [Amended]

9. In § 173.33(c), remove the word "used" and add, in its place, the word "operated."

§ 173.35 [Amended]

10. In § 173.35, remove the word "use" and add, in its place, the word "operate."

§ 173.51 [Amended]

11. In § 173.51(a) introductory text and (a)(1), remove the word "used" and add, in its place, the word "operated."

12. Revise § 173.57 to read as follows:

§ 173.57 Contents of report.

(a) Each report required by 33 CFR 173.55 must be in writing, dated upon completion, and signed by the person who prepared it.

(b) Until January 1, [FOURTH YEAR FOLLOWING THE YEAR OF THE EFFECTIVE DATE OF THE FINAL RULE], each report must contain, if available, at least the following information about the casualty or accident:

(1) Numbers and names of each vessel involved;

(2) Name and address of each owner of each vessel involved;

(3) Name of the nearest city or town, the county, the State, and the body of water;

(4) Time and date the casualty or accident occurred;

(5) Location on the water;

(6) Visibility, weather, and water conditions;

(7) Estimated air and water temperatures;

(8) Name, address, age, or date of birth, telephone number, vessel operating experience, and boating safety training of the operator making the report;

(9) Name and address of each operator of each vessel involved;

(10) Number of persons on board or towed on skis by each vessel;

(11) Name, address, and date of birth of each person injured or killed;

(12) Cause of each death;

(13) Weather forecasts available to, and weather reports used by, the operator before and during the use of the vessel;

(14) Name and address of each owner of property involved;

(15) Availability and use of personal flotation devices;

(16) Type and amount of each fire extinguisher used;

(17) Nature and extent of each injury;

(18) Description of all property damage and vessel damage with an estimate of the cost of all repairs;

(19) Description of each equipment failure that caused or contributed to the cause of the casualty;

(20) Description of the vessel casualty or accident;

(21) Type of vessel operation (cruising, drifting, fishing, hunting, skiing, racing, or other), and the type of accident (capsizing, sinking, fire, or explosion or other);

(22) Opinion of the person making the report as to the cause of the casualty, including whether or not alcohol or drugs, or both, was a cause or contributed to causing the casualty;

(23) Make, model, type (open, cabin, house, or other), beam width at widest point, length, depth from transom to keel, horsepower, propulsion (outboard, inboard, inboard outdrive, sail, or other), fuel (gas, diesel, or other), construction (wood, steel, aluminum, plastic, fiberglass, or other), and year built (model year), of the reporting operator's vessel;

(24) Name, address, and telephone number of each witness;

(25) Manufacturer's hull identification number, if any, of the reporting operator's vessel; and

(26) Name, address, and telephone number of the person submitting the report.

(c) Effective January 1, [THE FOURTH YEAR FOLLOWING THE YEAR OF THE EFFECTIVE DATE OF THE FINAL RULE], each report must contain, if available, at least the following information about the casualty or accident:

(1) Numbers and names of each vessel involved;

(2) Name and address of each owner of each vessel involved;

(3) Name of the nearest city or town, the county, the State, and the body of water;

(4) Time and date the incident occurred;

(5) Location on the water;

(6) Visibility, weather, and water conditions;

(7) Estimated air and water temperatures;

(8) Name, address, age or date of birth, telephone number, vessel operating experience, and boating safety training of the operator making the report;

(9) Name and address of each operator of each vessel involved;

(10) Number of persons on board (including people participating in towed watersports);

(11) Name, address, and date of birth of each person injured or killed;

(12) Cause of each death;

(13) Weather forecasts available to, and weather reports used by, the operator before and during the use of the vessel;

(14) Name, address, and telephone number of each owner of property damaged;

(15) Availability and use of personal flotation devices;

(16) Number and type of each fire extinguisher aboard the vessel;

(17) Nature and extent of each injury;

(18) Description of all property damage and vessel damage with an estimate of the cost of all repairs;

(19) Description of each equipment failure that caused or contributed to the cause of the incident;

(20) Description of the incident;

(21) Characteristics of the reporting owner's or operator's vessel, as follows:

(i) Make of vessel;

(ii) Model;

(iii) Model year;

(iv) Manufacturer's hull identification number, if any;

(v) Vessel type: Authorized terms are "open motorboat", "cabin motorboat", "air boat", "inflatable boat", "auxiliary sail", "sail only", "paddlecraft", "personal watercraft", "pontoon boat", "houseboat", "rowboat", or "other";

(vi) Overall length of vessel;

(vii) Horsepower;

(viii) Engine drive type: Authorized terms are "inboard", "outboard", "pod drive", "sterndrive", or "other";

(ix) Propulsion type: Authorized terms are "propeller", "sail", "water jet", "air thrust", "manual", or "other";

(x) Fuel: Authorized terms are "gas", "diesel", "electric", or "other";

(xi) Hull material: Authorized terms are "wood", "aluminum", "steel", "fiberglass", "plastic", "rubber/vinyl/canvas", or "other";

(22) Operation of vessel at time of incident: Authorized terms are "maintaining course and speed", "changing course" or "changing speed";

(23) Activity at time of incident: Authorized terms are "at anchor", "being towed", "commercial activity", "cruising", "docking/undocking", "drifting", "fishing", "fueling", "hunting", "launching", "making repairs", "racing", "rowing/paddling", "sailing", "scuba diving/snorkeling", "starting engine", "swimming", "tied to dock/moored", "towed watersports", "towing another vessel", "whitewater boating", or "other";

(24) Whether the incident took place during a permitted event (yes or no);

(25) Type of incident: Authorized terms are "capsizing", "carbon monoxide exposure", "collision with fixed object", "collision with floating object", "collision with vessel", "electrocution", "fall on/within a vessel", "fall overboard", "fire or explosion (fuel)", "fire or explosion (other)", "flooding/swamping", "grounding", "person leaves a vessel", "person ejected from vessel", "sinking", "towed watersports mishap", "struck by vessel", "struck by propeller or propulsion unit", "struck submerged object", or "other";

(26) Cause of incident, in the opinion of the person making the report, including whether or not alcohol or drugs, or both, was a cause or contributed to causing the incident;

(27) Name, address, and telephone number of each witness; and

(28) Name, address, and telephone number of the person submitting the report.

13. Revise § 173.59 to read as follows:

§ 173.59 Where to report.

The report required by 33 CFR 173.55 must be submitted to the reporting authority, listed in Appendix A of this part, where the casualty or accident occurred.

14. Revise § 173.71 to read as follows:

§ 173.71 Application for and issuance of certificate of number.

(a) The owner of a vessel to which 33 CFR 173.11 applies and for which a certificate of number is required may apply for that certificate to the issuing authority for the vessel's State of principal operation listed in Appendix A of this part. The application must be made in the manner specified by the issuing authority and must be accompanied by payment of any fee required by the issuing authority.

(b) Upon determination that the owner's application for a certificate of number complies with the requirements of paragraph (a) of this section, the issuing authority may issue a certificate of number.

(c) A duplicate certificate of number may be applied for and issued as provided by paragraphs (a) and (b) of this section, upon the owner's statement that the original certificate has been lost or destroyed.

§ 173.73 [Removed]

15. Remove § 173.73.

§ 173.77 [Amended]

16. In § 173.77(d), remove the word "used" and add, in its place, the word "operated".

Appendix A [Amended]

17. In Appendix A to Part 173, in paragraph (c), remove the word "use" and add, in its place, the word "operation".

PART 174—STATE NUMBERING AND CASUALTY REPORTING SYSTEMS

18. The authority citation for part 174 continues to read as follows:

Authority: 46 U.S.C. 6101 and 12302; Department of Homeland Security Delegation No. 0170.1(92).

19. Revise § 174.1 to read as follows:

§ 174.1 Applicability; preemptive effect.

This part establishes a standard numbering system for vessels and a uniform vessel casualty reporting system for vessels by prescribing requirements applicable to the States for approval of State numbering systems. The regulations in subparts A, B, and D of this part have preemptive effect over conflicting State or local regulation. The regulations in subpart C of this part have preemptive effect over State or local regulation within the same field, except to the extent that Congress requires the Coast Guard to allow State casualty reporting systems pursuant to 46 U.S.C. Chapter 131.

20. Revise § 174.3 to read as follows:

§ 174.3 Definitions.

As used in this part:

Airboat means a vessel that is typically flat-bottomed and propelled by an aircraft-type propeller and powered by an engine.

Auxiliary sail means a vessel whose primary method of propulsion is sail but has a secondary means of mechanical propulsion.

Cabin motorboat means a type of vessel propelled by propulsion machinery that provides enclosed spaces inside the structure of the vessel.

Certificate of number means a certificate issued by a State that meets the requirements of 33 CFR 174.19, containing vessel and vessel owner registration information for a vessel that is registered and issued a number in that State.

Charter fishing means a vessel carrying a passenger(s) for hire who is (are) engaged in recreational fishing.

Commercial fishing means a vessel that commercially engages in the catching, taking, or harvesting of fish which, either in whole or in part, is intended to enter commerce through sale, barter or trade.

Houseboat means a motorized vessel that is usually non-planing and designed primarily for multipurpose accommodation spaces with low freeboard and little or no foredeck or cockpit.

Hull identification number or *HIN* means a serial number that meets the requirements of 33 CFR part 181, subpart C.

Inboard, in the context of an engine, means an engine mounted inside the confines of a vessel which turns a drive shaft that runs through the bottom of the hull and is attached to a propeller or water jet at the other end.

Inflatable boat means a vessel that uses air-filled flexible fabric for buoyancy.

Open motorboat means a type of vessel equipped with propulsion machinery which has an open load carrying area not protected from the entry of water by means of a continuous deck.

Operator means the person who is in control or in charge of a vessel while it is in use.

Outboard, in the context of an engine, means an engine with propeller or water jet integrally attached, which is usually mounted at the stern of a vessel.

Owner means a person who claims lawful possession of a vessel by virtue of a legal title or an equitable interest therein, which entitles him to such possession and includes co-owners.

Paddlecraft means a vessel powered only by a craft's occupant(s) using a single or double bladed paddle as a lever without the aid of a fulcrum provided by oarlocks, thole pins, crutches or similar arrangements.

Person means an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity and includes a trustee, receiver, assignee, or similar representative of any of them.

Personal watercraft means a vessel propelled by a water-jet pump or other machinery as its primary source of motive power which is designed to be operated by a person sitting, standing, or kneeling on the vessel, rather than the conventional manner of sitting or standing within the confines of the hull.

Pod drive means an engine mounted in front of the transom of a vessel and attached through the bottom of the hull to a steerable propulsion unit.

Pontoon boat means a vessel with a broad, flat deck that is affixed on top of closed cylinders which are used for buoyancy, the basic design of which is usually implemented with two rows of floats as a catamaran or with three rows of floats as a trimaran.

Reporting authority means a State listed in 33 CFR part 173, Appendix A, as having a numbering system approved by the Coast Guard, or the Coast Guard where a numbering system has not been approved.

Rowboat means an open vessel manually propelled by oars.

Sail only means a vessel propelled only by sails.

State means a State of the United States, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the District of Columbia, the Commonwealth of the Northern Mariana Islands, and any other territory or possession of the United States.

State of principal operation means the State in whose waters a vessel is or will be operated most during a calendar year.

Sterndrive means an engine mounted in front of the transom of a vessel which is attached through the transom to a drive unit that is similar to the lower unit of an outboard. The engine turns a drive shaft that is attached to a propeller at the other end. A sterndrive is also known as an inboard-outdrive or an inboard-outboard.

21. Add new § 174.16 to read as follows:

§ 174.16 Verification of hull identification number.

(a) As used in this section, "action" means an action by an issuing authority listed in 33 CFR part 173, Appendix A, to issue, renew, or update the ownership information for a certificate of number under this part.

(b) Effective [DATE 3 YEARS FROM EFFECTIVE DATE OF FINAL RULE], before taking any action relating to a vessel imported or manufactured on or after November 1, 1972, the issuing authority must determine whether the vessel has a HIN meeting the requirements of 33 CFR part 181, subpart C.

(c) If, pursuant to paragraph (b) of this section, the issuing authority determines that the vessel does not have a HIN meeting the requirements of 33 CFR part 181, subpart C, then before taking any action the issuing authority must:

(1) Assign such a HIN to the vessel; and

(2) Require the owner to make the vessel available to a representative of the issuing authority's State so that the representative can permanently affix the HIN to the vessel in compliance with 33 CFR part 181, subpart C.

22. Revise § 174.17 to read as follows:

§ 174.17 Contents of application for certificate of number.

(a) An application for a certificate of number must contain the following information:

(1) Name of owner;

(2) Address of owner;

(3) Owner identifier, which must be the owner's tax identification number; date of birth together with driver's license number; or other unique number;

(4) [Reserved]

(5) State of principal operation;

(6) Number previously issued by an issuing authority;

(7) Application type: Authorized terms are "new number", "renewal of number", or "transfer of ownership";

(8) Primary operation: Authorized terms are "pleasure", "rent or lease", "dealer or manufacturer demonstration", "charter fishing", "commercial fishing", "commercial passenger carrying", or "other commercial operation";

(9) Make and model of vessel;

(10) Model year;

(11) Hull identification number, if any;

(12) Overall length of vessel;

(13) Vessel type: Authorized terms are "open motorboat", "cabin motorboat", "air boat", "inflatable boat", "auxiliary sail", "sail only", "paddlecraft", "personal watercraft", "pontoon boat", "houseboat", "rowboat", or "other";

(14) Hull material: Authorized terms are "wood", "aluminum", "steel", "fiberglass", "plastic", "rubber/vinyl/canvas", or "other";

(15) Propulsion type: Authorized terms are "propeller", "sail", "water jet", "air thrust", "manual", or "other";

(16) Engine drive type: Authorized terms are "inboard", "outboard", "pod drive", "sterndrive", or "other";

(17) Fuel: Authorized terms are "gas", "diesel", "electric", or "other"; and

(18) Signature of the owner.

(b)(1) An application made by a manufacturer or dealer for a number that is to be temporarily affixed to a vessel for demonstration or test purposes may omit the information under paragraphs (a)(9) through (a)(17) of this section.

(2) An application made by an owner of a vessel without propulsion machinery may omit the information under paragraphs (a)(16) and (a)(17) of this section.

(c) For an issuing authority listed in 33 CFR part 173, Appendix A on [EFFECTIVE DATE OF FINAL RULE], the requirements of paragraphs (a) and (b) of this section apply on [DATE 3 YEARS FROM EFFECTIVE DATE OF FINAL RULE]. Between [EFFECTIVE DATE OF FINAL RULE] and [DATE 3 YEARS FROM EFFECTIVE DATE OF FINAL RULE], the issuing authority may continue to accept applications containing the contents required by that reporting authority prior to [EFFECTIVE DATE OF FINAL RULE].

23. Revise § 174.19 to read as follows:

§ 174.19 Contents of a certificate of number.

(a) Except as allowed in paragraph (b) of this section, each certificate of number must contain the following information:

(1) Number issued to the vessel;

(2) Expiration date of the certificate;

(3) State of principal operation;

(4) Name of owner;

(5) Address of owner;

(6) Primary operation: Includes pleasure, rent or lease, dealer or

manufacturer demonstration, charter fishing, commercial fishing, commercial passenger carrying, or other commercial operation;

(7) Hull identification number, if any;

(8) Make and model of vessel;

(9) Model year;

(10) Overall length of vessel;

(11) Vessel type: Includes open motorboat, cabin motorboat, air boat, inflatable boat, auxiliary sail, sail only, paddlecraft, personal watercraft, pontoon boat, houseboat, rowboat, or "other";

(12) Hull material: Includes wood, aluminum, steel, fiberglass, plastic, rubber/vinyl/canvas, or "other";

(13) Propulsion type: Includes propeller, sail, water jet, air thrust, manual, or "other";

(14) Engine drive type: Includes inboard, outboard, pod drive, sterndrive, or "other"; and

(15) Fuel: Includes gas, diesel, electric, or "other."

(b)(1) A certificate of number issued to a manufacturer or dealer for use on a vessel for test or demonstration purposes may omit the information under paragraphs (a)(7) through (a)(15) of this section if the word "manufacturer" or "dealer" is plainly marked on the certificate.

(2) A certificate of number issued for a vessel without propulsion machinery may omit paragraphs (a)(14) and (a)(15) of this section if the words "manual vessel" are plainly marked on the certificate.

(3) An issuing authority may print on the certificate of number a quotation of State boating regulations or other boating-related information, such as safety reminders, or registration or law enforcement contact information.

(c) For an issuing authority listed in Appendix A of this part on [EFFECTIVE DATE OF FINAL RULE], the requirements of paragraphs (a) and (b) of this section apply on [DATE 3 YEARS FROM EFFECTIVE DATE OF FINAL RULE]. Between [EFFECTIVE DATE OF FINAL RULE] and [DATE 3 YEARS FROM EFFECTIVE DATE OF FINAL RULE], the issuing authority may continue to issue certificates of number containing the contents in effect on [EFFECTIVE DATE OF FINAL RULE].

24. Revise § 174.21 to read as follows:

§ 174.21 Temporary certificates.

(a) An issuing authority may issue a temporary certificate of number, valid for no more than 60 days from its date of issuance.

(b) Each temporary certificate must contain the following information:

(1) Vessel's hull identification number, if any;

(2) Make of vessel;

(3) Length of vessel;

(4) Type of propulsion;

(5) State in which vessel is principally operated;

(6) Name of owner;

(7) Address of owner, including ZIP code;

(8) Signature of owner;

(9) Date of issuance; and

(10) Notice to the owner that the temporary certificate is valid for the time it specifies, not to exceed 60 days from the date of issuance.

(c) For an issuing authority listed in 33 CFR part 173, Appendix A on [EFFECTIVE DATE OF FINAL RULE], the requirements of paragraph (b) of this section apply on [DATE 3 YEARS FROM EFFECTIVE DATE OF FINAL RULE]. Between [EFFECTIVE DATE OF FINAL RULE] and [DATE 3 YEARS FROM EFFECTIVE DATE OF FINAL RULE], the issuing authority may continue to issue temporary certificates containing the contents in effect on [EFFECTIVE DATE OF FINAL RULE].

25. Revise § 174.121 to read as follows:

§ 174.121 Forwarding of casualty or accident reports.

Within 30 days of the receipt of a casualty or accident report, the reporting authority receiving the report must forward a paper or electronic copy of that report to the Commandant (CG–5422), U.S. Coast Guard, 2100 Second Street, SW., Stop 7581, Washington, DC 20593–7581.

26. Revise § 174.125 to read as follows:

§ 174.125 Coast Guard address.

The report required by 33 CFR 174.123 must be sent to the Commandant (CG–5422), U.S. Coast Guard, 2100 Second Street, SW., Stop 7581, Washington, DC 20593–7581.

PART 181—MANUFACTURER REQUIREMENTS

27. The authority citation for part 181 is revised to read as follows:

Authority: 46 U.S.C. 4302; Department of Homeland Security Delegation No. 0170.1 (92).

28. Revise § 181.1 to read as follows:

§ 181.1 Purpose and applicability; preemptive effect.

This part prescribes requirements for the certification of boats and associated equipment and identification of boats to which 46 U.S.C. Chapter 43 applies. The regulations in this part have the preemptive effect described in 46 U.S.C. 4306.

29. In § 181.3, revise the definition for "Manufacturer" and add, in alphabetical order, a definition for "State" to read as follows:

§ 181.3 Definitions.

* * * * *

Manufacturer means any person engaged in:

(1) The manufacture, construction, or assembly of boats or associated equipment; or

(2) The importation into the United States of boats, associated equipment, or components thereof.

* * * * *

State means a State of the United States, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the District of Columbia, the Commonwealth of the Northern Mariana Islands, and any other territory or possession of the United States.

30. Revise § 181.23 to read as follows:

§ 181.23 Hull identification numbers required.

(a) A manufacturer, as defined in § 181.3 of this part, must identify each boat produced or imported with two hull identification numbers (HIN) that meet the requirements of this subpart:

(1) A primary HIN affixed in accordance with §§ 181.29(a) and (c) of this subpart; and

(2) A duplicate HIN affixed in accordance with §§ 181.29(b) and (c) of this subpart.

(b) A person who manufactures or imports a boat for his or her own use and not for sale must obtain the required hull identification number in accordance with the requirements of the issuing authority listed in 33 CFR part 173, Appendix A for the boat's State of principal operation, as defined in 33 CFR 173.3, and make the boat available to a representative of the issuing authority who will permanently affix the HINs.

(c) No person may assign the same HIN to more than one boat.

31. Revise § 181.31 to read as follows:

§ 181.31 Manufacturer identification code assignment.

(a) Each person required by 33 CFR 181.23(a) to affix hull identification numbers must request a manufacturer identification code in writing from the Commandant (CG–54223), 2100 Second Street, SW., Stop 7581, Washington, DC 20593–7581. The request must indicate the manufacturer's name and U.S. address along with the general types and lengths of boats that will be manufactured.

(b) For boats manufactured outside of the jurisdiction of the United States, a U.S. importer must obtain a

manufacturer identification code as required by paragraph (a) of this section. The request must indicate the importer's name and U.S. address along with a list of the manufacturers, their addresses, and the general types and sizes of boats that will be imported. If a nation has a hull identification number system which has been accepted by the Coast Guard for the purpose of importing boats, it may be used by the importer instead of the one specified within this subpart. To request a list of those nations having such a numbering system, write to the Commandant (CG–54223), 2100 Second Street, SW., Stop 7581, Washington, DC 20593–7581.

PART 187—VESSEL IDENTIFICATION SYSTEM

32. The authority citation for part 187 is revised to read as follows:

Authority: 46 U.S.C. 2103, 12501; Department of Homeland Security Delegation No. 0170.1 (92).

33. Revise § 187.11 to read as follows:

§ 187.11 What are the procedures to participate in VIS?

(a) A State wanting to participate in VIS must inform the Commandant, in writing, describing its willingness and ability to comply with each requirement of 33 CFR 187.201. If the Commandant is satisfied that the State will comply fully with 33 CFR 187.201, the State will be allowed to participate in VIS and will be listed in Appendix A to this part, for so long as the Commandant determines that the State complies fully with 33 CFR 187.201.

(b) A State wanting to participate in VIS, but unable to comply with one or more requirements of 33 CFR 187.201, may participate in VIS under one or more waivers, for good cause shown. For purposes of this section, "good cause" includes the existence of State law prohibiting full compliance. A State wanting to participate in VIS under one or more waivers:

(1) So informs the Commandant, in writing;

(2) Describes the requirement or requirements for which waiver is sought, and the good cause for noncompliance; and

(3) Describes the steps the State intends to take to remove the good cause and the anticipated time needed to do so.

(c) The Commandant may allow a State to participate in VIS under one or more waivers, pursuant to a memorandum of agreement between the Coast Guard and the State.

(1) The memorandum of agreement recites the information provided by the State under paragraph (b) of this section, and is valid for not more than three years, during which time the State will be deemed to participate in VIS and be listed in Appendix A to this part.

(2) The State may withdraw from the memorandum of agreement and participation in VIS upon written notice to the Commandant. The Commandant may terminate the memorandum of agreement and the State's participation in VIS for noncompliance with the terms of the memorandum.

(3) Participation in VIS under one or more waivers beyond the term of the initial memorandum of agreement requires a new memorandum.

(4) If the good cause for waivers is eliminated within the term of the memorandum of agreement, the State may so inform the Commandant in writing. The Commandant may then consider the State to participate in VIS under paragraph (a) of this section.

34. Revise § 187.103 to read as follows:

§ 187.103 What information must be collected to identify a vessel?

A participating State must collect the following information on a vessel it has numbered or titled and make it available to VIS:

(a) Manufacturer's hull identification number, if any;

(b) Official number, if any, assigned by the Coast Guard or its predecessor;

(c) Number on certificate of number assigned by the issuing authority of the State;

(d) Expiration date of certificate of number;

(e) Number previously issued by an issuing authority;

(f) Make and model of vessel;

(g) Model year: Includes model year, manufacture year, or year built;

(h) Overall length;

(i) Vessel type: Authorized terms are "open motorboat", "cabin motorboat", "air boat", "inflatable boat", "auxiliary sail", "sail only", "paddlecraft", "personal watercraft", "pontoon boat", "houseboat", "rowboat", or "other";

(j) Hull material: Authorized terms are "wood", "aluminum", "steel", "fiberglass", "plastic", "rubber/vinyl/canvas", or "other";

(k) Propulsion type: Authorized terms are "propeller", "sail", "water jet", "air thrust", "manual", or "other";

(l) Engine drive type: Authorized terms are "inboard", "outboard", "pod drive", "sterndrive", or "other";

(m) Fuel: Authorized terms are "gas", "diesel", "electric", or "other"; and

(n) Primary use: Authorized terms are "pleasure", "rent or lease", "dealer or manufacturer demonstration", "charter fishing", "commercial fishing", "commercial passenger carrying", or "other commercial operation".

Dated: May 3, 2010.

Kevin S. Cook,

Rear Admiral, U.S. Coast Guard, Director of Prevention Policy.

[FR Doc. 2010–10723 Filed 5–6–10; 8:45 am]

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FEDERAL MARITIME COMMISSION

46 CFR Parts 520 and 532

[Docket No. 10–03]

RIN 3072–AC38

NVOCC Negotiated Rate Arrangements

AGENCY: Federal Maritime Commission.

ACTION: Notice of Proposed Rulemaking.

SUMMARY: The Federal Maritime Commission proposes a new exemption for non-vessel-operating common carriers agreeing to negotiated rate arrangements from certain provisions and requirements of the Shipping Act of 1984 and certain provisions and requirements of the Commission's regulations.

DATES: Written comments are due by June 4, 2010. If an interested party requests an opportunity to present oral comments to the Commission concerning the proposed regulatory changes by May 14, 2010, the FMC will hold a public meeting on May 24, 2010.

ADDRESSES: Submit all comments concerning this proposed rule to: Karen V. Gregory, Secretary, Federal Maritime Commission, 800 North Capitol Street, NW., Room 1046, Washington, DC 20573–0001. *secretary@fmc.gov.*

FOR FURTHER INFORMATION CONTACT: Rebecca A. Fenneman, Deputy General Counsel, Federal Maritime Commission, 800 North Capitol Street, NW., Room 1018, Washington, DC 20573–0001. (202) 523–5740. *generalcounsel@fmc.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

Submit Comments: Submit an original and fifteen copies of written comments in paper form, and submit a copy in electronic form (Microsoft Word 2007 or 2003) by e-mail to *secretary@fmc.gov* on or before June 4, 2010. Include in the subject line: "Docket No. 10–03 Comments on NVOCC Negotiated Rate Arrangements". Interested parties may also request an opportunity to present oral comments to the Commission at a public meeting to take place on May 24,

2010, at the Commission's Main Hearing Room, Room 100, 800 North Capitol Street, NW., Washington, DC 20573. Requests to present oral comments must be received by the Commission on or before May 14, 2010. The Commission will announce the time of the meeting, the order of presentation, and time allotment via its Web site and service on interested presenters.

On July 31, 2008, the National Customs Brokers and Forwarders Association of America, Inc. (NCBFAA) filed a petition with the Federal Maritime Commission (FMC or Commission), requesting the Commission exercise its authority under 46 U.S.C. 40103 to issue an exemption from provisions of the Shipping Act of 1984 (the Act) requiring non-vessel-operating common carriers (NVOCCs) to publish and/or adhere to rate tariffs for ocean transportation in those instances where they have individually negotiated rates with their shipping customers and memorialized those rates in writing. Petition No. P1–08, *Petition of the National Customs Brokers and Freight Forwarders Association of America, Inc. for Exemption from Mandatory Rate Tariff Publication* at 10 ("Petition"). Notice of the Petition was published on August 11, 2008 and comments on it were due by September 26, 2008. 73 FR 46625–02 (August 11, 2008).

On December 24, 2009, NCBFAA filed a motion for leave to supplement the record and submit a verified statement on behalf of DJR Logistics, Inc. By order served January 5, 2010, the Commission granted NCBFAA's motion, accepted the verified statement, and reopened the record for the limited purpose of receiving updated tariff cost information, and any replies thereto, from previous commenting parties of record by January 21, 2010.

A. The Petition

NCBFAA included as an attachment to its Petition a "Statement of Common Principles Concerning a Section 16 Exemption for NVOCCs," issued in 2004 and agreed to by the National Industrial Transportation League (NITL), NCBFAA, and the Transportation Intermediaries Association (TIA). NCBFAA also attached to the Petition supporting verified statements on behalf of eight ocean transportation intermediaries (OTIs) (Econocaribe Consolidators, Inc.; Kuehne + Nagel, Agent of Blue Anchor Line, Division of Transpac Container System, Ltd.; John S. Connor, Inc.; Panalpina, Inc.; American International Cargo Service, Inc.; Barthco Transportation Services, Inc.; DHL Global Forwarding; and C.H. Powell Company).

NCBFAA's proposal incorporated the following principles: the exemption is voluntary; the exemption would relate only to rates tariffs, not to rules tariffs; disputes relating to exempt contracts would be settled only under contract law; NVOCC Service Arrangements (NSAs), to the extent used, would continue to be filed with the Commission and NSA essential terms will continue to be published; exempt contracts would be memorialized in writing; the Commission would have access to documentation relating to exempt contracts; the exemption would not be construed to extend antitrust immunity to NVOCCs; and only NVOCCs that are licensed or registered ocean transportation intermediaries would be eligible to use the exemption.

B. Comments in Response to the Petition

Comments in response to the Petition were filed by members of Congress; two Federal government agencies; OTIs; associations; consultants; tariff publishers; and vessel-operating common carriers (VOCCs). Comments from members of Congress were received from Senator Bernard Sanders (Vermont); Representative Peter Welch (at-Large Vermont); and Representative Jerry Weller (11th District, Illinois). Comments were received from the following OTIs: A Customs Brokerage, Inc. (ABC); All Freight Transportation, Inc.; Alpha Sun International, Inc.; American International Forwarding; A.N. Deringer, Inc.; Balguerie; Camelot Company; Cargo-Link International, Inc.; CJ International, Inc.; CV International, Inc.; D.J. Powers Company, Inc.; DJR Logistics, Inc.; DJS International Services, Inc.; DT Gruelle Company; Diplomat Global Logistics; EMO Trans, Inc.; FedEx Trade Networks Transport & Brokerage; Fracht FWO; Global Fairways, Inc.; Global Link Logistics; Independent Brokerage, LLC; JAS Forwarding Worldwide; Logistics Worldwide USA, Inc.; Mid-America Overseas, Inc./Hanseatic Container Line Ltd.; Multimodal International Shipping; NACA Logistics (USA); New Direx; New England Groupage; Norman G. Jensen, Inc.; North American Logistics, Inc.; O.T.S. Astracon LLC; ProTrans International; RIM Logistics; R.S. Express, Inc.; Schenker, Inc.; SeaSchott; Serra International; Shipco Transport, Inc.; Superior Brokerage Services, Inc.; Trans-Border Global Freight Systems, Inc.; and USA Shipping, LLC.

The following associations filed comments in response to the Petition: Household Goods Forwarders Association of America, Inc.; National Industrial Transportation League (NITL); New York/New Jersey Foreign Freight Forwarders & Brokers Association, Inc.; Transportation Intermediaries Association; WorldWide Alliance; Florida Shipowners' Group, Inc. and World Shipping Council. Comments were received from the U.S. Department of Transportation (DOT) and the U.S. Department of Justice (DOJ).[1] Two consultants filed comments: ABS Consulting and Stan Levy Consulting, LLC (Levy). Comments were also filed by two tariff publishers: Distribution Publications, Inc. (DPI), and Global Maritime Transportation Services, Inc. (GMTS).

Supplemental comments were received from the following OTIs: Balguerie; DHL Global Forwarding; Global Fairways International Transportation & Logistics; Kuehne + Nagel, Inc.; North American Logistics, Inc.; O.T.S. Astracon LLC; Panalpina, Inc.; RIM Logistics, Ltd.; and Trans-Border Global Freight Systems, Inc. Supplemental comments were also received from NITL, Levy, and DPI.

II. Summary of the Comments

A. Initial Comments in Support of the Petition

Two members of Congress who filed comments in response to the Petition support granting the Petition on the grounds that tariff publication is expensive, adds little value to the shipping public, and is out of step with the modern ocean transportation environment (Welch at 1; Weller at 1). Senator Sanders noted that tariff publishing requirements have not been updated for a number of years and cost freight forwarders time and resources (Sanders at 1). The Department of Transportation states that it has supported exemption of NVOCCs from tariff filing since such relief was first sought (DOT at 2–3); the Commission's exemption for NSAs do not go far enough and impose unnecessary burdens and costs (*Id.* at 5–6); the 1998 Ocean Shipping Reform Act (OSRA) had made the requirements for exemption more flexible; and that other agencies have used their exemption authority to relieve regulatory burdens (*Id.* at 7–8). The Department of Justice also states that it has long supported an exemption for NVOCCs from all tariff publication requirements in order to produce the greatest competitive benefits. (DOJ at 1).

OTIs state that complying with tariff publication requirements is expensive, with estimates of annual expenditures

[1] The Department of Justice moved to file comments on February 5, 2010 and the Commission determined to accept these late-filed comments on February 17, 2010.

for compliance ranging from approximately $450 plus additional charges per rate item filed (Independent Brokerage, LLC at 2), to $200,000 (Global Link Logistics at 2; RIM at 2). They also state that NVOCCs' customers do not request tariff information and do not rely on tariffs, as rates are negotiated individually (American International Forwarding at 2; DT Gruelle Company at 1). In addition, they maintain that there are generally no rate disputes with shippers (Camelot Company at 2; Diplomat Global Logistics at 2). OTIs state that NSAs have not provided adequate relief from tariff publication requirements, and, as NSAs are required to be filed with the FMC and their essential terms published in a tariff, they do not provide cost savings. In addition, OTIs state that shippers balk at the contractual commitments required by NSAs (American International Forwarding at 2; DJR Logistics, Inc. at 2).

A number of OTIs state that since 2001, they have added costs associated with security requirements such as Customs-Trade Partnership Against Terrorism (C–TPAT) certification and the 24-hour advance manifest reporting requirement; and that, as small businesses, they need "regulatory offsets" so that their limited resources can be invested in programs that benefit the shipping public and contribute to the nation's security (New Direx, Inc. at 2–3; Superior Brokerage Services, Inc. at 2–3). Finally, several OTIs take the position that the proposed exemption should include charges as well as rates (Schenker, Inc. at 4–6; Shipco at 3–4), and Schenker, Inc. argues that rules should be exempt as well as rates and charges (Schenker, Inc. at 6).

The Household Goods Forwarders Association of America, Inc. (HGFAA) states that the publication of NVOCC rates for household goods movements is particularly burdensome, because these rates are door-to-door rates from inland point to inland point and are determined on an individual basis for each shipment through negotiations between competing NVOCCs and a shipper (HGFAA at 2). HGFAA states that tariff publication is of no benefit to household goods shippers, as published rates are limited in duration and geographic application and shippers of household goods do not use NVOCC tariffs to compare rates of various NVOCCs (*Id.* at 2–3).

NITL states that tariffs are rarely reviewed or consulted by shippers to determine ocean transportation pricing, and that they function more as a costly regulatory afterthought (NITL at 1). NITL argues that the proposed exemption meets statutory exemption standards and is likely to promote competition by reducing regulatory costs for NVOCCs, increasing their potential to offer competitive ocean rates to shippers (*Id.* at 5). With regard to detriment to commerce, NITL argues that the exemption would not be detrimental to commerce as it would allow NVOCCs to respond more efficiently to changing market conditions; establish a regime for NVOCC pricing that is consistent with regulation of intermediaries in other U.S.-based transportation industries; and would promote the growth of U.S. exports by placing a greater reliance on the marketplace (*Id.* at 6–7).

The New York/New Jersey Foreign Freight Forwarders & Brokers Association, Inc. (NYNJFFF&BA) argues that the tariff publication requirement inhibits the beneficial effects of competition for shippers (NYNJFFF&BA at 3); that the tariff publication requirement is costly and unnecessary in the contract carriage system that exists (*Id.* at 4); and that NSAs are not a viable option for most NVOCC movements (*Id.*).

The Transportation Intermediaries Association (TIA) states that FMC regulations require NVOCCs to keep complete accounting records for every shipment, and tariff publication requirements duplicate that requirement (TIA at 6). TIA states that intermediaries often act as both forwarder and NVOCC on different segments of a movement, and the way that these arrangements are expressed in tariff language can cause confusion (*Id.* at 8–9). The WorldWide Alliance (WWA) states that tariff publishing does not exist in any trade lanes other than those involving the U.S., and this puts U.S. traffic at a disadvantage as NVOCCs cannot respond as quickly to rate and charge fluctuations as they can in other non-U.S. trades (WWA at 2). ABS Consulting (ABS) states that NVOCC rate tariffs have become obsolete and no longer serve their original purpose (ABS at 1). In addition, ABS states that the current tariff publication process adds unnecessary costs to NVOCCs, and thus increases shipping rates (*Id.* at 2).

B. Initial Comments Opposing the Petition

Levy, DPI, and GMTS oppose granting the relief sought by the Petition. Levy argues that the Petition does not substantiate with facts that the requested exemption would not result in substantial reduction in competition or be detrimental to commerce, as based on Levy's assertion that NCBFAA has offered no new facts or information since its previous petition seeking the same relief was filed in 2003 (Levy at 4). Levy states that tariffs may not be used on a daily basis by shippers, but they provide a framework governing shipments so that when there is a cost or service issue, there is a legal tariff binding on all parties (*Id.* at 5). Levy states that if the exemption is granted, NVOCC shippers would lose the ability to use the FMC as a forum for complaints, contrary to the intent of the Act (*Id.* at 6). Finally, Levy argues that it is more appropriate for Congress to revise the Act and that the Petition should be denied, but that the FMC should initiate a proceeding to review and reform tariff regulations for both NVOCCs and VOCCs, to make tariff compliance less burdensome, tariffs more accessible, and tariff information more useful (*Id.* at 5, 7).

Tariff publishers DPI and GMTS state that tariffs published on their Web site are frequently used to verify rates in order to settle disputes (DPI at 13; GMTS at 7). FMC access to tariffs, the tariff publishers argue, is essential for the agency to monitor NVOCC activities and protect the public from violations of Section 10 of the Shipping Act (DPI at 13; GMTS at 10; DPI at 14), and the exemption would shift the cost and burden of enforcement away from the industry to the FMC and the public (GMTS at 10). DPI argues that granting the Petition would cause detriment to commerce because elimination of the 30-day notice requirement for tariff rates would produce rate quotations that would be valid for short periods of time. GMTS urges the Commission to clarify its regulations so that carriers reduce the number of published tariff items to those rates that actually move the cargo (*Id.* at 9).

Florida Shipowners' Group Inc. (FSG) (on behalf of Bernuth Lines, Ltd.; CMA CGM SA; Crowley Caribbean Services, LLC; Seaboard Marine, Ltd.; Sea Freight Line, Ltd.; and Tropical Shipping USA, LLC) states that NVOCCs compete with VOCCs in reselling VOCC transportation services to beneficial cargo owners, and eliminating tariff publication requirements for NVOCCs while leaving them in place for VOCCs will affect the competitive balance between them (FSG at 2). With regard to tariff costs, FSG states that the costs borne by VOCCs to develop and maintain vessels, equipment, and infrastructure needed to move international trade, dwarfs the costs borne by NVOCCs to comply with tariff requirements (*Id.* at 3). FSG states that Congress chose to retain the tariff publication requirement on both NVOCCs and VOCCs, and the FMC

should not remove that requirement from one class of competitors (*Id.*).

C. Other Comments

The World Shipping Council (WSC), a trade association of over 25 international liner shipping ocean carriers, takes no position on the Petition but offers corrections to inaccurate statements in the Petition. WSC states that neither vessel capacity nor container availability is connected with tariff publication (WSC at 2). WSC argues that claims of short-notice VOCC rate changes are inaccurate, as most NVOCCs structure their dealings with VOCCs through service contracts so that any rate changes would be mutually agreed (*Id.*). WSC states that the generalization that NVOCCs have greater numbers of customers than VOCCs is misleading, as some VOCCs deal with thousands of beneficial cargo owners and NVOCC customers, and this should be taken into consideration in connection with relative tariff filing burdens (*Id.* at 2–3).

D. Supplemental Comments Supporting the Petition

NCBFAA submitted a verified supporting statement from DJR Logistics (DJR), to supplement the record. DJR states that virtually every rate change by ocean carriers requires it to make multiple changes in its tariff rates, at a cost of between $3.25 and $13 per change (DJR at 2). DJR estimates its annual tariff publishing bill will be between $25,000 and $30,000 (*Id.*). DJR states that none of its customers review its tariffs. Instead, DJR memorializes rate changes via e-mails or other written communications (*Id.* at 3).

The OTIs submitting supplemental comments generally state that they have increased their tariff filings due to changes in VOCC rates and surcharges. Their average annual tariff publication costs are estimated to be from $2,000 (O.T.S. Astracon at 2), to $240,000 (DHL Global Forwarding at 2, based on stated average monthly costs of $20,000). Some of the OTIs state that a written quotation is the accepted practice in rate negotiation, and therefore there is always written communication that can be used by the FMC (*See, e.g.,* Kuehne + Nagel at 2; Panalpina at 1). Kuehne + Nagel and O.T.S. Astracon state that NSAs have not provided the relief needed from the burden and expense of tariff publication (Kuehne + Nagel at 1; O.T.S. Astracon at 2).

NITL states that the primary purpose of tariff publication, to prevent discriminatory pricing among shippers, is no longer a protection that is required or desired by shippers (NITL at 1). NITL states that the great majority of international ocean shipments move under service contracts, and therefore, tariffs are rarely reviewed by shippers to determine pricing (*Id.* at 1–2). NITL states that there are substantial costs associated with maintaining tariffs and these costs must either be passed on to shippers or absorbed by the NVOCC (*Id.* at 2). NITL argues that the proposed exemption would allow for a regulatory system that is more closely aligned with real time business practices (*Id.*).

E. Supplemental Comments Opposing the Petition

Levy states that when Congress decided to keep tariffs in 1984, it was mindful that it was continuing to impose a regulatory cost on carriers (Levy at 2). DPI also states that it publishes and maintains FMC tariffs for 1,019 NVOCCs, and in 2009, annual tariff costs for its NVOCC clients ranged from $400 to $75,000 (DPI at 4).

Levy states that tariffs are required to assist shippers and enable the FMC to fulfill its statutory duties (*Id.* at 3). DPI states that shippers can rely on tariff rates to be accurate, complete and in effect for 30 days; in the event of a dispute, the tariff can be easily accessed and reviewed (DPI at 5). DPI states that tariffs maintained at its Web site have been used thousands of times to verify rates in order to settle disputes (*Id.*). DPI states that tariffs help protect the public from violations by carriers of Section 10 of the Shipping Act, and enable the Commission to assist in resolving disputes (*Id.*). DPI argues that granting an exemption will produce an increase in disputes between shippers and NVOCCs over applicable rates and charges (*Id.* at 6). Levy also argues that exempting carriers from tariff compliance could be detrimental to commerce because there would be higher legal costs associated with settling disputes in court instead of at the FMC (*Id.*). Levy states that the issues of overly burdensome regulations, access to tariffs and their usefulness should not be ignored, and the FMC should consider reforming its tariff regulations so that it can perform its duty and maintain the regulatory framework envisioned by Congress, rather than exempting NVOCCs from the Act's requirements (*Id*). Levy strongly supports having the FMC initiate a proceeding to review and reform tariff regulations for both NVOCCs and VOCCs, to make tariff compliance less burdensome, tariffs more accessible and tariff information more useful (*Id.*).

III. Commission Action

After consideration of the Petition and all comments at a meeting on February 18, 2010, the Commission determined to initiate a rulemaking to relieve licensed NVOCCs from the costs and burdens of tariff rate publication.[2] The Commission specifically found that it was within its statutory authority and discretion under Section 16 of the Shipping Act to grant such an exemption with certain conditions, after having considered all the comments filed in support and in opposition to the Petition, as doing so would not result in substantial reduction in competition or be detrimental to commerce, consistent with the Act. *See* 46 U.S.C. 40103(a). Section 16 of the Act, as recodified, reads:

40103. Administrative exemptions:

(a) In General.—The Federal Maritime Commission, on application or on its own motion, may by order or regulation exempt for the future any * * * specified activity of [persons subject to this part] from any requirement of this part if the Commission finds that the exemption will not result in substantial reduction in competition or be detrimental to commerce. The Commission may attach conditions to an exemption and may, by order, revoke an exemption.

(b) Opportunity for Hearing.—An order or regulation of exemption may be issued only if the Commission has provided an opportunity for a hearing to interested persons and departments and agencies of the United States Government.

The Commission determined to issue this notice of proposed rulemaking, providing the licensed NVOCCs relief from tariff rate publication requirements and imposing several conditions, including the following: NVOCCs would continue to publish standard rules tariffs containing contractual terms and conditions governing shipments, and would be required to provide these rules free of charge; rates charged by NVOCCs must be agreed to and memorialized in writing by the date cargo is received for shipment by the common carrier; and NVOCCs must retain documentation of the agreed rate and terms for each shipment for a period of five years, and must make this documentation available promptly to the Commission on request pursuant to the Commission's regulations at 46 CFR 515.31(g).

IV. Discussion

As described above, the Commission voted at its meeting of February 18, 2010, exercising its discretion under Section 16 of the Act, codified at 46 U.S.C. 40103, to exempt licensed NVOCCs by regulation from these

[2] Commissioner Joseph E. Brennan dissented.

requirements of the Act: The requirement in Section 8(a), codified at 46 U.S.C. 40501(a)–(c) that each common carrier keep open to public inspection in an automated tariff system tariffs showing all its rates; Section 8(b), codified at 46 U.S.C. 40501(d) (time volume rates); Section 8(d), codified at 46 U.S.C. 40501(e) (tariff rate increase may not be effective on less than 30 days' notice but decrease effective immediately); Section 8(e), codified at 46 U.S.C. 40503 (carrier application to grant refunds); and Section 10(b)(2)(A)'s requirement of adhering to the published tariff rate, codified at 46 U.S.C. 41104(2)(A). The Commission also determined to seek public comment on whether the regulation should also extend the exemption to the prohibitions of Section 10(b)(4), codified at 46 U.S.C. 41104(4) (prohibiting common carriers from unfair or unjustly discriminatory practices in services pursuant to a tariff), and Section 10(b)(8), codified at 46 U.S.C. 41104(8) (prohibiting common carriers from undue or unreasonable preference or advantage or undue or unreasonable prejudice or disadvantage for tariff service). The Commission voted to make this exemption subject to several conditions, as described below. The Commission now publishes a proposed regulation and seeks comment from the public on the proposal.

The regulation, as proposed, would exempt licensed NVOCCs from certain provisions of the Act, specified as follows. The Petition also requests that the exemption be applicable for NVOCCs unlicensed but registered pursuant to 46 CFR 515.21(a)(3). The Commission will consider comments on whether the exemption should be extended to such NVOCCs. The proposed regulation would recognize NVOCC negotiated rate arrangements (NRAs) and proposes defining that instrument as "a written and binding arrangement between a shipper and an eligible NVOCC to provide specific transportation service for a stated cargo quantity, from origin to destination, on and after the receipt of the cargo by the carrier or its agent (or the originating carrier in the case of through transportation)."

For the exemption rule to apply to an NVOCC, the NVOCC must meet the following conditions:

- Notice that the NVOCC is invoking the exemption and opting out of rate publication must be published in a prominent place in a rules tariff;
- Public access to the rules tariff must be free of charge or the rules tariff must be provided with each of the NVOCC's proposed NRAs or rate quotes;
- NRAs must:
  - Be agreed to by both parties;
  - Be memorialized in writing;
  - Include the applicable rate for each shipment;
  - Be agreed and memorialized on or before the date on which the cargo is received by the common carrier or its agent (including originating carrier in the case of through transportation rates);
  - Include prominent notice of the existence and location of the NVOCC's rules tariff; and
- NRAs and associated records must be retained for five years and are subject to the records availability requirements of the Commission's regulations at 46 CFR 515.31(g).

When these conditions have been met, the regulation as proposed would exempt the NVOCC from the following requirements of the Act and the Commission's related regulations:

1. The requirement in Section 8(a)(1)(codified at 46 U.S.C. 40501(a)), (requirement that a tariff containing the applicable rate be published in an automated tariff system);
2. Section 8(b) (codified at 46 U.S.C. 40501(d)) (a rate under which a tariff may vary with the volume of cargo over a specified period of time);
3. Section 8(d), (codified at 46 U.S.C. 40501(e)) (tariff rate increase may not be effective on less than 30 days' notice but may decrease effective on publication);
4. Section 8(e), (codified at 46 U.S.C. 40503) (common carrier may apply for Commission authority to grant refunds); and from
5. Section 10(b)(2)(a)'s requirement to adhere to a published tariff rate (codified at 46 U.S.C. 41104(2)(A)).

Other than the specific provisions of the Act and the Commission's related regulations referenced above, eligible NVOCCs will be subject to the requirements of the Act and all applicable antitrust laws under the proposed regulation.

The Commission seeks comment on whether the regulation should additionally specifically exempt eligible NVOCCs from the prohibitions of Section 10(b)(4), codified at 46 U.S.C. 41104(4) (prohibiting common carriers from unfair or unjustly discriminatory practices in service pursuant to a tariff), and Section 10(b)(8), codified at 46 U.S.C. 41104(8) (prohibiting common carriers from undue or unreasonable preference or advantage or undue or unreasonable prejudice or disadvantage for tariff service).

The Commission also requests comment on additional terms to be required in the NRA documentation. In addition, the Commission requests comments on which elements should be required to qualify the NRA for a "safe harbor" status that affords a presumption that the corresponding shipment is not subject to the tariff rate publication requirement.

Finally, the Commission proposes to add 46 CFR 520.13(e) to its current tariff regulations indicating the interaction of NRAs and otherwise applicable tariff publication requirements of that section.

V. Section-by-Section Analysis

A. Section 532.1—Purpose

The NPRM proposes an exemption from certain provisions of the Act. Section 532.1 sets forth the purpose for the exemption and its conditions.

B. Section 532.2—Scope and Applicability

This provision describes the scope and applicability of the proposed exemption. Notably, the Commission has proposed that the exemption be limited to NVOCCs that are licensed pursuant to 46 CFR Part 515. Further, it states that any NVOCC who fails to maintain its bond or license or has had its tariff suspended or cancelled by the Commission is ineligible to avail itself of the exemption.

The Commission has proposed that, as the exemption as proposed will only apply to rates, but not the other terms of the agreement between shipper and carrier, standard terms ("tariff rules") will continue to be required to be made public in the NVOCC's tariff publication.

C. Section 532.3—Definitions

This provision defines the terms used in the exemption regulation. Specifically, the Commission introduces a new term, "NVOCC Negotiated Rate Arrangement" (NRA). The Commission notes that it does not propose to remove or revise the exemption regulations for NVOCC Service Arrangements (NSAs), 46 CFR Part 531.

The rule as proposed would define an NRA as, "a written and binding arrangement between a shipper and an eligible NVOCC to provide specific transportation service for a stated cargo quantity, from origin to destination, on and after the receipt of the cargo by the carrier or its agent (or the originating carrier in the case of through transportation)." This definition is based on that of "rate" as it appears in the Commission's rules at 46 CFR 520.2. The proposed exemption regulation would also define the term "rules tariff."

D. Section 532.4—Duties

This proposed provision imposes the duty to provide all terms of an NRA upon the offering NVOCC and is intended for the protection of the shipper. The proposed rule requires that an NVOCC invoking the exemption either (1) provide the public electronic access to its rules tariff free of charge or (2) provide a copy of its rules tariff with each of its proposed NRAs.

E. Section 532.5—Requirements for NVOCC Negotiated Rate Arrangements

This provision details the requirements for the timing, contents and documentation of NRAs. NRAs must be agreed to and memorialized in writing. Specifically, the Commission wishes commenters to take notice of the timing requirements of the exemption regulation. NRAs must be concluded and in place prior to the date the cargo is received by the common carrier or its agent (including originating carriers in the case of through transportation). These requirements are based on the applicable rate provision of the Commission's tariff regulations found at 46 CFR 520.7(c). The Commission wishes to note that the regulation as proposed does not allow for any modification to the NRA after the cargo is received by the carrier or its agent (or the originating carrier in the case of through transportation).

F. Section 532.6—Notices

This section provides details of the required notices that an NVOCC invoking the exemption must provide to the Commission and to potential customers. The proposed regulation requires NVOCCs invoking the exemption to continue to publish a rules tariff, which contains terms and conditions for shipments, but not the agreed rate for a particular shipment. The proposed rule requires that the published rules tariff include prominent notice that the NVOCC has chosen to operate under the exemption and opt out of publishing rates in its tariffs.

Alternatively, if an NVOCC seeks to invoke the exemption for all of its dealings with shippers, it may be simpler to provide an indication of this election to the Commission on the NVOCC's Form FMC–1 filing, which would then be reflected on the Commission's Web site along with the NVOCC's tariff location. The Commission seeks comment on whether the regulation should also specify that, when a tariff rate and a duly-executed NRA appear to address the same shipment, the lower rate shall prevail.

G. Section 532.7—Recordkeeping and Audit

This provision would require an NVOCC invoking the exemption to maintain original NRAs and associated records for 5 years in a format easily produced to Commission. An NVOCC would be required to make the NRAs and associated records available to the Commission promptly in response to a request pursuant to 46 CFR 515.31(g).

Failure to keep records would remove the operation of the exemption (even if it had been invoked by a notice as set forth in foregoing sections) and therefore would make the NVOCC subject to penalties for violations of the Act including, for example, 46 U.S.C. 41104(1) (prohibition against a common carrier allowing a person to obtain transportation at less than applicable tariff rates by an unjust or unfair means or device), and 41104(2)(A) (prohibition against a common carrier providing service not in accordance with a tariff).

VI. Statutory Reviews and Request for Comment

In accordance with the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.,* the Chairman of the Federal Maritime Commission certifies that the proposed rule, if promulgated, would not have a significant economic impact on a substantial number of small entities. The Commission recognizes that the majority of businesses affected by this rule qualify as small entities under the guidelines of the Small Business Administration. The rule, however, would establish an optional method for NVOCCs to carry cargo for their customers to be used at their discretion. The rule would pose no economic detriment to small business entities. Rather, it exempts NVOCCs from the otherwise applicable requirements of the Act when such entities comply with the rules set forth herein.

This regulatory action is not a "major rule" under 5 U.S.C. 804(2).

The collection of information requirements contained in this proposed 46 CFR Part 532 have been submitted to the Office of Management and Budget for review under section 3504(h) of the Paperwork Reduction Act of 1980, as amended. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Ronald D. Murphy, Managing Director, Federal Maritime Commission, 800 North Capitol Street, NW., Washington, DC 20573, e-mail: *OMD@fmc.gov,* or fax: (202) 523–3646; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Desk Officer for Federal Maritime Commission, 17th Street and Pennsylvania Avenue, NW., Washington, DC 20503, e-mail: *OIRASubmission@OMB.EOP.GOV,* or fax: (202) 395–5806.

List of Subjects

46 CFR Part 520

Common carrier, Freight, Intermodal transportation, Maritime carrier, Reporting and recordkeeping requirements.

46 CFR Part 532

Exports, Non-vessel-operating common carriers, ocean transportation intermediaries.

Accordingly, the Federal Maritime Commission proposes to amend 46 CFR Part 520 and add 46 CFR Part 532 as follows:

PART 520—CARRIER AUTOMATED TARIFFS

1. The authority for Part 520 continues to read as follows:

Authority: 5 U.S.C. 553; 46 U.S.C. 305, 40101–40102, 40501–40503, 40701–40706, 41101–41109.

§ 520.13 [Amended]

2. In § 520.13, add a new paragraph (e) to read as follows:

§ 520.13 Exemptions and exceptions.

* * * * *

(e) NVOCC Negotiated Rate Arrangements. A licensed NVOCC that satisfies the requirements of part 532 of this chapter is exempt from the requirement in this part that it include rates in a tariff open to public inspection in an automated tariff system.

3. Add part 532 to read as follows:

PART 532—NVOCC NEGOTIATED RATE ARRANGEMENTS

Subpart A—General Provisions

Sec.
532.1 Purpose.
532.2 Scope and applicability.
532.3 Definitions.

Subpart B—Procedures Related to NVOCC Negotiated Rate Arrangements

532.4 Duties of the NVOCC.
532.5 Requirements for NVOCC Negotiated Rate Arrangements.
532.6 Notices.

Subpart C—Recordkeeping Requirements

532.7 Recordkeeping and audit.
532.91 OMB control number assigned pursuant to the Paperwork Reduction Act.

Authority: 46 U.S.C. 40103.

Subpart A—General Provisions

§ 532.1 Purpose.

The purpose of this Part, pursuant to the Commission's statutory authority, is to exempt licensed and bonded non-vessel-operating common carriers (NVOCCs) from the tariff rate publication and adherence requirements of the Shipping Act of 1984, as enumerated herein.

§ 532.2 Scope and applicability.

This Part exempts NVOCCs duly licensed pursuant to 46 CFR 515.3, holding adequate proof of financial responsibility pursuant to 46 CFR 515.21; and meeting the requirements of 46 CFR 532.4 through 532.7; from the following requirements and prohibitions of the Shipping Act and the Commission's regulations:

(a) The requirement in 46 U.S.C. 40501(a)–(c) that the NVOCC include its rates in a tariff open to public inspection in an automated tariff system;

(b) 46 U.S.C. 40501(d);

(c) 46 U.S.C. 40501(e);

(d) 46 U.S.C. 40503;

(e) The prohibition in 46 U.S.C. 41104(2)(A); and

(f) The Commission's corresponding regulation at 46 CFR 520.3(a) that the NVOCC include its rates in a tariff open for public inspection in an automated tariff system;

(g) The Commission's corresponding regulations at 46 CFR 520.4(a)(4), 520.4(f), 520.6(e), 520.7(c), (d), 520.8(a), 520.12, and 520.14. Any NVOCC failing to maintain its bond or license as set forth above, or who has had its tariff suspended by the Commission, shall not be eligible to invoke this exemption.

§ 532.3 Definitions.

When used in this part,

(a) "NVOCC Negotiated Rate Arrangement" means a written and binding arrangement between a shipper and an eligible NVOCC to provide specific transportation service for a stated cargo quantity, from origin to destination, on and after receipt of the cargo by the carrier or its agent (or the originating carrier in the case of through transportation).

(b) "Rate" means a price stated for providing a specified level of transportation service for a stated cargo quantity, from origin to destination, on and after a stated date or within a defined time frame.

(c) "Rules tariff" means the portion of a tariff, as defined by 46 CFR 520.2, containing the terms and conditions governing the charges, classifications, rules, regulations and practices of an NVOCC, but does not include a rate.

Subpart B—Procedures Related to NVOCC Negotiated Rate Arrangements

§ 532.4 Duties of the NVOCC.

Before entering into an NRA under this Part, the NVOCC must:

(a) For each NRA, provide the prospective shipper all the applicable terms as set forth in its rules tariff; or

(b) Provide electronic access to its rules tariffs to the public free of charge.

§ 532.5 Requirements for NVOCC Negotiated Rate Arrangements

In order to qualify for the exemptions to the general rate publication requirement as set forth in section 532.2, an NRA must:

(a) Be in writing;

(b) Be agreed to by both shipper and NVOCC prior to the date on which the cargo is received by the common carrier or its agent (including originating carriers in the case of through transportation);

(c) Clearly specify the rate and to which shipment or shipments such rate will apply; and

(d) may not be modified after the time the shipment is received by the carrier or its agent (including originating carriers in the case of through transportation).

§ 532.6 Notices.

(a) An NVOCC wishing to invoke an exemption pursuant to this part must indicate that intention to the Commission and to the public by one or more of the following:

(1) A prominent notice on its rules tariff; or

(2) By so indicating on its Form FMC–1 on file with the Commission.

(b) [Reserved]

Subpart C—Recordkeeping Requirements

§ 532.7 Recordkeeping and audit.

(a) An NVOCC invoking an exemption pursuant to this part must maintain original NRAs and all associated records including written communications for 5 years in a format easily produced to Commission.

(b) NRAs and all associated records and written communications are subject to inspection and reproduction requests under section 515.31(g) of this chapter. An NVOCC shall produce the requested NRAs and associated records, including written communications, promptly in response to a Commission request.

(c) Failure to keep or timely produce original NRAs and associated records and written communications will disqualify an NVOCC from the operation of the exemption provided pursuant to this part, regardless of whether it has been invoked by notice as set forth above, and may result in a Commission finding of a violation of 46 U.S.C. 41104(1), 41104(2)(A) or other acts prohibited by the Shipping Act.

§ 532.91 OMB control number issued pursuant to the Paperwork Reduction Act

The Commission has received OMB approval for this collection of information pursuant to the Paperwork Reduction Act of 1995, as amended. In accordance with that Act, agencies are required to display a currently valid control number. The valid control number for this collection of information is [3072–XXX].

By the Commission.

Karen V. Gregory,

Secretary.

[FR Doc. 2010–10476 Filed 5–6–10; 8:45 am]

BILLING CODE P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 54

[WC Docket No. 05–337, CC Docket No. 96–45, WC Docket No. 03–109; FCC 10–57]

High-Cost Universal Service Support, Federal-State Joint Board on Universal Service, Lifeline and Link-Up

AGENCY: Federal Communications Commission.

ACTION: Notice of proposed rulemaking.

SUMMARY: In this document, the Commission proposes targeted rule changes to help eligible consumers in Puerto Rico take better advantage of existing universal service low-income support programs. Specifically, the Commission asks whether it should provide additional Link-Up support to help offset special construction charges incurred by consumers when facilities must be built to provide them with access to voice telephone service. By removing a remaining impediment to affordable voice telephone service, the Commission would hope to further close the gap in telephone subscribership between the Commonwealth and non-insular areas.

DATES: Comments on the proposed rules are due on or before June 7, 2010 and reply comments are due on or before June 21, 2010.

ADDRESSES: You may submit comments, identified by WC Docket No. 05–337, CC Docket No. 96–45, WC Docket No. 03–109, by any of the following methods:

• *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.

• *Federal Communications Commission's Web Site: http://fjallfoss.fcc.gov/ecfs2/*. Follow the instructions for submitting comments.

• *People with Disabilities:* Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by e-mail: *FCC504@fcc.gov* or phone: (202) 418–0530 or TTY: (202) 418–0432.

For detailed instructions for submitting comments and additional information on the rulemaking process, *see* the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Ted Burmeister, Wireline Competition Bureau, Telecommunications Access Policy Division, (202) 418–7389 or TTY: (202) 418–0484.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Notice of Proposed Rulemaking in WC Docket No. 05–337, CC Docket No. 96–45, WC Docket No. 03–109, FCC 10–57, adopted April 16, 2010, and released April 16, 2010. The complete text of this document is available for inspection and copying during normal business hours in the FCC Reference Information Center, Portals II, 445 12th Street, SW., Room CY–A257, Washington, DC 20554. The document may also be purchased from the Commission's duplicating contractor, Best Copy and Printing, Inc., 445 12th Street, SW., Room CY–B402, Washington, DC 20554, telephone (800) 378–3160 or (202) 863–2893, facsimile (202) 863–2898, or via the Internet at *http://www.bcpiweb.com*. It is also available on the Commission's Web site at *http://www.fcc.gov*.

Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using: (1) The Commission's Electronic Comment Filing System (ECFS), (2) the Federal Government's eRulemaking Portal, or (3) by filing paper copies. *See* Electronic Filing of Documents in Rulemaking Proceedings, 63 FR 24121, May 1, 1998.

• *Electronic Filers:* Comments may be filed electronically using the Internet by accessing the ECFS: *http://www.fcc.gov/cgb/ecfs/* or the Federal eRulemaking Portal: *http://www.regulations.gov*. Filers should follow the instructions provided on the Web site for submitting comments.

• *Paper Filers:* Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

○ All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW., Room TW–A325, Washington, DC 20554. The filing hours are 8 a.m. to 7 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of *before* entering the building.

○ Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.

○ U.S. Postal Service first-class, Express, and Priority mail should be addressed to 445 12th Street, SW., Washington, DC 20554.

In addition, one copy of each pleading must be sent to each of the following:

• The Commission's duplicating contractor, Best Copy and Printing, Inc, 445 12th Street, SW., Room CY–B402, Washington, DC 20554; Web site: *http://www.bcpiweb.com;* phone: 1–800–378–3160; and

• Charles Tyler, Telecommunications Access Policy Division, Wireline Competition Bureau, 445 12th Street, SW., Room 5–A452, Washington, DC 20554; e-mail: *Charles.Tyler@fcc.gov*.

People with Disabilities: To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to *fcc504@fcc.gov* or call the Consumer & Governmental Affairs Bureau at (202) 418–0530 (voice) or (202) 418–0432 (TTY). Contact the FCC to request reasonable accommodations for filing comments (accessible format documents, sign language interpreters, CART, *etc.*) by e-mail: *fcc504@fcc.gov*; phone: (202) 418–0530 or (202) 418–0432 (TTY).

Filings and comments are also available for public inspection and copying during regular business hours at the FCC Reference Information Center, Portals II, 445 12th Street, SW., Room CY–A257, Washington, DC, 20554. Copies may also be purchased from the Commission's duplicating contractor, BCPI, 445 12th Street, SW., Room CY–B402, Washington, DC 20554. Customers may contact BCPI through its Web site: *http://www.bcpiweb.com,* by e-mail at *fcc@bcpiweb.com*, by telephone at (202) 488–5300 or (800) 378–3160 (voice), (202) 488–5562 (TTY), or by facsimile at (202) 488–5563.

I. Synopsis of the Notice of Proposed Rulemaking

1. Although the Commission declines to establish the universal service high-cost support mechanism proposed by Puerto Rico Telephone Company (PRTC), the Commission acknowledges that there may be a significant number of low-income consumers in Puerto Rico who remain unable to afford access to voice telephone service. Telephone subscribership in Puerto Rico has increased dramatically since the Commission released its notice of proposed rulemaking in 2005. Despite these gains, subscribership in Puerto Rico remains materially lower than in any other jurisdiction reported by the Census Bureau. In addition, a significantly higher percentage of Puerto Rican families are below the poverty threshold than the general U.S. population, with approximately 41 percent of Puerto Rican families reporting income below the poverty threshold between 2006 and 2008, as compared to approximately 10 percent of total U.S. families reporting income below the poverty threshold during the same time period. The State with the next highest percentage of families reporting income below the poverty threshold is Mississippi at 16.7 percent. Not only does Puerto Rico have the highest percentage of households with incomes below the poverty level of any jurisdiction reported by the Census Bureau, but it has the lowest median household income as well. Specifically, the median household income in Puerto Rico in 2007 was $17,741 compared with a national median household income of $50,740. The State with the next lowest median household income is West Virginia, with a median household income of $37,060—over twice the median household income in Puerto Rico. Evidence in the record suggests that infrastructure does not yet reach some subscribers, so some people may not be subscribing because they cannot afford to pay the special construction charges associated with building facilities to reach them. The confluence of these two factors—a subscribership rate lower than any other reported jurisdiction's and an exceptionally high rate of poverty—causes us to believe that additional low-

income support may be appropriate in this jurisdiction. To address this situation and to ensure that low-income consumers in Puerto Rico can take advantage of the assistance available to them through the existing universal service Lifeline and Link Up low-income support programs, we propose to amend our rules to allow eligible low-income consumers in Puerto Rico additional support through the Link Up Program to offset special construction charges incurred if additional facilities are required to provide them with access to voice telephone service.

2. The Commission in the *Twelfth Report and Order,* 65 FR 47941, August 4, 2000, took measures to address impediments to telephone subscribership and infrastructure investment on Tribal lands, including the adoption of enhanced Link Up support. The Commission identified a number of factors that are primary impediments to subscribership on Tribal lands, including the cost of basic voice service, the cost of intrastate toll service, inadequate telecommunications infrastructure and the cost of line extensions, and the lack of competitive service providers offering alternative technologies. At that time, however, the Commission chose not to extend the actions taken in the *Twelfth Report and Order* to all high-cost areas and all insular areas, including Puerto Rico. Although the record demonstrated that subscribership levels were below the national average in other low-income, rural areas and in certain insular areas, the Commission found that the factors causing low subscribership on Tribal lands were not the same factors causing low subscribership in those other jurisdictions. We recognize that is still the case today: while Puerto Rico faces a lower telephone subscriber rate and a higher poverty rate than other jurisdictions, the Commonwealth does not appear to suffer from other impediments to subscribership that affect Tribal lands, notably higher cost to provide voice telephone service and a lack of competitive service providers offering voice service via alternative technologies. Moreover, Puerto Rico has a much higher telephone subscribership rate (approximately 92 percent in 2008) than the subscribership rate we found on reservations when we adopted the *Twelfth Report and Order* (approximately 47 percent).

3. Importantly, however, the Commission's decision in 2000 to limit the measures adopted in the *Twelfth Report and Order* to Tribal lands was driven by its "concern[] that to devise a remedy addressing all low subscribership issues for all unserved or underserved populations simultaneously might unnecessarily delay action on behalf of those who are least served, *i.e.,* Tribal communities." In other words, the Commission placed higher priority on increasing telephone subscribership on Tribal lands—it did not determine that no further action was needed to assist other unserved or underserved populations. The Commission has long attributed Puerto Rico's historically lagging telephone subscribership penetration rate to low per-capita income. Thus, to the extent that parties have identified line extension and construction costs as obstacles to affordable telephone service in Puerto Rico, extending the enhanced Link Up support already available to Tribal lands could likewise "increase subscribership among qualifying low-income individuals [in Puerto Rico] by minimizing certain of these up-front costs." Indeed, by further reducing the initial connection charges and line extension charges for qualifying low-income customers in Puerto Rico, as we already have for consumers living on Tribal lands, we would hope to remove a remaining impediment to affordable voice telephone service and, thus, further close the gap in telephone subscribership between the Commonwealth and non-insular areas.

4. Specifically, for the benefit of consumers in Puerto Rico meeting the eligibility criteria for the Lifeline and Link Up Programs, we propose to amend our rules to increase the cap on Link Up support to cover special construction charges. The cap for these charges would be increased from the current $30 limit to $100. This additional $70 in Link Up support would cap Link Up discounts at the same level as the enhanced Link Up available to eligible residents of Tribal lands. Link Up support would be available to eligible low-income consumers in Puerto Rico for up to 100 percent of the special construction charges, subject to the $100 cap. Under our rules, Link Up support would continue to be available "for a single telecommunications connection at a consumer's principal place of residence." To ensure reasonable use of the support, this support would be available only when a low-income-eligible consumer in Puerto Rico has requested service under the Lifeline or Link Up Programs but such service could not be provided absent construction of additional facilities. Consistent with our rules, all ETCs in Puerto Rico would be required to offer and make available this additional Link Up support to eligible low-income consumers. All ETCs in Puerto Rico also would be required to advertise the availability of this additional Link Up support using media of general distribution in Puerto Rico. In addition, all ETCs receiving Link Up support in Puerto Rico would be required to report the number of consumers that request such additional Link Up support, the number of consumers that receive such support, the reasons why any requesting consumers did not qualify for or receive such support, the cost of constructing the additional facilities, and a description of the additional facilities constructed. This information would be included in the annual report required by section 54.209 of our rules. We seek comment on these proposed revisions to the low-income support rules for eligible low-income consumers in Puerto Rico.

II. Procedural Matters

A. Initial Paperwork Reduction Analysis

5. This notice of proposed rulemaking contains proposed information collections that would apply to fewer than ten respondents and, as a result, is not subject to the Paperwork Reduction Act of 1995. In addition, it does not contain any new, modified, or proposed "information collection burden for small business concerns with fewer than 25 employees" pursuant to the Small Business Paperwork Relief Act of 2002.

B. Initial Regulatory Flexibility Act Certification

6. The Regulatory Flexibility Act (RFA), *see* 5 U.S.C. 603, requires that an agency prepare a regulatory flexibility analysis for notice-and-comment rulemaking proceedings, unless the agency certifies that "the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities." The RFA generally defines "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act. A "small business concern" is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).

7. In this notice of proposed rulemaking, we propose to revise the Commission's rules to permit eligible telecommunications carriers serving Puerto Rico to recover additional universal service support under

specified circumstances. Currently, there are 7 eligible telecommunications carriers serving Puerto Rico, none of which qualify as a small entity. Accordingly, the proposed rule will not have a significant economic impact on a substantial number of small entities.

8. The Commission therefore certifies, pursuant to the RFA, that the proposals in this notice of proposed rulemaking, if adopted, will not have a significant economic impact on a substantial number of small entities. If commenters believe that the proposals discussed in the notice of proposed rulemaking require additional RFA analysis, they should include a discussion of these issues in their comments and additionally label them as RFA comments. The Commission will send a copy of the notice of proposed rulemaking, including a copy of this initial certification, to the Chief Counsel for Advocacy of the SBA. In addition, a copy of the notice of proposed rulemaking and this initial certification will be published in the **Federal Register**.

C. Ex Parte Presentations

9. This proceeding shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules. Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. Other requirements pertaining to oral and written presentations are set forth in § 1.1206(b) of the Commission's rules.

List of Subjects in 47 CFR Part 54

Communications Common Carriers, Low income, Puerto Rico, Reporting and record keeping requirements, Schools, Telecommunications, Telephone.

Marlene H. Dortch,

Secretary, Federal Communications Commission.

Proposed Rules

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR part 54 as follows:

PART 54—UNIVERSAL SERVICE

1. The authority citation continues to read as follows:

Authority: 47 U.S.C. 151, 154(i), 201, 205, 214, and 254 unless otherwise noted.

2. Section 54.411 is amended by revising the first sentence of paragraphs (a)(3), the second sentence of paragraph (b), and by adding paragraph (e) to read as follows:

§ 54.411 Link Up program defined.

(a) * * *

(3) For an eligible resident of Tribal lands or Puerto Rico, a reduction of up to $70, in addition to the reduction in paragraph (a)(1) of this section, to cover 100 percent of the charges between $60 and $130 assessed for commencing telecommunications service at the principal place of residence of the eligible resident of Tribal lands or Puerto Rico. * * *

(b) * * * An eligible resident of Tribal lands or Puerto Rico may participate in paragraphs (a)(1), (a)(2), and (a)(3) of this section.

* * * * *

(e) In order to receive enhanced Link Up support for discounted connection charges provided to eligible residents of Puerto Rico pursuant to paragraph (a)(3) of this section, an eligible telecommunication carrier must comply with the following requirements:

(1) An eligible low-income consumer in Puerto Rico has requested service under the Lifeline or Link Up Programs but such service could not be provided absent construction of additional facilities.

(2) The eligible telecommunications carrier must report the number of consumers that request such additional Link Up support, the number of consumers that receive such support, the reasons why any requesting consumers did not qualify for or receive such support, the cost of constructing the additional facilities, and a description of the additional facilities constructed. This information must be included in the annual report required by section 54.209 of our rules.

[FR Doc. 2010–10853 Filed 5–6–10; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

48 CFR Part 207

RIN 0750–AG45

Defense Federal Acquisition Regulation Supplement; Preservation of Tooling for Major Defense Acquisition Programs (DFARS Case 2008–D042)

AGENCY: Defense Acquisition Regulations System, Department of Defense (DoD).

ACTION: Proposed rule with request for comments.

SUMMARY: DoD is proposing to amend the Defense Federal Acquisition Regulation Supplement (DFARS) to implement section 815 of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009. Section 815 requires acquisition plans for major weapons systems to include a plan for the preservation and storage of special tooling associated with the production of hardware for major defense acquisition programs through the end of the service life of the related weapons system.

DATES: Comments on the proposed rule should be submitted in writing to the address shown below on or before July 6, 2010, to be considered in the formation of the final rule.

ADDRESSES: You may submit comments, identified by DFARS Case 2008–D042, using any of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.*

Follow the instructions for submitting comments.

- *E-mail: dfars@osd.mil.* Include DFARS Case 2008–D042 in the subject line of the message.
- *Fax:* 703–602–0350.
- *Mail:* Defense Acquisition Regulations System, Attn: Ms. Mary Overstreet, OUSD(AT&L)DPAP(DARS), 3060 Defense Pentagon, Room 3B855, Washington, DC 20301–3060.

Comments received generally will be posted without change to *http://www.regulations.gov,* including any personal information provided.

FOR FURTHER INFORMATION CONTACT: Ms. Mary Overstreet, 703–602–0311.

SUPPLEMENTARY INFORMATION:

A. Background

This proposed rule affects all contracts for major weapons that will require special tooling associated with the production of hardware for major

defense acquisition programs. The DFARS language requires acquisition plans for major weapons systems to include a plan for the preservation and storage of special tooling associated with the production of hardware for major defense acquisition programs through the end of the service life of the related weapons system. The plan shall include the identification of any contract clauses, facilities, and funding required for the preservation and storage of such tooling unless the Under Secretary of Defense (Acquisition, Technology, and Logistics) waives this requirement in the best interest of DoD.

This rule was not subject to Office of Management and Budget review under Executive Order 12866, dated September 30, 1993.

B. Regulatory Flexibility Act

DoD does not expect this rule to have a significant economic impact on a substantial number of small entities within the meaning of the Regulatory Flexibility Act, 5 U.S.C. 601, *et seq.,* because this rule affects the internal operating procedures of the Government. Therefore, DoD has not performed an initial regulatory flexibility analysis. DoD invites comments from small business concerns and other interested parties on the expected impact of this rule on small entities.

DoD will also consider comments from small entities concerning the existing regulations in subparts affected by this rule in accordance with 5 U.S.C. 610. Interested parties must submit such comments separately and should cite 5 U.S.C. 610 (DFARS Case 2008–D042) in correspondence.

C. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because the proposed rule does not contain new information collection requirements that require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

List of Subjects in 48 CFR Part 207

Government procurement.

Ynette R. Shelkin,

Editor, Defense Acquisition Regulations System.

Therefore, DoD proposes to amend 48 CFR part 207 as follows:

1. The authority citation for 48 CFR part 207 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR chapter 1.

PART 207—ACQUISITION PLANNING

Subpart 207.1 Acquisition Plans

2. Add paragraph (S–73) to section 207.106 to read as follows:

207.106 Additional requirements for major systems.

* * * * *

(S–73) In accordance with section 815 of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 (Pub. L. 110–417) and DoD policy requirements, acquisition plans for major weapons systems shall include a plan for the preservation and storage of special tooling associated with the production of hardware for major defense acquisition programs through the end of the service life of the related weapons system. The plan shall include the identification of any contract clauses, facilities, and funding required for the preservation and storage of such tooling. Section 815 also allows USD(AT&L) to waive this requirement if USD(AT&L) determines that it is in the best interest of DoD.

[FR Doc. 2010–10769 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–08–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

48 CFR Parts 211 and 252

Defense Federal Acquisition Regulation Supplement; Marking of Government-Furnished Property (DFARS Case 2008–D050)

AGENCY: Defense Acquisition Regulations System, Department of Defense (DoD).

ACTION: Proposed rule with request for comments.

SUMMARY: DoD is issuing a proposed rule to require contractors to tag, label, or mark items of Government-furnished property identified in the contract when the Government-furnished material and Government-furnished property are subject to serialized item management.

DATES: Comments on the proposed rule should be submitted in writing to the address shown below on or before July 6, 2010, to be considered in the formation of the final rule.

ADDRESSES: You may submit comments, identified by DFARS Case 2008–D050, using any of the following methods:

Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.

E-mail: dfars@osd.mil. Include DFARS Case 2008–D050 in the subject line of the message.

Fax: 703–602–0350.

Mail: Defense Acquisition Regulations System, Attn: Ms. Mary Overstreet, OUSD(AT&L)DPAP(DARS), 3060 Defense Pentagon, Room 3B855, Washington, DC 20301–3060.

Comments received generally will be posted without change to *http://www.regulations.gov,* including any personal information provided.

FOR FURTHER INFORMATION CONTACT: Ms. Mary Overstreet, 703–602–0311.

SUPPLEMENTARY INFORMATION:

A. Background

It is DoD policy to uniquely mark, identify, and track Government property through the use of unique identifiers. Unique identifiers allow DoD to track and trace property items throughout their lifecycle (in acquisition and logistics business processes and systems) in an integrated approach across the Department of Defense, Federal and state agencies, non-governmental organizations, and domestic and foreign persons and organizations to provide national level traceability.

B. Regulatory Flexibility Act

DoD has prepared an initial regulatory flexibility analysis consistent with 5 U.S.C. 603. A copy of the analysis may be obtained from the point of contact specified herein. The analysis is summarized as follows:

The objective of the rule is to improve the accountability and control of DoD assets. The proposed clause requires contractors who are provided Government-furnished property to tag, label, or mark the items of Government-furnished property identified in the contract when the requiring activity determines that such items are subject to serialized item management (serially-managed items). At this time, DoD is unable to estimate the number of small entities to which this rule will apply.

DoD invites comments from small business concerns and other interested parties on the expected impact of this rule on small entities.

DoD will also consider comments from small entities concerning the existing regulations in subparts affected by this rule in accordance with 5 U.S.C. 610. Interested parties must submit such comments separately and should cite 5 U.S.C. 610 (DFARS Case 2008–D050) in correspondence.

C. Paperwork Reduction Act

The Paperwork Reduction Act (Pub. L. 96–511) does not apply because the

rule does not impose additional information collection requirements that require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

List of Subjects in 48 CFR Parts 211 and 252

Government procurement.

Ynette R. Shelkin,

Editor, Defense Acquisition Regulations System.

Therefore, DoD proposes to amend 48 CFR parts 211 and 252 as follows:

1. The authority citation for 48 CFR parts 211 and 252 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR Chapter 1.

PART 211—DESCRIBING AGENCY NEEDS

211.274–5 [Redesignated as 211.274–6]

2. Redesignate section 211.274–5 as 211.274–6.

3. Add section 211.274–5 to read as follows:

211.274–5 Policy for tagging, labeling, or marking of Government-furnished property.

(a) It is DoD policy that the appropriate tagging, labeling, or permanent marking of Government-furnished property, based on DoD marking standards (MIL Standard 130) or other standards, be required for Government-furnished property items where the requiring activity determines that such items are subject to serialized item management (serially-managed items).

(b) *Exceptions.* The contractor will not be required to tag, label, or mark Government-furnished property if such items were previously tagged, labeled, or marked.

3. In newly redesignated 211.274–6, add paragraph (c) to read as follows:

211.274–6 Contract clauses.

* * * * *

(c) Use the clause at 252.211–70YY, Tagging, Labeling, and Marking of Government-furnished Property, in solicitations and contracts that contain the clause at—

(1) FAR 52.245–1, Government Property; or

(2) FAR 52.245–2, Government Property Installation Operation Services.

PART 252—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

4. Add section 252.211–70YY to read as follows:

252.211–70YY Tagging, Labeling, and Marking of Government-furnished Property.

As prescribed in 211.274–6(c), use the following clause:

TAGGING, LABELING, AND MARKING OF GOVERNMENT–FURNISHED PROPERTY (DATE)

(a) *Definitions.* As used in this clause—

Government-furnished property means property in the possession of, or directly acquired by, the Government and subsequently furnished to the contractor for performance of a contract, including performance by subcontractors and at Prime Contractor Alternate locations. Government-furnished property includes reparables, e.g., spares and property furnished for repair, maintenance, overhaul, or modification; and Government-furnished material that is requisitioned from Government supply sources without reimbursement by the contractor.

Serially-managed item means an item designated by DoD to be uniquely tracked, controlled, or managed in maintenance, repair, and/or supply systems by means of its serial number.

(b) The Contractor shall tag, label, or mark Government-furnished property items identified in the contract when the requiring activity determines that such items are subject to serialized item management (serially-managed items).

(c) *Exceptions.* Paragraph (b) of this clause does not apply to—

(1) Government-furnished property that was previously marked;

(2) Contractor-acquired property;

(3) Property under any statutory leasing authority;

(4) Property to which the Government has acquired a lien or title solely because of partial, advance, progress, or performance-based payments;

(5) Intellectual property or software; or

(6) Real property.

(End of clause)

[FR Doc. 2010–10763 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–08–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

[DFARS Case 2007–D003]

48 CFR Parts 212, 227, and 252

RIN 0750–AF84

Defense Federal Acquisition Regulation Supplement; Presumption of Development at Private Expense

AGENCY: Defense Acquisition Regulations System, Department of Defense (DoD).

ACTION: Proposed rule with request for comments.

SUMMARY: DoD proposes to amend the Defense Federal Acquisition Regulation Supplement (DFARS) to implement section 802(b) of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2007 and section 815(a)(2) of the NDAA for FY 2008. This proposed rule implements special requirements and procedures related to the validation of a contractor's or subcontractor's asserted restrictions on technical data and computer software.

DATES: Comments on the proposed rule should be submitted to the address shown below on or before July 6, 2010, to be considered in the formulation of the final rule.

ADDRESSES: You may submit comments, identified by DFARS Case 2007–D003, using any of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.
- *E-mail: dfars@osd.mil.* Include DFARS Case 2007–D003 in the subject line of the message.
- *Fax:* 703–602–0350.
- *Mail:* Defense Acquisition Regulations System, Attn: Ms. Amy Williams, OUSD(AT&L)DPAP(DARS), 3060 Defense Pentagon, Room 3B855, Washington, DC 20301–3060.

All comments received will be posted generally without change to *http://www.regulations.gov*, including any personal information provided.

FOR FURTHER INFORMATION CONTACT: Ms. Amy Williams, 703–602–0328.

SUPPLEMENTARY INFORMATION:

A. Background

Section 802(b) of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2007 (Pub. L. 109–364) modified 10 U.S.C. 2321(f) with regard to the presumption of development at private expense for major systems; and section 815(a)(2) of the NDAA for FY 2008 (Pub. L. 110–181) revised 10 U.S.C. 2321(f)(2) to exempt commercially available off-the-shelf items from the requirements that section 802(b) had established for major systems. This proposed rule implements special requirements and procedures related to the validation of a contractor's or subcontractor's asserted restrictions on technical data and computer software. More specifically, the proposed rule affects these validation procedures in the context of two special categories of items: Commercial items, (including commercially available off-the-shelf items); and major systems (including subsystems and components of major systems).

1. Procedures and Presumptions Regarding Development at Private Expense—Technical Data

The validation of asserted restrictions on technical data is based on statutory requirements, codified primarily at 10 U.S.C. section 2321. In 1994, the Federal Acquisition Streamlining Act (Pub. L. 103–355) revised these requirements to include specialized presumptions and procedures for technical data related to commercial items. For discussion purposes, these specialized requirements will be referred to as the "Commercial Rule" (*see* 10 U.S.C. 2320(b)(1) and 2321(f)).

Under the Commercial Rule, a contracting officer is required to presume that a commercial item has been developed entirely at private expense, unless shown otherwise in accordance with the procedures at 10 U.S.C. 2321(f). The detailed procedures at 10 U.S.C. 2321(f)(1) require the contracting officer to presume that the asserted restrictions have been justified (on the basis that the item was developed exclusively at private expense), whether or not the contractor or subcontractor submits a justification in response to the challenge notice issued by the contracting officer. The contracting officer's challenge may be sustained only if information provided by DoD demonstrates that the item was not developed exclusively at private expense.

Section 802(b) of the FY 2007 NDAA established another set of procedures for technical data related to major systems (including subsystems or components thereof). For discussion purposes, these specialized requirements will be referred to as the "Major Systems Rule." Under the Major Systems Rule, codified at 10 U.S.C. 2321(f)(2), a contracting officer's challenge to asserted restrictions on technical data relating to a major system shall be sustained unless the contractor or subcontractor submits information demonstrating that the item was developed exclusively at private expense. In the initial statutory implementation of section 802(b), the Major Systems Rule also covered all contracts for commercial items (*i.e.,* serving as a complete exception to the otherwise applicable Commercial Rule).

However, section 815(a)(2) of the FY 2008 NDAA altered the relationship between these two special rules in cases of overlap—revising the Major Systems Rule so that it does not apply to commercially available off-the-shelf (COTS) items (as defined at 41 U.S.C. 431(c)). Since COTS items are a subtype of commercial items, this change results in COTS items being governed by the Commercial Rule in all cases, regardless of whether the COTS items are included in a major system.

The proposed implementation in the DFARS of these special rules for technical data is modeled closely after this two-pronged statutory scheme. The detailed requirements for each special rule, and the relationship between the two rules, are consolidated in the regulatory coverage at 227.7103–13(c), and in the associated clause language at 252.227–7037(b). In each case, the implementing language combines the relevant preexisting DFARS coverage (*e.g.*, for the Commercial Rule, or for validation procedures generally) with the additional language necessary to implement the new Major Systems Rule and to clarify which rule governs in cases of overlap.

For example, preexisting DFARS coverage for the Commercial Rule at 227.7102 is relocated primarily to new 227.7103–13(c)(2), where it is combined with new language to address the Major Systems Rule (new paragraph (c)(2)(ii)). The language at proposed new 227.7103–13(c)(1) is a combination of preexisting language regarding initiation of challenges from preexisting 227.7102 and 227.7103–13(c) (the latter is redesignated as paragraph (d)).

Several other conforming or clarifying revisions are included. Preexisting language from 227.7102 is adapted to serve as proposed new subsection 227.7102–3, which highlights and cross-references the regulatory coverage for validation of asserted restrictions on technical data for commercial items, which is now consolidated at 227.7103–13. The prescriptive language at proposed 227.7102–4 and 227.7103–6(a) was revised for clarity and consistency. The language "other than a failure to respond under a contract for commercial items" was deleted from 252.227–7037(f) in order to eliminate confusion as to when a contracting officer is required to issue a final decision. The contracting officer must issue a final decision, even when the contractor or subcontractor fails to respond to a challenge notice under a contract for commercial items. Paragraph (f) of 252.227–7037 was amended to state positively that the contracting officer's final decision will adhere to the requirements set forth in paragraph (b) of the clause.

2. Flowdown of Requirements to Subcontracts for Commercial Items—Technical Data

The Federal Acquisition Streamlining Act (FASA) requires the FAR to identify statutes that are not to apply to contracts or subcontracts for commercial items (*see* FAR 12.503 and 12.504). The corresponding DFARS implementation of these requirements at 212.503 and 212.504 made 10 U.S.C. 2320 and 2321 inapplicable to subcontracts for commercial items, even though these requirements remained applicable to such acquisitions at the prime contract level. Accordingly, the associated technical data clauses used in prime contracts have not been flowed down to lower tier subcontracts for commercial items, pursuant to current 227.7102–3, 252.227–7013(k)(2), and 252.227–7037(l). DoD has reviewed the merits of this approach and has determined that these statutory requirements should remain applicable to acquisitions of technical data related to commercial items regardless of whether that data is provided by the prime contractor or by a lower tier subcontractor.

It is well established policy and practice in Federal and DoD acquisitions that the treatment of intellectual property rights creates a special, direct, relationship between the Government and subcontractors (at any tier). For example, the Government's license rights may be granted directly from the subcontractor to the Government, and the Government and subcontractor are allowed to transact business directly with one another on issues related to the subcontractor's intellectual property (such as delivery of technical data directly to the Government, and regarding the validation of asserted restrictions).

Detailed review of the statutory provisions also supports the conclusion that these requirements are intended to apply to all acquisitions of technical data, including both commercial and noncommercial, and at both the prime contract level and lower tier subcontract level. 10 U.S.C. 2320 and 2321 have always applied expressly to prime contractors and subcontractors. When FASA amended these sections to address special requirements for technical data related to commercial items (*e.g.*, the Commercial Rule discussed previously), the statutory amendments retained this approach, explicitly applying at the prime contract and subcontract levels (*see* 10 U.S.C. 2320(a) and (b)(1), and 2321(f)).

This congressional intent is reinforced by the recent amendments to these statutes. Section 802(b) of the FY07 NDAA, which created the new Major Systems Rule, expressly and explicitly cited application to prime contractors and subcontractors "whether or not under a contract for commercial items." Section 815(a)(2) retained all of the language that expressly applies to subcontracts, and revised the language

only to clarify that the Major Systems Rule is not intended to apply to COTS items, which, under the existing statutory language, would be covered under the Commercial Rule at both the prime contract and subcontract level.

Accordingly, this proposed rule revises section 212.504 to eliminate 10 U.S.C. 2320 and 2321 from the list of statutes that are inapplicable to subcontracts for commercial items, and makes corresponding changes to the flowdown requirements at 227.7102–4, and to the associated clauses at 252.227–7013(k)(2), –7015(e), and –7037(l).

3. Procedures and Presumptions Regarding Development at Private Expense—Computer Software

Although 10 U.S.C. 2320 and 2321 apply only to technical data and not to computer software (which is expressly excluded from the definition of technical data), it is longstanding Federal and DoD policy and practice to apply the same or analogous requirements to computer software, whenever appropriate. Many issues are common to both technical data and computer software, and in such cases, conformity of coverage between technical data and computer software is desirable.

For example, although the DFARS provides separate coverage for technical data and computer software—subparts 227.71 and 227.72, respectively—the policies and procedures are identical or analogous in most respects. Regarding the procedures for validation of asserted restrictions on computer software, the DFARS adapts the technical data procedures only for application to noncommercial computer software (*see* 227.7203–13 and 252.227–7019), but provides no similar or analogous coverage for commercial computer software (*see* 227.7202). This applicability model is used to guide the implementation of revisions analogous to those discussed previously for technical data (*i.e.*, analogous revisions are made to the validation procedures only for noncommercial technologies).

Accordingly, it is only the new Major Systems Rule that is applicable to, and implemented for, the validation procedures for noncommercial computer software. These new procedures are added at proposed 227.7203–13(d) and the associated clause at 252.227–7019(f). In each case, the paragraph numbers in the affected coverage are revised to incorporate the new paragraph. In addition, a conforming amendment is also made at 252.227–7019(g)(5) to state positively that the contracting officer's final decision will adhere to the new requirements.

This rule was subject to Office of Management and Budget review under Executive Order 12866, dated September 30, 1993.

B. Regulatory Flexibility Act

DoD does not expect this rule to have a significant economic impact on a substantial number of small entities within the meaning of the Regulatory Flexibility Act, 5 U.S.C. 601, *et seq.*, based on the historically low incidence of formal challenges to validate asserted restrictions by small businesses on major systems or subsystems or components thereof. Therefore, DoD has not performed an initial regulatory flexibility analysis. DoD invites comments from small business concerns and other interested parties on the expected impact of this rule on small entities.

DoD will also consider comments from small entities concerning the existing regulations in subparts affected by this rule in accordance with 5 U.S.C. 610. Interested parties must submit such comments separately and should cite 5 U.S.C. 610 (DFARS Case 2007–D003) in correspondence.

C. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because the proposed changes to the DFARS do not create new information collection requirements, and do not affect the scope of existing information collection requirements in a manner that may require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

List of Subjects in 48 CFR Parts 212, 227, and 252

Government procurement.

Ynette R. Shelkin,

Editor, Defense Acquisition Regulations System.

Therefore, DoD proposes to amend 48 CFR parts 212, 227, and 252 as follows:

1. The authority citation for 48 CFR parts 212, 227, and 252 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR chapter 1.

PART 212—ACQUISITION OF COMMERCIAL ITEMS

212.504 [Amended]

2. Amend section 212.504 by removing and reserving paragraphs (a)(v) and (a)(vi).

PART 227—PATENTS, DATA, AND COPYRIGHTS

227.7102 [Removed]

3. Remove section 227.7102.

227.7102–3 [Redesignated as 227.7102–4]

4. Redesignate section 227.7102–3 as section 227.7102–4.

5. Add new section 227.7102–3 to read as follows:

227.7102–3 Government right to review, verify, challenge and validate asserted restrictions.

Follow the procedures at 227.7103–13 and the clause at 252.227–7037, Validation of Restrictive Markings on Technical Data, regarding the validation of asserted restrictions on technical data related to commercial items.

6. Revise newly designated section 227.7102–4 to read as follows:

227.7102–4 Contract clause.

(a)(1) Except as provided in paragraph (b) of this subsection, use the clause at 252.227–7015, Technical Data–Commercial Items, in all solicitations and contracts when the Contractor will be required to deliver technical data pertaining to commercial items, components, or processes.

(2) Use the clause at 252.227–7015 with its Alternate I in contracts for the development or delivery of a vessel design or any useful article embodying a vessel design.

(b) In accordance with the clause prescription at 227.7103–6(a), use the clause at 252.227–7013, Rights in Technical Data—Noncommercial Items, in lieu of the clause at 252.227–7015 if the Government has paid or will pay any portion of the development costs of a commercial item.

(c) Use the clause at 252.227–7037, Validation of Restrictive Markings on Technical Data, in all solicitations and contracts for commercial items that include the clause at 252.227–7015 or the clause at 252.227–7013.

7. Amend section 227.7103–6 by revising paragraph (a) to read as follows:

227.7103–6 Contract clauses.

(a) Use the clause at 252.227–7013, Rights in Technical Data—Noncommercial Items, in solicitations and contracts when the successful offeror(s) will be required to deliver to the Government technical data pertaining to noncommercial items, or pertaining to commercial items for which the Government has paid or will pay any portion of the development costs. Do not use the clause when the only deliverable items are computer software or computer software documentation (*see* 227.72), commercial

items developed exclusively at private expense (*see* 227.7102–4), existing works (*see* 227.7105), special works (*see* 227.7106), or when contracting under the Small Business Innovation Research Program (*see* 227.7104). Except as provided in 227.7107–2, do not use the clause in architect-engineer and construction contracts.

* * * * *

8. Amend section 227.7103–13 as follows:

a. By redesignating paragraph (c) as paragraph (d);

b. By adding new paragraph (c);

c. By revising newly redesignated paragraph (d) introductory text;

d. By revising the first sentence of (d)(2)(i); and

e. By revising paragraph (d)(4).

The addition and revisions read as follows:

227.7103–13 Government right to review, verify, challenge and validate asserted restrictions.

* * * * *

(c) *Challenge considerations and presumption.* (1) *Requirements to initiate a challenge.* Contracting officers shall have reasonable grounds to challenge the validity of an asserted restriction. Before issuing a challenge to an asserted restriction, carefully consider all available information pertaining to the assertion. The contracting officer shall not challenge a contractor's assertion that a commercial item, component, or process was developed exclusively at private expense unless the Government can demonstrate that it contributed to development of the item, component or process.

(2) *Presumption regarding development exclusively at private expense.* 10 U.S.C. Sections 2320(b)(1) and 2321(f) establish a presumption and procedures regarding validation of asserted restrictions for technical data related to commercial items, and to major systems, on the basis of development exclusively at private expense.

(i) *Commercial items.* For commercially available off-the-shelf items (defined at 41 U.S.C. Section 431(c)) in all cases, and for all other commercial items except as provided in paragraph (c)(2)(ii) of this section, contracting officers shall presume that the items were developed exclusively at private expense whether or not a contractor submits a justification in response to a challenge notice. When a challenge is warranted, a contractor's or subcontractor's failure to respond to the challenge notice cannot be the sole basis for issuing a final decision denying the validity of an asserted restriction.

(ii) *Major systems.* The presumption of development exclusively at private expense does not apply to major systems or subsystems or components thereof, except for commercially available off-the-shelf items (which are governed by paragraph (c)(2)(i) of this section). When the contracting officer challenges an asserted restriction regarding technical data for a major system or a subsystem or component thereof on the basis that the technology was not developed exclusively at private expense, the contracting officer shall sustain the challenge unless information provided by the contractor or subcontractor demonstrates that the item was developed exclusively at private expense.

(d) *Challenge and validation.* All challenges shall be made in accordance with the provisions of the clause at 252.227–7037, Validation of Restrictive Markings on Technical Data.

* * * * *

(2) * * *

(i) After consideration of the situations described in paragraph (d)(3) of this subsection, contracting officers may request the person asserting a restriction to furnish a written explanation of the facts and supporting documentation for the assertion in sufficient detail to enable the contracting officer to ascertain the basis of the restrictive markings . * * *

* * * * *

(4) *Challenge notice.* The contracting officer will not issue a challenge notice unless there are reasonable grounds to question the validity of an assertion. The contracting officer may challenge an assertion whether or not supporting documentation was requested under paragraph (d)(2) of this section. Challenge notices shall be in writing and issued to the contractor or, after consideration of the situations described in paragraph (d)(3) of this section, the person asserting the restriction. The challenge notice shall include the information in paragraph (e) of the clause at 252.227–7037.

* * * * *

9. Revise section 227.7203–13 by redesignating paragraphs (d), (e), and (f) as (e), (f), and (g) respectively; and by adding new paragraph (d) to read as follows:

227.7203–13 Government right to review, verify, challenge and validate asserted restrictions.

* * * * *

(d) *Major systems.* When the contracting officer challenges an asserted restriction regarding noncommercial computer software for a major system or a subsystem or component thereof on the basis that the computer software was not developed exclusively at private expense, the contracting officer shall sustain the challenge unless information provided by the contractor or subcontractor demonstrates that the computer software was developed exclusively at private expense.

* * * * *

PART 252—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

8. Amend section 252.227–7013 by revising the clause date and paragraph (k)(2) to read as follows:

252.227–7013 Rights in Technical Data—Noncommercial Items.

* * * * *

RIGHTS IN TECHNICAL DATA—NONCOMMERCIAL ITEMS (DATE)

* * * * *

(k) * * *

(2) Whenever any technical data is to be obtained from a subcontractor or supplier for delivery to the Government under this contract, the Contractor shall use this same clause in the subcontract or other contractual instrument, and require its subcontractors or suppliers to do so, without alteration, except to identify the parties. No other clause shall be used to enlarge or diminish the Government's, the Contractor's, or a higher-tier subcontractor's or supplier's rights in a subcontractor's or supplier's technical data.

* * * * *

9. Amend section 252.227–7015 by revising the clause date and the introductory text, and adding new paragraph 227.7015(e) to read as follows:

252.227–7015 Technical Data-Commercial Items.

As prescribed in 227.7102–4(a)(1), use the following clause:

TECHNICAL DATA—COMMERCIAL ITEMS (DATE)

* * * * *

(e) *Applicability to subcontractors or suppliers.*

(1) The Contractor shall recognize and protect the rights afforded its subcontractors and suppliers under 10 U.S.C. 2320 and 10 U.S.C. 2321.

(2) Whenever any technical data will be obtained from a subcontractor or supplier for delivery to the Government under this contract, the Contractor shall use this same clause in the subcontract or other contractual instrument, and require its subcontractors or suppliers to do so, without alteration, except to identify the parties.

(End of clause)

10. Amend section 252.227–7019 by revising the clause date; redesignating paragraphs (f) through (i) as (g) through (j) respectively; adding new paragraph (f); and revising newly redesignated paragraphs (g)(5), (h)(1), and (h)(3) to read as follows:

Validation of Asserted Restrictions—Computer Software

* * * * *

VALIDATION OF ASSERTED RESTRICTIONS—COMPUTER SOFTWARE (DATE)

* * * * *

(f) *Major systems.* When the Contracting Officer challenges an asserted restriction regarding noncommercial computer software for a major system or a subsystem or component thereof on the basis that the computer software was not developed exclusively at private expense, the Contracting Officer shall sustain the challenge unless information provided by the Contractor or subcontractor demonstrates that the computer software was developed exclusively at private expense.

(g) * * *

(5) If the Contractor fails to respond to the Contracting Officer's request for information or additional information under paragraph (g)(1) of this clause, the Contracting Officer shall issue a final decision, in accordance with paragraph (f) of this clause and the Disputes clause of this contract, pertaining to the validity of the asserted restriction.

* * * * *

(h) * * *

(1) The Government agrees that, notwithstanding a Contracting Officer's final decision denying the validity of an asserted restriction and except as provided in paragraph (h)(3) of this clause, it will honor the asserted restriction—

* * * * *

(3) The agency head, on a nondelegable basis, may determine that urgent or compelling circumstances do not permit awaiting the filing of suit in an appropriate court, or the rendering of a decision by a court of competent jurisdiction or Board of Contract Appeals. In that event, the agency head will notify the Contractor of the urgent or compelling circumstances. Notwithstanding paragraph (h)(1) of this clause, the Contractor agrees that the agency may use, modify, reproduce, release, perform, display, or disclose computer software marked with government purpose legends for any purpose, and authorize others to do so; or restricted or special license rights for government purposes only. The Government agrees not to release or disclose such software unless, prior to release or disclosure, the intended recipient is subject to the use and non-disclosure agreement at 227.7103–7 of the Defense Federal Acquisition Regulation Supplement (DFARS), or is a Government contractor receiving access to the software for performance of a Government contract that contains the clause at DFARS 252.227–7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends. The agency head's determination may be made at any time after the date of the Contracting Officer's final decision and shall not affect the Contractor's right to damages against the United States, or other relief provided by law, if its asserted restrictions are ultimately upheld.

* * * * *

11. Amend section 252.227–7037 by revising the clause date and revising paragraphs (b), (c), (f), and (l) to read as follows:

* * * * *

252.227–7037 Validation of Restrictive Markings on Technical Data.

* * * * *

VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA (DATE)

* * * * *

(b) *Presumption regarding development exclusively at private expense.*

(1) *Commercial items.* For commercially available off-the-shelf items (defined at 41 U.S.C. Section 431(c)) in all cases, and for all other commercial items except as provided in paragraph (b)(2) of this clause, the Contracting Officer shall presume that a Contractor's asserted use or release restrictions are justified on the basis that the item, component, or process was developed exclusively at private expense. The Contracting Officer shall not challenge such assertions unless information provided by the Contracting Officer demonstrates that the item, component, or process was not developed exclusively at private expense.

(2) *Major systems.* The presumption of development exclusively at private expense does not apply to major systems or subsystems or components thereof, except for commercially available off-the-shelf items (which are governed by paragraph (b)(1) of this clause). When the Contracting Officer challenges an asserted restriction regarding technical data for a major system or a subsystem or component thereof on the basis that the item, component, or process was not developed exclusively at private expense, the Contracting Officer shall sustain the challenge unless information provided by the Contractor or subcontractor demonstrates that the item, component, or process was developed exclusively at private expense.

(c) *Justification.* The Contractor or subcontractor at any tier is responsible for maintaining records sufficient to justify the validity of its markings that impose restrictions on the Government and others to use, duplicate, or disclose technical data delivered or required to be delivered under the contract or subcontract. Except as provided in paragraph (b) of this clause, the Contractor or subcontractor shall be prepared to furnish to the Contracting Officer a written justification for such restrictive markings in response to a challenge under paragraph (e) of this clause.

* * * * *

(f) *Final decision when Contractor or subcontractor fails to respond.* Upon a failure of a Contractor or subcontractor to submit any response to the challenge notice, the Contracting Officer shall issue a final decision to the Contractor or subcontractor in accordance with paragraph (b) of this clause and the Disputes clause of this contract pertaining to the validity of the asserted restriction. This final decision shall be issued as soon as possible after the expiration of the time period of paragraph (e)(1)(ii) or (e)(2) of this clause. Following issuance of the final decision, the Contracting Officer shall comply with the procedures in paragraphs (g)(2)(ii) through (iv) of this clause.

* * * * *

(l) *Flowdown.* The Contractor or subcontractor agrees to insert this clause in contractual instruments with its subcontractors or suppliers at any tier requiring the delivery of technical data.

(End of clause)

[FR Doc. 2010–10764 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–08–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

[DFARS Case 2008–D027]

48 CFR Parts 215, 234, 242, and 252

Defense Federal Acquisition Regulation Supplement; Cost and Software Data Reporting System

AGENCY: Defense Acquisition Regulations System, Department of Defense (DoD).

ACTION: Proposed rule with request for comments.

SUMMARY: DoD proposes to amend the Defense Federal Acquisition Regulation Supplement (DFARS) to set forth DoD Cost and Software Data Reporting system requirements for major defense acquisition programs and major automated information system programs.

DATES: Comments on the proposed rule should be submitted in writing to the address shown below on or before July 6, 2010, to be considered in the formation of the final rule.

ADDRESSES: You may submit comments, identified by DFARS Case 2008–D027, using any of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.
- *E-mail: dfars@osd.mil.* Include DFARS Case 2008–D027 in the subject line of the message.
- *Fax:* 703–602–0350.
- *Mail:* Defense Acquisition Regulations System, Attn: Ms. Mary Overstreet, OUSD(AT&L)DPAP(DARS), Room 3B855, 3060 Defense Pentagon, Washington, DC 20301–3060.

Comments received generally will be posted without change to *http://*

www.regulations.gov, including any personal information provided.

FOR FURTHER INFORMATION CONTACT: Ms. Mary Overstreet, 703–602–0311.

SUPPLEMENTARY INFORMATION:

A. Background

This rule proposes to amend the DFARS to set forth the DoD requirement for offerors to:

- Describe the standard Cost and Software Data Reporting (CSDR) process offerors intend to use to satisfy the requirements of the CSDR Manual, DoD 5000.04–M–1, and the Government-approved contract CSDR plan, DD Form 2794, and the related Resource Distribution Table (RDT), in proposals in response to solicitations for Major Defense Acquisition Programs and Major Automated Information System programs;
- Provide comments on the adequacy of the CSDR contract plan, and the related Resource Distribution Table contained in the solicitation; and,
- Submit with their pricing proposal: the DD Form 1921, Cost Data Summary Report; DD Form 1921–1, Functional Cost-Hour Report; and, DD Form 1921–2, Progress Curve Report.

During contract performance, the contractor will be required to:

- Utilize a documented standard Cost and Software Data Reporting (CSDR) process that satisfies the guidelines contained in the CSDR Manual DoD 5000.04–M–1;
- Use management procedures that provide for generation of timely and reliable information for the Contractor Cost Data Reports, and Software Resources Data Reports;
- Use the Government-approved contract CSDR plan, DD Form 2794, Cost and Software Data Reporting Plan with the related Resource Distribution Table, and DD Form 1921–3, Contractor Business Data Report, as the basis for reporting; and
- Require subcontractors, or subcontracted effort if subcontractors have not been selected, to comply with the Cost and Software Data Reporting requirements.

This is not a significant regulatory action and therefore was not subject to review under section 6(b) of Executive Order 12866, Regulatory Planning and Review, dated September 30, 1993. This is not a major rule.

B. Regulatory Flexibility Act

DoD has prepared an initial regulatory flexibility analysis consistent with 5 U.S.C. 603. A copy of the analysis may be obtained from the point of contact specified herein. The analysis is summarized as follows:

The objective of the rule is to set forth Cost and Software Data Reporting System reporting requirements that are essential for the DoD to estimate the cost of current and future weapon systems. The reported data will also be very useful in performing contract price analysis, comparing prices of similar systems, and for capturing contractor-provided cost estimates in standard formats to facilitate comparison across several contractors. At this time, DoD is unable to estimate the number of small entities to which this rule will apply.

DoD invites comments from small businesses and other interested parties on the expected impact of this rule on small entities.

DoD will also consider comments from small entities concerning the existing regulations in subparts affected by this rule in accordance with 5 U.S.C. 610. Interested parties must submit such comments separately and should cite U.S.C. 601 (DFARS Case 2008–D027) in correspondence.

C. Paperwork Reduction Act

The information collection requirements under this proposed rule were previously approved by the Office of Management and Budget, under Clearance Number 0704–0188. The requirements of this proposed rule are not expected to significantly change the burden hours approved under Clearance Number 0704–0188.

List of Subjects in 48 CFR Parts 215, 234, 242, and 252

Government procurement.

Ynette R. Shelkin,

Editor, Defense Acquisition Regulations System.

Therefore, DoD proposes to amend 48 CFR parts 215, 234, 242, and 252 as follows:

1. The authority citation for 48 CFR parts 215, 234, 242, and 252 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR chapter 1.

PART 215—CONTRACTING BY NEGOTIATION

215.403–5 [Removed]

2. Remove section 215.403–5.

PART 234—MAJOR SYSTEM ACQUSITION

3. Add subpart 234.71 to read as follows:

Subpart 234.71—Cost and Software Data Reporting

Sec.

234.7100 Policy.
234.7101 Solicitation provision and contract clause.

Subpart 234.71—Cost and Software Data Reporting

234.7100 Policy.

(a) The Cost and Software Data Reporting (CSDR) requirement is mandatory for major defense acquisition programs (as defined in 10 U.S.C. 2430), and major automated information system programs (as defined in 10 U.S.C. 2445a) as specified in DoDI 5000.02, Operation of the Defense Acquisition System and the DoD 5000.04–M–1, CSDR Manual. The CSDR system is applied in accordance with the reporting requirements established in DoDI 5000.02.

(b) Prior to contract award, Contracting Officers shall consult with the Defense Cost and Resource Center to determine that the offeror selected for award has proposed a standard Cost and Software Data Reporting (CSDR) system, as described in the offeror's proposal in response to the provision at 252.234–70XX, that is in compliance with DoDI 5000.02, Operation of the Defense Acquisition System, and the DoD 5000.04–M–1, CSDR Manual.

(c) The Defense Cost and Resource Center contact information is located at PGI 234.7100.

234.7101 Solicitation provision and contract clause.

(a) Use the provision at 252.234–70XX, Notice of Cost and Software Data Reporting System, in all solicitations for major defense acquisition programs and major automated information system programs that exceed $50 million. The clause may also be used on selected contracts below $50 million, but greater than $20 million as determined by the DoD program manager with the approval of the Defense Cost and Resource Center (*see* PGI 234.7100).

(b) Use the clause at 252.234–70YY, Cost and Software Data Reporting (CSDR), in all solicitations and contracts for major defense acquisition programs and major automated information system programs that exceed $20 million. The clause may also be used for the CSDR Software Resources Data Reporting requirement on selected contracts below $20 million as determined by the DoD program manager with the approval of the Defense Cost and Resource Center (*see* PGI 234.7100).

PART 242—CONTRACT ADMINISTRATION AND AUDIT SERVICES

4. Revise section 242.503–2 to read as follows:

242.503–2 Postaward conference procedure.

(a) DD Form 1484, Post-Award Conference Record, may be used in conducting the conference and in preparing the conference report.

(b) For contracts that include the clause at 252.234–70YY, postaward conferences shall include a discussion of the Contractor's standard Cost and Software Data Reporting (CSDR) process that satisfies the guidelines contained in the CSDR Manual DoD 5000.04–M–1 and the requirements in the Government approved contract CSDR plan, DD Form 2794, Cost and Software Data Reporting Plan and related Resource Distribution Table, and DD Form 1921–3, Contractor Business Data Report.

PART 252—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

5. Add section 252.234–70XX to read as follows:

252.234 70XX Notice of Cost and Software Data Reporting System.

As prescribed in 234.7101(a), use the following provision:

NOTICE OF COST AND SOFTWARE DATA REPORTING SYSTEM (DATE)

(a) The offeror shall—

(1) Describe the standard Cost and Software Data Reporting (CSDR) process that it intends to use to satisfy the requirements of the CSDR Manual, DoD 5000.04–M–1, and the Government-approved contract CSDR plan, DD Form 2794 and related Resource Distribution Table contained in the solicitation. For Contractor Cost and Data Reporting (CCDR) application, the description will demonstrate how reports are based, to the maximum extent possible, upon actual cost transactions and not cost allocations. The description will also show how the data from the offeror's accounting system will be mapped into the standard reporting categories required in the Contractor CCDR data item descriptions. The document shall also describe how the offeror segregates recurring and nonrecurring costs;

(2) Provide comments on the adequacy of the CSDR contract plan and related Resource Distribution Table contained in the solicitation; and

(3) Submit the DD Form 1921, Cost Data Summary Report, DD Form 1921–1, Functional Cost-Hour Report, and DD Form 1921–2, Progress Curve Report, with its pricing proposal.

(b) The offeror shall identify the subcontractors or the subcontracted effort, if the subcontractors have not been selected, to whom the CSDR requirements will apply. This will be accomplished by providing comments on the Resource Distribution Table contained in the solicitation. The offeror shall be responsible for ensuring the selected subcontractors comply with the requirements of the CSDR System. The offeror shall also be responsible for notifying the Government prior to changes in subcontractor or planned subcontract circumstances affecting CSDR compliance.

(End of provision)

6. Add section 252.234–70YY to read as follows:

252.234 70YY Cost and Software Data Reporting System.

As prescribed in 234.7101(b), use the following clause:

COST AND SOFTWARE DATA REPORTING SYSTEM (DATE)

(a) In the performance of this contract, the Contractor shall use—

(1) A documented standard Cost and Software Data Reporting (CSDR) process that satisfies the guidelines contained in the CSDR Manual DoD 5000.04–M–1;

(2) Management procedures that provide for generation of timely and reliable information for the Contractor Cost Data Reports (CCDRs) and Software Resources Data Reports (SRDRs) required by the CCDR and SRDR data items of the contract. These procedures will also maximize use of actual cost transactions rather than cost allocations; and

(3) The Government-approved contract CSDR plan, DD Form 2794, Cost and Software Data Reporting Plan and related Resource Distribution Table, and DD Form 1921–3, Contractor Business Data Report, as the basis for reporting in accordance with the required CSDR data item descriptions (DIDs).

(b) The Contractor shall require the following subcontractors to comply with the CSDR requirements:

(Contracting Officer to insert names of subcontractors (or subcontracted effort if subcontractors have not been selected) designated for application of the CSDR requirement of the clause.)

_____

_____

_____

_____

(End of clause)

[FR Doc. 2010–10762 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–08–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

[DFARS Case 2006–D029]

48 CFR Part 225

RIN 0750–AG57

Defense Federal Acquisition Regulation Supplement; Department of Defense (DoD); Restriction on Ball and Roller Bearings

ACTION: Proposed rule with request for comments.

SUMMARY: DoD is proposing to amend the Defense Federal Acquisition Regulation Supplement (DFARS) to revise the domestic source restriction on acquisition of ball and roller bearings. The current DFARS restriction on ball and roller bearings requires that the bearings and the main bearing components be manufactured in the U.S. or Canada. This requirement was based on the restriction at 10 U.S.C. 2534(a)(5), which expired on October 1, 2005. The proposed revision interprets the annual defense appropriations act domestic source restriction on acquisition of ball and roller bearings in a manner similar to the domestic source restriction of the Buy American Act.

DATES: Comments on the proposed rule should be submitted to the address shown below on or before July 6, 2010, to be considered in the formulation of the final rule.

ADDRESSES: You may submit comments, identified by DFARS Case 2006–D029, using any of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.
- *E-mail: dfars@osd.mil.* Include DFARS Case 2006–D029 in the subject line of the message.
- *Fax:* 703–602–0350.
- *Mail:* Defense Acquisition Regulations Council, Attn: Ms. Amy Williams, OUSD(AT&L)DPAP(DARS), Room 3B855, 3060 Defense Pentagon, Washington, DC 20301–3060.

All comments received will be posted to *http://emissary.acq.osd.mil/dar/dfars.nsf.*

FOR FURTHER INFORMATION CONTACT: Ms. Amy Williams, 703–602–0328.

SUPPLEMENTARY INFORMATION:

A. Background

The current DFARS restriction on ball and roller bearings (225.7009) implemented two statutory restrictions: 10 U.S.C. 2534(a)(5) and annual appropriations act restrictions. 10 U.S.C.

2534(a)(5) required that all ball and roller bearings and bearing components, either as end items or components of end items, be wholly manufactured in the United States or Canada. The annual defense appropriations act restrictions require that all ball and roller bearings be produced by a domestic source and be of domestic origin. This restriction does not apply to the acquisition of commercial items (either as components or end products), unless the commercial bearings themselves are purchased as the end products.

In the context of DFARS Part 225, the DAR Council always interprets the term "domestic" to include Canada, unless the statute specifically provides otherwise. Canada is part of the national technology and industrial base as defined at 10 U.S.C. 2500. Congress has never objected to this interpretation of the term "domestic."

Since the restriction at 10 U.S.C. 2534(a)(5) was considered to be more stringent than the annual defense appropriations act restriction, the DFARS requirements that the bearing and the main bearing components must be 100 percent manufactured in the U.S. or Canada was based on 10 U.S.C. 2534(a)(5). 10 U.S.C 2534(a)(5) expired on October 1, 2005.

It is more and more difficult to acquire commercial bearings in which all the main bearing components are 100 percent manufactured in the U.S. or Canada. U.S. and Canadian manufacturers of commercial bearings are increasingly going offshore for components, such as retainers, that do not represent the core competency of the bearing manufacturer. It is often not possible to obtain domestic commercial bearings that do not contain some nondomestic components. The Government does not constitute a large enough share of the market to influence significantly this decision by manufacturers of commercial bearings.

Therefore, this rule proposes to revise the restriction to implement the annual defense appropriations act restriction in a way that will allow more flexibility with regard to the source of bearing components.

The DAR Council interprets the phrase "produced by a domestic source and of domestic origin" to mean that a ball or roller bearing must be manufactured in the U.S. or Canada (domestic source) and the cost of its U.S. and Canadian components must exceed 50 percent of the cost of all its components (of domestic origin). This interpretation is comparable to implementation of the Buy American Act and to some of the other domestic source restrictions in the DFARS. For example, anchor and mooring chain is an appropriations act restriction that also requires the item to be manufactured in the U.S. with the cost of the components manufactured in the U.S. required to exceed 50 percent of the total cost of components. It is reasonable to apply the component test similarly to ball and roller bearings to establish that the bearing is of domestic origin.

This rule was subject to Office of Management and Budget review under Executive Order 12866, dated September 30, 1993.

B. Regulatory Flexibility Act

DOD does not expect this rule to have a significant economic impact on a substantial number of small entities within the meaning of the Regulatory Flexibility Act, 5 U.S.C. 601, *et seq.* However, because this rule has impact on the application of domestic source restrictions, DoD has performed an initial regulatory flexibility analysis, which is summarized as follows:

The objective of the rule is to allow more flexibility to domestic bearings manufacturers in the acquisition of nondomestic components. The legal basis for the rule is Section 8065 of the Fiscal Year 2002 DoD Appropriations Act (Pub. L. 107–117) and the same restriction in subsequent DoD appropriations acts.

The final rule affects manufacturers of bearings, bearing components, and noncommercial products that incorporate bearings.

• *Bearings.* This rule applies only to bearings purchased as end products or noncommercial bearings incorporated in noncommercial end products or noncommercial components of noncommercial end products (*see* TAB A). Because this rule allows some element of nondomestic content in ball and roller bearing components, as long as the U.S. or Canadian manufactured bearing contains less than 50 percent nondomestic bearing components, both large and small businesses may find greater numbers of sources from which to obtain ball and roller bearing components. Greater sourcing choices may enable small businesses to compete more successfully for DOD ball and roller bearing acquisitions.

• *Bearing components.* Manufacturers of domestic bearing components may face increased competition from manufacturers of nondomestic bearing components. However, many of the bearing components that are being outsourced are no longer readily available from domestic sources.

• *Manufacturers of noncommercial products incorporating bearings.* Manufacturers of noncommercial products incorporating bearings (both large and small businesses) will find it easier to acquire domestic bearings and will less frequently need to request nonavailability determinations (*see* TAB B).

The proposed rule imposes no reporting, recordkeeping, or other information collection requirements. The rule does not duplicate, overlap, or conflict with any other Federal rules. There are no known significant alternatives to the rule that would meet the requirements of the statute and minimize any significant economic impact of the rule on small entities. The impact of this rule on small business is expected to be predominantly positive.

DoD invites comments from small businesses and other interested parties. DoD also will consider comments from small entities concerning the affected DFARS subparts in accordance with 5 U.S.C. 610. Such comments should be submitted separately and should cite DFARS Case 2006–D029.

C. Paperwork Reduction Act

This proposed rule does not impose any new or modified information collection requirements that require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

List of Subjects in 48 CFR Part 225

Government procurement.

Ynette R. Shelkin,

Editor, Defense Acquisition Regulations System.

Therefore, DoD proposes to amend 48 CFR part 225 as follows:

1. The authority citation for 48 CFR part 225 continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR chapter 1.

PART 225—FOREIGN ACQUISITION

2. Revise section 225.7009–2 to read as follows:

225.7009–2 Restriction.

(a) Do not acquire ball and roller bearings unless—

(1) The bearings are manufactured in the United States or Canada; and

(2) For each ball or roller bearing, the cost of the bearing components mined, produced, or manufactured in the United States or Canada exceeds 50 percent of the total cost of the bearing components of that ball or roller bearing.

(b) The restriction at 225.7002–1(b) may also apply to bearings that are made from specialty metals, such as high carbon chrome steel (bearing steel).

3. Revise section 252.225–7016 to read as follows:

252.225–7016 Restriction on Acquisition of Ball and Roller Bearings.

As prescribed in 225.7009–5, use the following clause:

RESTRICTION ON ACQUISITION OF BALL AND ROLLER BEARINGS (DATE)

(a) *Definitions.* As used in this clause—

(1) *Bearing component* means the bearing element, retainer, inner race, or outer race.

(2) *Component,* other than a bearing component, means any item supplied to the Government as part of an end product or of another component.

(3) *End product* means supplies delivered under a line item of this contract.

(b) Except as provided in paragraph (c) of this clause—

(1) Each ball and roller bearing delivered under this contract shall be manufactured in the United States, its outlying areas, or Canada; and

(2) For each ball or roller bearing, the cost of the bearing components mined, produced, or manufactured in the United States or Canada shall exceed 50 percent of the total cost of the bearing components of that ball or roller bearing.

(c) The restriction in paragraph (b) of this clause does not apply to ball or roller bearings that are acquired as—

(1) Commercial components of a noncommercial end product; or

(2) Commercial or noncommercial components of a commercial component of a noncommercial end product.

(d) The restriction in paragraph (b) of this clause may be waived upon request from the Contractor in accordance with subsection 225.7009–4 of the Defense Federal Acquisition Regulation Supplement.

(e) If this contract includes DFARS clause 252.225–7009, Restriction on Acquisition of Certain Articles Containing Specialty Metals, all bearings that contain specialty metals, as defined in that clause, must meet the requirements of that clause.

(f) The Contractor shall insert the substance of this clause, including this paragraph (f), in all subcontracts, except those for—

(1) Commercial items; or

(2) Items that do not contain ball or roller bearings.

(End of clause)

[FR Doc. 2010–10766 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–08–P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 594

[Docket No. NHTSA 2010–0035; Notice 1]

RIN 2127–AK70

Schedule of Fees Authorized by 49 U.S.C. 30141

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This document proposes fees for Fiscal Year 2011 and until further notice, as authorized by 49 U.S.C. 30141, relating to the registration of importers and the importation of motor vehicles not certified as conforming to the Federal motor vehicle safety standards (FMVSS). These fees are needed to maintain the registered importer (RI) program.

DATES: You should submit your comments early enough to ensure that Docket Management receives them no later than June 7, 2010.

ADDRESSES: Comments should refer to the docket and notice numbers above and be submitted by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov*. Follow the online instructions for submitting comments.
- *Mail:* Docket Management Facility: U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12–140, Washington, DC 20590–0001.
- *Hand Delivery or Courier:* West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal holidays.
- *Fax:* 202–493–2251.

Instructions: For detailed instructions on submitting comments and additional information on the rulemaking process, see the Public Participation heading of the Supplementary Information section of this document. Note that all comments received will be posted without change to *http://www.regulations.gov*, including any personal information provided. Please see the Privacy Act heading below.

Privacy Act: Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, *etc.*). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477–78) or you may visit *http://DocketInfo.dot.gov*.

Docket: For access to the docket to read background documents or comments received, go to *http://www.regulations.gov* or to the street address listed above. Follow the online instructions for accessing the dockets.

FOR FURTHER INFORMATION CONTACT: Clint Lindsay, Office of Vehicle Safety Compliance, NHTSA (202–366–5291). For legal issues, you may call Nicholas Englund, Office of Chief Counsel, NHTSA (202–366–5263). You may call Docket Management at 202–366–9324. You may visit the Docket in person from 9 a.m. to 5 p.m., Monday through Friday.

SUPPLEMENTARY INFORMATION:

Introduction

On June 24, 1996, at 61 FR 32411, we published a notice that discussed in full the rulemaking history of 49 CFR part 594 and the fees authorized by the Imported Vehicle Safety Compliance Act of 1988, Public Law 100–562, since recodified at 49 U.S.C. 30141–47. The reader is referred to that notice for background information relating to this rulemaking action. Certain fees were initially established to become effective January 31, 1990, and have been periodically adjusted since then.

We are required to review and make appropriate adjustments at least every two years in the fees established for the administration of the RI program. See 49 U.S.C. 30141(e). The fees applicable in any fiscal year (FY) are to be established before the beginning of such year. *Ibid.* We are proposing fees that would become effective on October 1, 2010, the beginning of FY 2011. The statute authorizes fees to cover the costs of the importer registration program, to cover the cost of making import eligibility decisions, and to cover the cost of processing the bonds furnished to the Department of Homeland Security (Customs). We last amended the fee schedule in 2008. See final rule published on September 24, 2008 at 73 FR 54981. Those fees apply to Fiscal Years 2009 and 2010.

The proposed fees are based on time and costs associated with the tasks for which the fees are assessed and reflect the increase in hourly costs in the past two fiscal years attributable to the approximately 4.78 and 2.42 percent raises (including the locality adjustment for Washington, DC) in salaries of employees on the General Schedule that became effective on January 1, 2009, and on January 1, 2010, respectively.

Requirements of the Fee Regulation

Section 594.6—Annual Fee for Administration of the Importer Registration Program

Section 30141(a)(3) of Title 49, U.S. Code provides that RIs must pay the annual fees established "* * * to pay for the costs of carrying out the registration program for importers * * *" This fee is payable both by new applicants and by existing RIs. To maintain its registration, each RI, at the time it submits its annual fee, must also file a statement affirming that the information it furnished in its registration application (or in later submissions amending that information) remains correct (49 CFR 592.5(f)).

In compliance with the statutory directive, we reviewed the existing fees and their bases in an attempt to establish fees that would be sufficient to recover the costs of carrying out the registration program for importers for at least the next two fiscal years. The initial component of the Registration Program Fee is the fee attributable to processing and acting upon registration applications. We have tentatively determined that this fee should be increased from $295 to $320 for new applications. We have also tentatively determined that the fee for the review of the annual statement should be increased from $186 to $195. The proposed adjustments reflect our time expenditures in reviewing both new applications and annual statements with accompanying documentation, as well as the inflation factor attributable to Federal salary increases and locality adjustments in the two years since the fees were last adjusted.

We must also recover costs attributable to maintenance of the registration program that arise from the need for us to review a registrant's annual statement and to verify the continuing validity of information already submitted. These costs also include anticipated costs attributable to the possible revocation or suspension of registrations and reflect the amount of time that we have devoted to those matters in the past two years.

Based upon our review of these costs, the portion of the fee attributable to the maintenance of the registration program is approximately $475 for each RI, an increase of $10. When this $475 is added to the $320 representing the registration application component, the cost to an applicant for RI status comes to $795, which is the fee we propose. This represents an increase of $35 over the existing fee. When the $475 is added to the $195 representing the annual statement component, the total cost to an RI for renewing its registration comes to $670, which represents an increase of $19.

Sec. 594.6(h) enumerates indirect costs associated with processing the annual renewal of RI registrations. The provision states that these costs represent a pro-rata allocation of the average salary and benefits of employees who process the annual statements and perform related functions, and "a pro-rata allocation of the costs attributable to maintaining the office space, and the computer or word processor." For the purpose of establishing the fees that are currently in existence, indirect costs are $20.31 per man-hour. We are proposing to increase this figure by $.36, to $20.67. This proposed increase is based on the difference between enacted budgetary costs within the Department of Transportation for the last two fiscal years, which were higher than the estimates used when the fee schedule was last amended, and takes account of further projected increases over the next two fiscal years.

Sections 594.7, 594.8—Fees To Cover Agency Costs in Making Importation Eligibility Decisions

Section 30141(a)(3) also requires registered importers to pay other fees the Secretary of Transportation establishes to cover the costs of "* * * (B) making the decisions under this subchapter." This includes decisions on whether the vehicle sought to be imported is substantially similar to a motor vehicle that was originally manufactured for importation into and sale in the United States and certified by its original manufacturer as complying with all applicable FMVSS, and whether the vehicle is capable of being readily altered to meet those standards. Alternatively, where there is no substantially similar U.S. certified motor vehicle, the decision is whether the safety features of the vehicle comply with, or are capable of being altered to comply with, the FMVSS based on destructive test information or such other evidence that NHTSA deems to be adequate. These decisions are made in response to petitions submitted by RIs or manufacturers, or on the Administrator's own initiative.

The fee for a vehicle imported under an eligibility decision made in response to a petition is payable in part by the petitioner and in part by other importers. The fee to be charged for each vehicle is the estimated pro-rata share of the costs in making all the eligibility decisions in a fiscal year. Inflation and General Schedule raises must also be taken into account in the computation of costs.

The agency believes that the volume of petition-based imports for the next two fiscal years should not be projected on the basis of any single year. The agency estimates the number of vehicles that will be imported under an import eligibility petition in each year for Fiscal Years 2011 and 2012 will equal the average number of such imports over that past five years. Further, the agency estimates the number of import eligibility petitions that will be filed in each year for Fiscal Years 2011 and 2012 will equal the average number of petitions filed each year since 2000. Based on these estimates, we project that 554 vehicles would be imported under petition-based eligibility decisions and that 25 petition-based import eligibility decisions would be made.

Based on these estimates, we project that for Fiscal Years 2011 and 2012, the agency's costs for processing these 25 petitions will be $95,479. The petitioners will pay $8,125 of that amount in the processing fees that accompanied the filing of their petitions, leaving the remaining $87,354 to be recovered from the importers of the 554 vehicles imported under petition-based import eligibility decisions. Dividing $87,354 by 554 yields a pro-rata fee of $158 for each vehicle imported under an eligibility decision that resulted from the granting of a petition. We are therefore proposing to decrease the pro-rata share of petition costs that are to be assessed against the importer of each vehicle from $198 to $158, which represents a decrease of $40. The same $158 fee would be paid regardless of whether the vehicle was petitioned under 49 CFR 593.6(a), based on the substantial similarity of the vehicle to a U.S. certified model, or was petitioned under 49 CFR 593.6(b), based on the safety features of the vehicle complying with, or being capable of being modified to comply with, all applicable FMVSS.

We are proposing no increase in the current fee of $175 that covers the initial processing of a "substantially similar" petition. Likewise, we are also proposing to maintain the existing fee of $800 to cover the initial costs for processing petitions for vehicles that have no substantially similar U.S.-certified counterpart.

In the event that a petitioner requests an inspection of a vehicle, the fee for such an inspection would remain $827 for vehicles that are the subject of either type of petition.

The importation fee varies depending upon the basis on which the vehicle is determined to be eligible. For vehicles covered by an eligibility decision on the

agency's own initiative (other than vehicles imported from Canada that are covered by import eligibility numbers VSA–80 through 83, for which no eligibility decision fee is assessed), we are proposing that the fee remain $125. NHTSA determined that the costs associated with previous eligibility determinations on the agency's own initiative would be fully recovered by October 1, 2010. We propose to apply the fee of $125 per vehicle only to vehicles covered by determinations made by the agency on its own initiative on or after October 1, 2010.

Section 594.9—Fee for Reimbursement of Bond Processing Costs and Costs for Processing Offers of Cash Deposits or Obligations of the United States in Lieu of Sureties on Bonds

Section 30141(a)(3) also requires a registered importer to pay any other fees the Secretary of Transportation establishes "* * * to pay for the costs of—(A) processing bonds provided to the Secretary of the Treasury * * *" upon the importation of a nonconforming vehicle to ensure that the vehicle would be brought into compliance within a reasonable time, or if it is not brought into compliance within such time, that it be exported, without cost to the United States, or abandoned to the United States.

The Department of Homeland Security (Customs) exercises the functions associated with the processing of these bonds. To carry out the statute, we make a reasonable determination of the costs that Department incurs in processing the bonds. In essence, the cost to Customs is based upon an estimate of the time that a GS–9, Step 5 employee spends on each entry, which Customs has judged to be 20 minutes.

Based on General Schedule salary raises that were effective in January 2009 and 2010 and the inclusion of costs for benefits, we are proposing that the processing fee be decreased by $.30, from $10.23 per bond to $9.93. This decrease reflects the fact that GS–9 salaries were increased by a smaller amount than we previously projected when we last amended the fee schedule in 2008. The $9.93 proposed fee would more closely reflect the direct and indirect costs that should be associated with processing the bonds.

In lieu of sureties on a DOT conformance bond, an importer may offer United States money, United States bonds (except for savings bonds), United States certificates of indebtedness, Treasury notes, or Treasury bills (collectively referred to as "cash deposits") in an amount equal to the amount of the bond. 49 CFR 591.10(a). The receipt, processing, handling, and disbursement of the cash deposits that have been tendered by RIs cause the agency to consume a considerable amount of staff time and material resources. NHTSA has concluded that the expense incurred by the agency to receive, process, handle, and disburse cash deposits may be treated as part of the bond processing cost, for which NHTSA is authorized to set a fee under 49 U.S.C. 30141(a)(3)(A). We first established a fee of $459 for each vehicle imported on and after October 1, 2008, for which cash deposits or obligations of the United States are furnished in lieu of a conformance bond. See final rule published on July 11, 2008 at 73 FR 39890.

The agency considered its direct and indirect costs in calculating the fee for the review, processing, handling, and disbursement of cash deposits submitted by importers and RIs in lieu of sureties on a DOT conformance bond. We are proposing to increase the fee from $459 to $514, which represents an increase of $55. The factors that the agency has taken into account in proposing the fee include time expended by agency personnel, the increase in General Schedule salary raises that were effective in January 2009 and 2010, and increased contractor and overhead costs.

Section 594.10—Fee for Review and Processing of Conformity Certificate

Each RI is currently required to pay $14 per vehicle to cover the costs the agency incurs in reviewing a certificate of conformity. We estimate that these costs would increase from $14 to an average of $17 per vehicle because of the increase in General Schedule salary raises that were effective in January 2009 and 2010, and increased contractor and overhead costs. Based on these estimates, we are proposing to increase the fee charged for vehicles for which a paper entry and fee payment is made, from $14 to $17, a difference of $3 per vehicle. However, if an RI enters a vehicle through the Automated Broker Interface (ABI) system, has an e-mail address to receive communications from NHTSA, and pays the fee by credit card, the cost savings that we realize allow us to significantly reduce the fee to $6. We propose to maintain the fee of $6 per vehicle if all the information in the ABI entry is correct.

Errors in ABI entries not only eliminate any time savings, but also require additional staff time to be expended in reconciling the erroneous ABI entry information to the conformity data that is ultimately submitted. Our experience with these errors has shown that staff members must examine records, make time-consuming long distance telephone calls, and often consult supervisory personnel to resolve the conflicts in the data. We have calculated this staff and supervisory time, as well the telephone charges, to amount to approximately $57 for each erroneous ABI entry. Adding this to the $6 fee for the review of conformity packages on automated entries yields a total of $63, representing a proposed $9 increase in the fee that is currently charged when there are one or more errors in the ABI entry or in the statement of conformity.

Effective Date

The proposed effective date of the final rule is October 1, 2010.

Rulemaking Analyses

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

Executive Order 12866, "Regulatory Planning and Review" (58 FR 51735, October 4, 1993), provides for making determinations whether a regulatory action is "significant" and therefore subject to Office of Management and Budget (OMB) review and to the requirements of the Executive Order. The Order defines a "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

NHTSA has considered the impact of this rulemaking action under Executive Order 12866 and the Department of Transportation's regulatory policies and procedures. This rulemaking is not significant. Accordingly, the Office of Management and Budget has not reviewed this rulemaking document under Executive Order 12886. Further, NHTSA has determined that the rulemaking is not significant under Department of Transportation's regulatory policies and procedures.

Based on the level of the fees and the volume of affected vehicles, NHTSA currently anticipates that if made final the costs of the proposed rule would be so minimal as not to warrant preparation of a full regulatory evaluation. The action does not involve any substantial public interest or controversy. If made final there would be no substantial effect upon State and local governments. There would be no substantial impact upon a major transportation safety program. A regulatory evaluation analyzing the economic impact of the final rule establishing the registered importer program, adopted on September 29, 1989, was prepared, and is available for review in the docket.

B. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.,* as amended by the Small Business Regulatory Enforcement Fairness Act (SBFEFA) of 1996), whenever an agency is required to publish a notice of proposed rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.,* small businesses, small organizations, and small governmental jurisdictions). The Small Business Administration's regulations at 13 CFR part 121 define a small business, in part, as a business entity "which operates primarily within the United States." (13 CFR 121.105(a)). No regulatory flexibility analysis is required if the head of an agency certifies that the rule would not have a significant economic impact on a substantial number of small entities. The SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule would not have a significant economic impact on a substantial number of small entities.

The agency has considered the effects of this proposed rulemaking under the Regulatory Flexibility Act, and certifies that if the proposed amendments are adopted they would not have a significant economic impact upon a substantial number of small entities.

The following is NHTSA's statement providing the factual basis for the certification (5 U.S.C. 605(b)). The proposed amendments would primarily affect entities that currently modify nonconforming vehicles and which are small businesses within the meaning of the Regulatory Flexibility Act; however, the agency has no reason to believe that these companies would be unable to pay the fees proposed by this action. In most instances, these fees would not be changed or be only modestly increased (and in some instances decreased) from the fees now being paid by these entities. Moreover, consistent with prevailing industry practices, these fees should be passed through to the ultimate purchasers of the vehicles that are altered and, in most instances, sold by the affected registered importers. The cost to owners or purchasers of nonconforming vehicles that are altered to conform to the FMVSS may be expected to increase (or decrease) to the extent necessary to reimburse the registered importer for the fees payable to the agency for the cost of carrying out the registration program and making eligibility decisions, and to compensate Customs for its bond processing costs.

Governmental jurisdictions would not be affected at all since they are generally neither importers nor purchasers of nonconforming motor vehicles.

C. Executive Order 13132 (Federalism)

Executive Order 13132 on "Federalism" requires NHTSA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications." Executive Order 13132 defines the term "policies that have federalism implications" to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Under Executive Order 13132, NHTSA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal Government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or NHTSA consults with State and local officials early in the process of developing the proposed regulation.

The proposed rule would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government as specified in Executive Order 13132. Moreover, NHTSA is required by statute to impose fees for the administration of the RI program and to review and make necessary adjustments in those fees at least every two years. Thus, the requirements of section 6 of the Executive Order do not apply to this rulemaking action.

D. National Environmental Policy Act

NHTSA has analyzed this action for purposes of the National Environmental Policy Act. The action would not have a significant effect upon the environment because it is anticipated that the annual volume of motor vehicles imported through registered importers would not vary significantly from that existing before promulgation of the rule.

E. Executive Order 12988 (Civil Justice Reform)

Pursuant to Executive Order 12988 "Civil Justice Reform," this agency has considered whether this proposed rule would have any retroactive effect. NHTSA concludes that this proposed rule would not have any retroactive effect. Judicial review of a rule based on this proposal may be obtained pursuant to 5 U.S.C. 702. That section does not require that a petition for reconsideration be filed prior to seeking judicial review.

F. Unfunded Mandates Reform Act of 1995

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than $100 million annually (adjusted for inflation with the base year of 1995). Before promulgating a rule for which a written assessment is needed, Section 205 of the UMRA generally requires NHTSA to identify and consider a reasonable number of regulatory alternatives and to adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of Section 205 do not apply when they are inconsistent with applicable law. Moreover, Section 205 allows NHTSA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the agency publishes with the final rule an explanation why that alternative was not adopted. Because a final rule based on this proposal would not require the expenditure of resources beyond $100 million annually, this action is not subject to the requirements of Sections 202 and 205 of the UMRA.

G. Plain Language

Executive Order 12866 and the President's memorandum of June 1, 1998, require each agency to write all rules in plain language. Application of the principles of plain language includes consideration of the following questions:

—Have we organized the material to suit the public's needs?

—Are the requirements in the proposed rule clearly stated?

—Does the proposed rule contain technical language or jargon that is unclear?

—Would a different format (grouping and order of sections, use of heading, paragraphing) make the rule easier to understand?

—Would more (but shorter) sections be better?

—Could we improve clarity by adding tables, lists, or diagrams?

—What else could we do to make the rule easier to understand?

If you have any responses to these questions, please include them in your comments on this document.

H. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995, a person is not required to respond to a collection of information by a Federal agency unless the collection displays a valid OMB control number. Part 594 includes collections of information for which NHTSA has obtained OMB Clearance No. 2127–0002, a consolidated collection of information for "Importation of Vehicles and Equipment Subject to the Federal Motor Vehicle Safety, Bumper and Theft Prevention Standards," approved through 11/30/2010. This proposed rule, if made final, would not affect the burden hours associated with Clearance No. 2127–0002 because we are proposing only to adjust the fees associated with participating in the registered importer program. These proposed new fees will not impose new collection of information requirements or otherwise affect the scope of the program.

I. Executive Order 13045

Executive Order 13045 applies to any rule that (1) is determined to be "economically significant" as defined under E.O. 12866, and (2) concerns an environmental, health, or safety risk that NHTSA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, we must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned rule is preferable to other potentially effective and reasonably feasible alternatives considered by us. This rulemaking is not economically significant and does not concern an environmental, health, or safety risk.

J. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272) directs NHTSA to use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies, such as the Society of Automotive Engineers (SAE). The NTTAA directs the agency to provide Congress, through the OMB, explanations when we decide not to use available and applicable voluntary consensus standards.

In this proposed rule, we propose to adjust the fees associated with the registered importer program. We propose no substantive changes to the program nor do we propose any technical standards. For these reasons, Section 12(d) of the NTTAA would not apply.

K. Comments

How do I prepare and submit comments?

Your comments must be written in English. To ensure that your comments are correctly filed in the Docket, please include the docket number of this document in your comments.

Your comments must not be more than 15 pages long (49 CFR 553.21). We established this limit to encourage you to write your primary comments in a concise fashion. However, you may attach necessary additional documents to your comments. There is no limit on the length of the attachments.

Please submit two copies of your comments, including the attachments, to Docket Management at the beginning of this document, under **ADDRESSES**.

How can I be sure that my comments were received?

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

How do I submit confidential business information?

If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the address given at the beginning of this document under **FOR FURTHER INFORMATION CONTACT**. In addition, you should submit two copies from which you have deleted the claimed confidential business information, to Docket Management at the address given at the beginning of this document under **ADDRESSES**. When you send a comment containing information claimed to be confidential business information, you should include a cover letter setting forth the information specified in our confidential business information regulation, 49 CFR part 512.

Will the agency consider late comments?

We will consider all comments that Docket Management receives before the close of business on the comment closing date indicated at the beginning of this notice under **DATES**. To the extent possible, we will also consider comments that Docket Management receives after that date. If Docket Management receives a comment too late for us to consider in developing a final rule, we will consider that comment as an informal suggestion for future rulemaking action.

How can I read the comments submitted by other people?

You may read the comments received by Docket Management at the address and times given near the beginning of this document under **ADDRESSES**.

You may also see the comments on the Internet. To read the comments on the Internet, take the following steps:

(1) Go to the Federal Docket Management System (FDMS) Web page *http://www.regulations.gov*.

(2) On that page, click on "search for dockets."

(3) On the next page (*http://www.regulations.gov/fdmspublic/component/main*), select NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION from the drop-down menu in the Agency field, enter the Docket ID number and title shown at the heading of this document, and select "RULEMAKING" from the drop-down menu in the Type field.

(4) After entering that information, click on "submit."

(5) The next page contains docket summary information for the docket you

selected. Click on the comments you wish to see. You may download the comments. Although the comments are imaged documents, instead of the word processing documents, the "pdf" versions of the documents are word searchable. Please note that even after the comment closing date, we will continue to file relevant information in the Docket as it becomes available. Further, some people may submit late comments. Accordingly, we recommend that you periodically search the Docket for new material.

L. Regulation Identifier Number (RIN)

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN that appears in the heading on the first page of this document to find this action in the Unified Agenda.

List of Subjects in 49 CFR Part 594

Imports, Motor vehicle safety, Motor vehicles.

In consideration of the foregoing, NHTSA proposes to amend 49 CFR part 594 as follows:

PART 594—SCHEDULE OF FEES AUTHORIZED BY 49 U.S.C. 30141

1. The authority citation for part 594 continues to read as follows:

Authority: 49 U.S.C. 30141, 31 U.S.C. 9701; delegation of authority at 49 CFR 1.50.

2. Amend § 594.6 by:

a. Revising the introductory text of paragraph (a);

b. Revising paragraph (b);

c. Revising the first sentence of paragraph (d);

d. Revising the second sentence of paragraph (h); and

e. Revising paragraph (i) to read as follows:

§ 594.6 Annual fee for administration of the registration program.

(a) Each person filing an application to be granted the status of a Registered Importer pursuant to part 592 of this chapter on or after October 1, 2010, must pay an annual fee of $795, as calculated below, based upon the direct and indirect costs attributable to:

* * * * *

(b) That portion of the initial annual fee attributable to the processing of the application for applications filed on and after October 1, 2010, is $320. The sum of $320, representing this portion, shall not be refundable if the application is denied or withdrawn.

* * * * *

(d) That portion of the initial annual fee attributable to the remaining activities of administering the registration program on and after October 1, 2010, is set forth in paragraph (i) of this section. * * *

* * * * *

(h) * * * This cost is $20.67 per man-hour for the period beginning October 1, 2010.

(i) Based upon the elements and indirect costs of paragraphs (f), (g), and (h) of this section, the component of the initial annual fee attributable to administration of the registration program, covering the period beginning October 1, 2010, is $475. When added to the costs of registration of $320, as set forth in paragraph (b) of this section, the costs per applicant to be recovered through the annual fee are $795. The annual renewal registration fee for the period beginning October 1, 2010, is $670.

3. Amend § 594.7 by revising the first sentence of paragraph (e) to read as follows:

§ 594.7 Fee for filing petitions for a determination whether a vehicle is eligible for importation.

* * * * *

(e) For petitions filed on and after October 1, 2010, the fee payable for seeking a determination under paragraph (a)(1) of this section is $175. * * *

* * * * *

4. Amend § 594.8 by revising the first sentence of paragraph (b) and the first sentence of paragraph (c) to read as follows:

§ 594.8 Fee for importing a vehicle pursuant to a determination by the Administrator.

* * * * *

(b) If a determination has been made pursuant to a petition, the fee for each vehicle is $158. * * *

(c) If a determination has been made on or after October 1, 2010, pursuant to the Administrator's initiative, the fee for each vehicle is $125. * * *

5. Amend § 594.9 by revising paragraphs (c) and (e) to read as follows:

§ 594.9 Fee for reimbursement of bond processing costs and costs for processing offers of cash deposits or obligations of the United States in lieu of sureties on bonds.

* * * * *

(c) The bond processing fee for each vehicle imported on and after October 1, 2010, for which a certificate of conformity is furnished, is $9.93.

* * * * *

(e) The fee for each vehicle imported on and after October 1, 2010, for which cash deposits or obligations of the United States are furnished in lieu of a conformance bond, is $514.00.

6. Amend § 594.10 by revising the first and third sentences of paragraph (d) to read as follows:

§ 594.10 Fee for review and processing of conformity certificate.

* * * * *

(d) The review and processing fee for each certificate of conformity submitted on and after October 1, 2010 is $17. * * * If NHTSA finds that the information in the entry or the certificate is incorrect, requiring further processing, the processing fee shall be $57.

Issued on: May 5, 2010.

Joseph Carra,

Acting Senior Associate Administrator for Vehicle Safety.

[FR Doc. 2010–10816 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 224

Docket No [0906221082–0122–02]

RIN 0648–XQ03

Endangered and Threatened Wildlife and Plants; Proposed Listing for the Largetooth Sawfish

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; 12–month petition finding; request for comments.

SUMMARY: We, NMFS, have determined that the largetooth sawfish (*Pristis perotteti*) qualifies as a "species" for listing as endangered or threatened under the Endangered Species Act (ESA), and propose listing the species as endangered. This proposed rule also constitutes the 12–month finding on the petition to list the largetooth sawfish throughout its range and designate critical habitat for the species. We are not proposing to designate critical habitat. This proposed rule to list the species as endangered is based on the status review of the species (NMFS, 2010), and the best available scientific and commercial data. We also solicit information that may be relevant to the status and conservation of the species.

DATES: Comments on this proposed rule must be received by July 6, 2010. Public hearing requests must be requested by June 21, 2010.

ADDRESSES: You may submit comments, identified by the RIN 0648–XQ03, by any of the following methods:

- Electronic Submissions: Submit all electronic public comments via the Federal eRulemaking Portal http// www.regulations.gov. Follow the instructions for submitting comments.
- Mail or hand-delivery: Assistant Regional Administrator for Protected Resources, NMFS, Southeast Regional Office, 263 13th Avenue South, St. Petersburg, FL 33701–5505.
- Facsimile (fax): 727 824 5309.

Instructions: No comments will be posted for public viewing until after the comment period. All comments received are considered part of the public record and will generally be posted to **HTTP://WWW.REGULATIONS.GOV**. All Personal Identifying Information (i.e., name, address, etc.) voluntarily submitted may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information. We will accept anonymous comments (enter "n/a" in the required fields if you wish to remain anonymous). Please provide electronic attachments using Microsoft Word, Excel, WordPerfect, or Adobe PDF file formats only. The proposed rule, the list of references, and the status review are also available electronically on the NMFS website at *http://sero.nmfs.noaa.gov/pr/Largetoothsawfish.htm*.

FOR FURTHER INFORMATION CONTACT: Shelley Norton, NMFS, Southeast Regional Office (727) 824–5312 or Dwayne Meadows, NMFS, Office of Protected Resources (301) 713–1401.

SUPPLEMENTARY INFORMATION:

Background

NMFS identified the largetooth sawfish (*Pristis perotteti*) as a candidate species in 1991 (56 FR 26797). It was removed from the list on July 14, 1997 (62 FR 37560), but was subsequently added to the revised list on June 23, 1999 (64 FR 33466).

On November 30, 1999, the Center for Marine Conservation (currently called Ocean Conservancy) petitioned us to list North American populations of largetooth and smalltooth sawfish as endangered under the ESA. The largetooth sawfish underwent a formal status review; however, we determined that the petitioner did not present substantial evidence that the petitioned action may be warranted for the largetooth sawfish (56 FR 12959; March 10, 2000). Specifically, there was no evidence that a North American population of largetooth sawfish existed. The largetooth sawfish was, however, maintained on the candidate species list and later transferred to the new Species of Concern list on April 15, 2004 (69 FR 19975).

On April 21, 2009, WildEarth Guardians petitioned the Secretary of Commerce to list the largetooth sawfish (*Pristis perotteti*) as endangered or threatened throughout its range and to designate critical habitat for this species. The petitioners also requested that we reconsider our previous March 10, 2000, negative finding on listing the North American population.

On July 29, 2009, we published a positive 90–day finding (74 FR 37671) announcing that the petition presented substantial scientific or commercial information indicating the petitioned action of listing the species may be warranted. We announced the initiation of a status review of the species and requested information to inform the agency's decision on whether to propose the species for ESA listing. Our Southeast Regional Office (SERO) issued two contracts in 2009 to the Florida Museum of Natural History to compile all confirmed records of largetooth sawfish in the U.S. and internationally. The status review (NMFS, 2010) was conducted by the Southeast Fisheries Science Center (SEFSC) and SERO staff. The status review is available electronically at *http://sero.nmfs.noaa.gov/pr/Largetoothsawfish.htm*.

Listing Determinations Under the Endangered Species Act

We are responsible for determining whether the largetooth sawfish (Pristis perotteti) is threatened or endangered under the ESA (16 U.S.C. 1531 *et seq.*). Section 4(b)(1)(A) of the ESA requires us to make listing determinations based solely on the best scientific and commercial data available after conducting a review of the status of the species and after taking into account efforts being made by any state or foreign nation to protect the species. We have followed a stepwise approach in making this listing determination for the largetooth sawfish (*Pristis perotteti*). As the first of five steps, we determined if the largetooth sawfish is a "species" under the ESA. To be considered for listing under the ESA, a group of organisms must constitute a "species," which is defined in section 3 of the ESA to include taxonomic species plus "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature."

Next we completed an extinction risk assessment to determine the status of the species, in particular whether it qualified for threatened or endangered status. Section 3 of the ESA defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range" and a threatened species as one "which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." For our extinction risk analysis we follow the general procedure of Wainwright and Cope (1999).

In the third step, we assessed the threats affecting the species status. We did this by following the guidance in the ESA that requires us to determine whether any species is endangered or threatened due to any of the following five factors: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence (section 4(a)(1)(A) through (E)). After analyzing the threats affecting the species, we re-evaluated the extinction status for the species to see if the status changed after the assessment of the five factors.

The fourth step involves an assessment of the efforts being made to protect the species to determine if these efforts are adequate to mitigate existing threats. We evaluated all conservation efforts using the criteria outlined in the joint NMFS and U.S. Fish and Wildlife Service (USFWS) Policy for Evaluating Conservation Efforts When Making Listing Decisions (PECE policy; 68 FR 15100; March 28, 2003) to determine their certainties of implementation and effectiveness. In the final step, we reassessed the preliminary extinction risk assessment conclusion from above to determine if the status of the species had changed based on the PECE analysis.

To evaluate the petitioner's request that NMFS designate critical habitat for the species, we followed the provisions in the ESA and in our implementing regulations (50 CFR 424). Of particular relevance in this case are provisions that NMFS cannot designate critical habitat in "foreign countries" or areas outside of U.S. jurisdiction and that NMFS shall not designate as critical habitat areas outside of the geographical area presently occupied by a species, unless

"a designation limited to its present range would be inadequate to ensure the conservation of the species" (50 CFR 424.12).

Largetooth Sawfish Natural History

Taxonomy

All sawfishes belong to two Genera (*Pristis* and *Anoxypristis*) in the Family Pristidae of the Order Pristiformes, and are classified as rays (Superorder Batoidea). Sawfishes are distinguished from other rays by the long snout (rostrum) with teeth on either side. Using molecular phylogeny (mitochondrial and nuclear gene analysis) paired with morphological characters, Faria (2007) distinguished seven extant species in the Pristidae. Sawfishes are classified into three morphological groups based on rostrum characteristics: largetooth, smalltooth, and knifetooth (Garman, 1913). Three species are currently classified in the largetooth "group," namely *P. perotteti*, *P. microdon*, and *P. pristis*, though difficulties associated with taxonomic identification are known (Faria, 2007; Wiley *et al.*, 2008, Wueringer *et al.*, 2009).

Pristis perotteti has been referred to by other names throughout its range. For instance, it has been called *P. antiquorum* (as cited in Bigelow and Schroeder 1953), *P. zephyreus* (Beebe and Tee-Van, 1941), *P. pristis* (McEachran and Fechhelm, 1998), or *P. microdon* (Garman, 1913; Fowler, 1941; Chirichigno and Cornejo, 2001; Vakily *et al.*, 2002). Some authors consider the eastern Pacific populations to be part of the species *P. microdon* (Garman, 1913; Fowler, 1941; Chirichigno and Cornejo, 2001), while others consider the eastern Pacific populations to be *P. perotteti* (Jordan and Evermann, 1896; refs. in Beebe and Tee-Van, 1941; Compagno and Cook, 1995; Camhi *et al.*, 1998; Cook *et al.*, 2005). The species are generally classified based upon location (i.e., *P. perotteti* occurs in the Atlantic, while *P. microdon* is in the Indo-Pacific), and there is some evidence that tooth counts may differ (Wueringer *et al.*, 2009). The conserved morphology of sawfishes makes identification difficult in some cases; most species are distinguished by the number of teeth on, and size of, the rostrum, placement of the first dorsal fin in relation to the pectoral fins, and shape of the lower lobe of the caudal fin. However, Faria (2007), used both mitochondrial and nuclear genes to investigate the population structure for all Pristidae species. The results from his study indicate that the "largetooth" species *P. microdon* and *P. perotteti* are separate species, and that *P. microdon* occurs in the Pacific, based on their mitochondrial deoxyribonucleic acid sequencing data and differences in external morphology (e.g., rostrum length and horizontal length of the eye). Based on the available taxonomic information on *P. perotteti*, we have determined the species' range is the eastern and western Atlantic Ocean.

The rostral tooth count per side for *P. perotteti* ranges from 14 to 22, and the space between the two most posterior teeth is between 4.5 and 8.5 percent of rostrum standard length (Faria, 2007). The origin of the first dorsal fin is forward of the pelvic fin origin, and the lower lobe of the caudal fin is distinct at all maturity stages. The largest known specimen was a 275.6 in (700 cm) total length (TL) female captured in northern Brazilian waters (Almeida, 1999). The only other sawfish species that overlaps in range with *P. perotteti* is the smalltooth sawfish, *P. pectinata*. These species are differentiated by the number of teeth on the rostrum (24 to 32 for P. pectinata, 22 to 29 for P. perotteti (Wiley *et al.*, 2008)), and the rostrum length of *P. pectinata* is shorter in relation to its body length.

Habitat Use and Migration

Largetooth sawfish are generally restricted to shallow (< 33 ft (10 m)) coastal, estuarine, and fresh waters, although they have been found at depths of up to 400 ft (122 m) in Lake Nicaragua. Largetooth sawfish are often found in brackish water near river mouths and large bays, preferring partially enclosed waters, lying in deeper holes and on bottoms of mud or muddy sand (Bigelow and Schroeder, 1953). This species, like the smalltooth sawfish, is highly mangrove-associated (Burgess *et al.*, 2009). While it is thought that they spend most of their time on the bottom, they are commonly observed swimming near the surface in the wild and in aquaria (Cook *et al.*, 2005). Largetooth sawfish move across salinity gradients freely and appear to have more physiological tolerance of freshwater than smalltooth sawfish (Bigelow and Schroeder, 1953; Dahl, 1971; Thorson, 1974; 1976a; all as cited in Thorson, 1982a).

Though their habitats once overlapped in the northern Gulf of Mexico, the largetooth sawfish historically had a more southerly range than the smalltooth sawfish, with what appears to be a more narrow seasonal migration pattern. Mature largetooth sawfish seasonally ventured into waters as far north as U.S. waters of the Gulf of Mexico.

Age and Growth

There have been no formal studies examining the age and growth of the largetooth sawfish, though Thorson's (1982a) study of the Lake Nicaragua population estimated size at birth to be 30 in (75 cm) and an early juvenile growth rate of 13.8 to 15.7 in (35 to 40 cm)/year. Thorson (1982a) also estimated age of maturity to be 10 years and size at maturity 118 in (300 cm). Preliminary vertebral growth ring analysis has extrapolated largetooth sawfish (*P. microdon*) lifespan to an estimated maximum age of 51 years (Peverell, 2006), and we determined this to be our best available estimate of largetooth sawfish lifespan.

Reproductive Biology

The reproductive method of sawfishes is most likely lecithotrophic viviparity; ova are internally fertilized, developing embryos receive nourishment from an external yolk sac, and the pups are born live after the yolk sac is absorbed. The only known reproductive study of largetooth sawfish was from Lake Nicaragua in the 1970s (Thorson, 1976a). This study found that litter size ranged from one to 13 pups, with an average of 7.3 pups per cycle. The gestation period was approximately five months, with a biennial reproductive cycle. After a five-month gestation period, young are born between October and December (Oetinger, 1978). Thorson (1976a) also found that both ovaries appeared to be functional, though the left seemed to be larger and carry more ova. Parturition occurred in October and November and size at birth was between 28.7 and 31.5 in (73 and 80 cm) TL. Thorson (1976a) reported that the smallest gravid female was 120 in (305 cm) TL, and based on this and other observations, reported the size at maturity is estimated to be around 118 in (300 cm) TL. The life history of largetooth sawfish, like most elasmobranchs, is characterized by slow growth, late maturity, and low fecundity, which generally contributes to a low intrinsic rate of increase.

Simpfendorfer (2000) estimated that largetooth sawfish in Lake Nicaragua had an intrinsic rate of increase (r) of 0.05 to 0.07 per year, with a population doubling time (tx2) of 10.3 to 13.6 years. Intrinsic rates of increase below 0.1 are considered low, making species particularly vulnerable to population decline (Musick *et al.*, 2000). The results indicated that if effective conservation measures are put in place for the species and its habitats, recovery to levels with little risk of extinction will take a few decades. Since Thorson

(1973) hypothesized that many Lake Nicaraguan sawfish may live their whole lives in the lake and Faria (2007) reported that the Lake Nicaraguan sawfish may be a separate stock, the life history parameters estimated by Simpfendorfer (2000) may be unique to that subpopulation or stock.

Diet and Feeding

No published information is available that quantitatively describes the diet of largetooth sawfish. Bigelow and Schroeder (1953) reported that, in general, sawfish subsist on the most abundant small schooling fishes in the area, such as mullets and small clupeids. There is also some evidence of largetooth sawfish feeding on crustaceans and other small benthic organisms (Bigelow and Schroeder, 1953). In these cases, the rostrum may be used to stir up the bottom sediments to locate prey, and in the case of fish predation, the rostrum may be used to stun or wound the fish in a slashing movement (Bigelow and Schroeder, 1953).

Predation

While there is potential for competition between *P. perotteti* and *P. pectinata* due to their overlap in range and habitat types, there is no data to support this and differences in patterns of habitat use and salinity tolerance may adequately partition the niches of these species. Thorson (1970) speculated that the Lake Nicaragua population may have also competed with the bull shark, *Carcharhinus leucas*, as both were quite prevalent (Thorson, 1970); however, both species have since declined to the point of near extirpation. A *Pristis sp.* has been documented within the stomach of a bottlenose dolphin near Bermuda (Bigelow and Schroeder, 1953), in the stomach of a bull shark (*C. leucas*) in Australia (Thorburn *et al.*, 2004), and a juvenile smalltooth sawfish was captured with fresh bite marks from what appears to be a bull shark (Tonya Wiley, pers. comm., 2009). The International Union for Conservation of Nature (IUCN) Red List for the largetooth sawfish also states that crocodiles prey on the species (Charvet-Almeida *et al.*, 2007.

Distribution and Abundance

Historically, *P. perotteti* are thought to inhabit warm temperate to tropical marine waters in the eastern and western Atlantic and Caribbean. In the western Atlantic, P. perotteti occurred from the Caribbean and Gulf of Mexico south through Brazil, and in the United States, largetooth sawfish were reported in the Gulf of Mexico, mainly along the Texas coast and east into Florida waters (Burgess and Curtis, 2003; Burgess *et al.*, 2009). Burgess *et al.* (2009) also state that, based on the evidence, the species rarely occurred in Florida waters and that nearly all records of largetooth sawfish encountered in U.S. waters were limited to the Texas coast. In the eastern Atlantic, *P. perotteti* historically occurred from Spain through Angola.

Currently, *P. perotteti* are thought to primarily occur in freshwater habitats in Central (includes Mexico) and South America and West Africa. In Atlantic drainages, largetooth sawfish have been found in freshwater at least 833 miles (1,340 km) from the ocean in the Amazon River system (Manacapuru, Brazil), as well as in Lake Nicaragua and the San Juan River; the Rio Coco, on the border of Nicaragua and Honduras; Rio Patuca, Honduras; Lago de Izabal, Rio Motagua, and Rio Dulce, Guatemala; the Belize River, Belize; Mexican streams that flow into the Gulf of Mexico; Las Lagunas Del Tortuguero, Rio Parismina, Rio Pacuare, and Rio Matina, Costa Rica; Rio San Juan and the Magdalena River, Colombia; the Falm River in Mali and Senegal; the Saloum River, Senegal; coastal rivers in Gambia; and the Geba River, Guinea-Bissau (Thorson, 1974; 1982b; Castro-Aguirre, 1978 as cited in Thorson, 1982b; Compagno and Cook, 1995; C. Scharpf and M. McDavitt, pers. comm., as cited in Cook *et al.*, 2005).

The United States

Although the first confirmed record of a U.S. largetooth sawfish was from "the Gulf of Mexico" in 1878 (Burgess *et al.*, 2009), they were likely present prior to this time period. Sawfish encounters were reported in the entire Gulf of Mexico in the early popular literature of the late 1800s but the similarities between the smalltooth and largetooth sawfishes limited the ability of non-specialists to discriminate between the two species. Because of this, there are no conclusive data available for largetooth sawfish abundance before fishing and other anthropogenic pressures began to affect their distribution. Recreational fishers in Texas began targeting prize fishes, including large elasmobranchs such as sawfishes, in the 1930s. Photographs taken of these catches were favored in the print media, allowing Burgess *et al.* (2009) to identify 33 largetooth sawfish in Texas.

Though reported in the United States, it appears that *P. perotteti* was never abundant, with approximately 39 confirmed records (33 in Texas) from 1910 through 1961, and no confirmed sightings in the years since (Burgess *et al.*, 2009). A 1963 newspaper article reporting a shrimp trawler off the coast of Texas taking a "broadbill sawfish" may refer to a largetooth sawfish (Burgess *et al.*, 2009). One specimen was reported between 1916 and 1919 in Louisiana. The capture location and identification as a largetooth sawfish species "presumably from Alabama" was catalogued at the University of Alabama but could not be verified (Burgess *et al.*, 2009). Four individuals from Florida were noted between 1910 and 1960 (Burgess *et al.*, 2009). Two of the reports in Florida were identified by elasmobranch researcher Stewart Springer by rostral tooth counts: one from Key West (1941) and another from Port Salerno (Baughman, 1943; Bigelow and Schroeder, 1953). Port Salerno is on the east coast of Florida, making this capture the only reported largetooth sawfish outside of the Gulf of Mexico in the U.S. Another specimen from south Florida was collected by the American Museum of Natural History in 1910. The final record for *P. perotteti* in Florida was recorded in the Springer and Woodburn (1960) study of Tampa Bay fishes. The dried specimen was on display at the Sea-Orama in the city of Clearwater Beach, but the identification was not verified, and the size of the specimen (Burgess *et al.*, 2009) was much smaller than any other individual captured in U.S. waters. With this exception, all largetooth sawfish captured in the U.S. were 14 feet (4.3 m) in length or larger.

In Texas, largetooth sawfish were primarily found in three regions: Padre Island-Laguna Madre, Corpus Christi-Port Aransas, and Galveston-Freeport (Burgess *et al.*, 2009). Most were caught from 1929 through 1957, though some records may have been duplicated (Baughman, 1943). Ten largetooth sawfish were encountered in the Corpus Christi-Port Aransas region, from 1917 to 1961, though again duplication of records is possible. The highest number of records is from the northeast Texas coast (Galveston) and the lowest number from near the Texas-Mexico border (Padre Island), corresponding to the historical freshwater inflow patterns of the region (Longley, 1994). That is, sighting frequency is positively correlated with higher freshwater flow discharge. While it is likely that the freshwater affinity of this species, especially in comparison to the smalltooth sawfish, attracted the largetooth sawfish to these high outflow areas, these numbers may also be an artifact of higher fishing effort or likelihood of reporting in that area.

Burgess *et al.* (2009) report captures of largetooth sawfish in Texas were primarily in shallow inshore waters and

the majority (65 percent) of those captures noted were taken from fisheries using rod and reel gears. Additionally, shrimp nets (reported as shrimp seines, shrimp net, and shrimp trawls) are the gear type associated with approximately 25 percent of all captures. Where size data could be determined, all largetooth sawfish caught in Texas were greater than 16 ft (4.88 m) TL. Burgess *et al.* (2009) report all largetooth sawfish found in U.S. waters were large (>14 ft (4.3 m)) and were primarily encountered during periods of warm water (May through October), suggesting that adults of this species mainly utilized Texas waters in the summer (but data on month of capture only exist for 10 records).

The last confirmed record of *P. perotteti* in U.S. waters was from Port Aransas, Texas on June 24, 1961. The last records for other Gulf of Mexico states include Florida in 1941 and Louisiana in 1917. No records of largetooth sawfish were found from Mississippi, and, as stated previously, the one Alabama specimen could not be verified.

The Caribbean, Central America, and Northern South America

Only 33 confirmed records of P. perotteti exist for this region outside of Costa Rica and Nicaragua (Burgess *et al.*, 2009). The lack of data likely stems from several factors, including confusion or ambiguity of identification with smalltooth sawfish and the lack of scientific surveys and popular reports during the time of highest abundance. In total, 5 largetooth sawfish records were from Mexico, 5 from Guatemala, 1 from Honduras, 483 from Nicaragua, 37 from Costa Rica, 7 from Colombia, 6 from Venezuela, 1 from Guyana, 5 from Suriname, 1 from French Guiana, and 1 from Trinidad. Length data were not available for most of these specimens.

Of the known Mexican largetooth sawfish, four were from the southwestern Gulf of Mexico (Tamaulipas, Veracruz, Tabasco, and Campeche), while one was captured at the northeastern tip of the Yucatan Peninsula (Quintana Roo). The mature (17.7 ft (5.4 m in total length), 1764 lbs (800 kg)) Yucatan individual was captured in 1997, which is the northernmost record in recent history. It appears that the last records in the Mexican Gulf of Mexico were prior to 1978, and Caribbean records are very sparse.

No encounters could be substantiated in Belize (Burgess *et al.*, 2009). All five Guatemalan largetooth sawfish were from a survey of Lake Izabal between 1946 and 1947, and sawfishes were reported to be important inland fishes (Saunders *et al.*, 1950). Though reported by Thorson *et al.* (1966a; 1966b) to be common throughout the area, a claim which was mirrored by local fishers at the time, there are no recent reports of encounters with sawfishes in Guatemala. The lone largetooth sawfish reported from Honduras was acquired from that country, but the true origin of the rostrum and the date of capture could not be confirmed.

The vast majority of *P. perotteti* records from Costa Rica (34 of 37) and Nicaragua (397 of 483) stem from Thorson's (1982a; 1982b) years of work on the Lake Nicaragua-Rio San Juan system. The San Juan River originates at Lake Nicaragua and runs along the Nicaragua-Costa Rica border until it reaches the Caribbean slightly south of the Nicaraguan border; therefore, movement between the countries was likely. Sawfish were noted in Nicaragua as early as 1529 by a Spanish chronicler (Gill and Bransford, 1877). This species was also reported in Nicaragua by Meek (1907), Regan (1908), Marden (1944), Bigelow and Schroeder (1953), Hagberg (1968), and Baez (1980a; 1980b). A commercial fishery for the largetooth sawfish that began in earnest around 1970 quickly decimated the Lake Nicaragua population (Thorson, 1982a). Low-level sustenance fishing for this species was common before this time, but the Nicaraguan government helped to establish a processing plant in 1970, which processed and sold the meat, fins, and rostra in an efficient manner. In the 1970s, an American supermarket chain (A&P) produced advertisements in their Ohio, Pennsylvania, and Illinois chains which included "Fish Features" listing "Sierra Steaks" using the Spanish name for sawfish, *pez sierra*, as a fresh fish available in their stores (The Times Recorder, 1975). By 1981, Thorson (1982a) was unable to locate a single live specimen. Thorson (1982a) documented that within a decade the commercial largetooth sawfish fishery had removed the species from shallow water habitats within Lake Nicaragua. The species was relegated to deep water "pockets" remaining in Lake Nicaragua. Commercial fishing for largetooth sawfish in Lake Nicaragua was banned in 2006, but the species is still caught incidentally by fishers netting for other species (McDavitt, 2002). A Lake Nicaraguan fisherman reported that he encounters a few sawfish annually, nowadays (McDavitt, 2002). There are no known Nicaraguan records of the largetooth sawfish outside of the Lake Nicaragua-Rio San Juan-Rio Colorado system (Burgess *et al.*, 2009).

Bussing (2002) indicated that this species was known to inhabit the Rio Tempisque and tributaries of the San Juan basin in Costa Rica. Three occurrences in that river were found in internet searches, one being a 200 lb (90.7–kg) specimen caught recreationally (Burgess *et al.*, 2009). In Colombia, the Magdalena River estuary was the primary source for largetooth sawfish encounters from the 1940s (Miles, 1945), while other records originated from the Bahia de Cartagena and Isla de Salamanca (both marine), and Rio Sinu (freshwater) from the 1960s through the 1980s (Dahl, 1964; 1971; Frank and Rodriguez, 1976; Alvarez and Blanco, 1985). Scientists in the country reported that there have been no sightings of this species in Colombia for about 10 years (Burgess *et al.*, 2009).

Though thought to have once been abundant in some areas of Venezuela (Cervignon, 1966a; 1966b), the last of the four confirmed records of P. perotteti from that country was from 1962. The single records from Guyana, French Guiana, and Trinidad appear to be from the late 1800s and early 1900s. Of the five Suriname accounts, the latest was collected in 1962.

Brazil

The largetooth sawfish was assessed as critically endangered in Brazil by Charvet-Almeida and Faria (2008). A total of 139 reports are available for this species (Burgess *et al.*, 2009), some from as recently as 2009. Most of the records for which location is known originated in the state of Amazonas (12), which encompasses the middle section of the Amazon River basin along with the confluence of the Rio Negro and Rio Solimoes (in the state of Manaus). The other known locations are from the states of Rio Grande do Norte, Sergipe, Bahia, Espirito Santo, Rio de Janeiro, and Sao Paulo (1 record each), Para (7 records), and Maranhao (3 records). Para contains the estuary and lower reaches of the Amazon River, and Maranhao is just southeast of Para. Anectodal reports from fishers indicate that they are also caught in Amapa, which is the northernmost state in Brazil (Charvet-Almeida and Faria, 2008).

The Amazon River basin and adjacent waters are traditionally the most abundant known area for largetooth sawfish in Brazil (Bates, 1964; Marlier, 1967; Furneau, 1969); however, scientific collection and fisheries data for this region are very limited, both historically and recently. Sawfishes are captured as bycatch in artisanal and commercial fisheries in northern Brazil (Charvet-Almeida, 2002). Most historic records of largetooth sawfish in the Amazon River (Amazonia) predate 1974.

Known lengths ranged from 4.9 to 8.2 ft (1.5 to 2.5 m) in total length. Mathew McDavitt (pers. comm., 2010) notes there is anecdotal evidence that P. perotteti is currently being targeted in Brazil for the lucrative Chinese shark fin trade. A recent popular guide in China for dried seafood products provides descriptions of a dozen or so popular shark fin categories. Based on photographs and descriptions, the category *huang jiao* (literally: "yellow-glue") comes from *Pristis* sawfishes, the trade name deriving from its beige color and the especially copious gelatine it produces when cooked. This Chinese dried seafood book gives the current sources for *huang jiao* fin, noting that the supply from Brazil is favored nowadays due to its comparatively large size.

The Brazilian sawfish populations, which include both *P. perotteti* and *P. pectinata*, are found in this region but are almost exclusively of the largetooth species, are presumably large and abundant, compared to those captured in other localities, due to the fact that sawfishes have not yet been extirpated in Brazilian waters to the extent that they have been elsewhere. Presumably both species are caught and sold. No quantification of the exact species or number of captured or sold sawfishes is currently available, though Charvet-Almeida and Faria (2008) reported that as many as 1500 small and medium rostra and 180 large rostra were sold each year in Para alone.

The two most recent largetooth encounters in Brazil were from Maranhao, one caught by a fisher in 1998 and another in 2009. The latter was a gravid female estimated to be 7 m TL (Burgess *et al.*, 2009). Earlier reports of largetooth sawfish in Maranhao were mostly from the 1980s and 90s (Lessa, 1986; Martins-Juras *et al.*, 1987; Stride and Batista, 1992; Menni and Lessa, 1998; and Lessa *et al.*, 1999). Sawfish are likely caught incidentally by shark fishers in this state and landed for their saws (Almeida *et al.*, 2006).

Records of largetooth sawfish in each of the states south of Maranhao are limited to one each, and the dates of capture are largely unknown, though most appear to be from the nineteenth century. An archeological site in Sao Paulo yielded tooled *P. perotteti* rostral teeth, though whether they came from locally caught animals, or were traded from the north is unknown. Charvet-Almeida and Faria (2008) concluded that largetooth sawfish are most likely extirpated in most of the states south of Maranhao.

West Coast of Africa

Historical records indicate that largetooth sawfish were once relatively common in the coastal estuaries of West Africa. Verified records exist from Senegal (1841 to 1902), Gambia (1885 to 1909), Guinea-Bissau (1912), Republic of Guinea (1965), Sierra Leone (date unknown), Liberia (1927), Cote d'Ivoire (1881 to 1923), Congo (1951 to 1958), Democratic Republic of the Congo (1951 to 1959), and Angola (1951) (Burgess *et al.*, 2009). Most records, however, lacked species identification and locality data and may have been confused taxonomically with other sawfish species that also occur in the area. Unpublished notes from a 1950s survey detail 12 *P. perotteti* from Mauritania, Senegal, Guinea, Cote d'Ivoire, and Nigeria, ranging in size from 35 through 276 in (89 through 700 cm) in total length (Burgess *et al.*, 2009).

A more recent status review by Ballouard *et al.* (2006) reported that sawfishes, including the largetooth sawfish, were once common from Mauritania to the Republic of Guinea, but are now rarely captured or encountered. According to this report, the range of sawfishes has decreased to the Bissagos Archipelago (Guinea Bissau). The most recent sawfish encounters outside Guinea Bissau were in the 1990s in Mauritania, Senegal, Gambia, and the Republic of Guinea. The most recent documented *P. perotteti* capture was from 2005 in Nord de Caravela (Guinea Bissau), along with anecdotal accounts from fishers of captures off of two islands in the same area (Burgess *et al.*, 2009).

Summary and Abundance

As we document above, the range of the largetooth sawfish has contracted significantly on both sides of the Atlantic. Although no time-series abundance data exists to quantify the extent of the decline of the species throughout its range, we believe that with the substantial number of commercial and recreational fisheries fishing along our U.S. coast, the uniqueness of the species morphology, and because media and internet sites are easily accessible to the public, largetooth sawfish encounters would be noteworthy and reported. Additionally, outreach efforts along the Gulf of Mexico coast in the U.S. for the smalltooth sawfish, which includes printed brochures and signage in local bait shops, marinas, and boat ramps on where and how to report sawfish encounters, should have increased the likelihood of reporting a largetooth sawfish encounter. Access to media and internet sites for reporting largetooth encounters outside the U.S. is most likely less common in some of the remote areas along the coasts of Central America, the Amazonian region of Brazil, and West Africa. Nevertheless, the apparent decrease of sightings over time suggests that the species has undergone severe declines in abundance throughout its range. Moreover, the decline in museum records, negative scientific survey results in the U.S. and Lake Nicaragua, and anecdotal reports from fisher people suggest the trend for the species is declining (Burgess *et al.*, 2009).

Species Determination

We first considered whether or not *P. perotteti* met the definition of "species" pursuant to section 3 of the ESA as described above. As stated in the taxonomy section above, after reviewing the best available scientific and commercial taxonomic data on the species, we determined that *P. perotteti* is a "species" and its range is the eastern and western Atlantic Ocean. The best available scientific and commercial data available also suggest *P. perotteti* has a tropical distribution in the eastern and western Atlantic Ocean and has been rare at latitudes higher than 12° N and 12° S during historic times.

Extinction Risk

We next considered the risk of extinction for *P. perotteti* to determine whether the species is threatened or endangered as defined above. No quantitative estimate of abundance for the species is known, so methods such as population viability analysis cannot be used to determine the risk of extinction for the species. Therefore, we must use a method to determine the risk of extinction using qualitative information.

Wainwright and Kope (1999) developed methods to assess the risk of extinction for U.S. West Coast salmon. Using the definitions of endangered and threatened in the ESA, they considered a variety of information to assess extinction risks, including abundance, trends, productivity, variability, genetic integrity, and other risks. Wainwright and Kope (1999) further consider the risk to small populations based on potential genetic effects or random demographic effects. They also considered habitat capacity to answer questions about the carrying capacity and whether or not the carrying capacity can ensure the populations viability. In assessing the risk of extinction using trends, productivity, and variability, Wainwright and Kope (1999) indicate that short and long-term trends in

abundance are the primary indicators of risk. Wainwright and Kope (1999) also assessed the effects of genetic integrity (introduced genotypes, interactions with hatchery fish, or anthropogenic selection) as it relates to evaluating the risk of extinction. Loss of fitness and loss of diversity can occur from random genetic effects and increase the risk of extinction for a species. Wainwright and Kope (1999) also evaluated other risks that are considered for salmonids (disease, predation, and changes in life history). These "other risks" can affect the sustainability of a population. The last factor that Wainwright and Kope (1999) evaluated is the risks associated with recent events. Changes in harvest rates, anthropogenic changes in the environment (habitat degradation or enhancement), or natural events (floods, volcanic eruptions) can pose a risk for species but may not have been adequately considered by looking at the other effects above when there is a time-lag in seeing the effect of recent events.

In addition to analyzing factors that may affect the risk of extinction for salmon, Wainwright and Kope (1999) developed a general quantitative evaluation method to assess both qualitative and quantitative evidence for the various risk factors. In this method, four of the major categories of extinction risk are scored. These four categories are: (1) abundance, (2) trend, productivity, and variability (TPV), (3) genetic integrity, and (4) "other risks". The risk categories are scored on a scale from 1 to 5. A score of 1 represents a very low risk and factors (single or multiple factors) scored at this level are unlikely to contribute significantly to risk of extinction. A score of 2 represents a low risk and single factors are unlikely to contribute to extinction alone, but in combination with other factors may be a concern. Scores of 3 represent moderate risk. These factors contribute significantly to long-term risk of extinction, but do not alone constitute a danger of extinction in the near future. Score values of 4 represent increasing risk. This rating indicates the present risk is low or moderate, but is likely to increase to high risk in the future (reflects the ESA definition of threatened). Scores of 5 represent the high risk rating. This factor indicates danger of extinction in the near future.

Professional biologists at SERO used Wainwright and Kope's (1999) methods to assess extinction risk for *P. perotteti*. For the abundance category the following were important considerations. Small-population risks for the species were considered to assess the risk of extinction. As detailed above, museum records, negative scientific survey results in the U.S. and Lake Nicaragua, and anecdotal reports from fisher people suggest the trend for the species is declining and population size is small. This species is also a K-selected animal which indicates they are usually successful at maintaining relatively small, persistent population sizes in relatively constant environments. We expect changes from random demographic effects are likely to be significant for the species since they are not able to respond rapidly to stochastic events. Information on the distribution of the species was also used as an indicator of abundance. The current distribution for the species is significantly reduced from its historic range. Thus, the existing population of *P. perotteti* does not adequately represent historic patterns of geographic distribution and this is considered a risk factor for the species. We could not determine the habitat capacity for the species since most of the habitat within the species range is located in foreign countries and we have poor data from those areas. Based on small population risks that could occur from demographic effects and the severe range constriction that has occurred, we assigned a rating of 5 (high-risk) for the abundance factor.

For the TPV category we considered that the data for the species indicates a declining trend in abundance. A directed fishery existed for the species in Lake Nicaragua but no longer exists today. Reports of the species in Lake Nicaragua are rare. Lack of reports of the species occurrence throughout most of its range, including the U.S. and southern Brazil, also indicates the species abundance is declining. Productivity rates are not known for the species but are expected to be declining (Shaffer 1981). Variations in freshwater and marine environments within the species range are difficult to assess. Since reports of the species are rare throughout its range, we expect productivity is low.

Genetic integrity was not evaluated because we do not have information on the loss of fitness and loss of genetic diversity for the species.

Our evaluation of the "other risk" factor considered information about the species life history characteristics, in particular that the species has slow growth rates, late maturation, low fecundity, and population recovery potential is considered limited. Based on this information, we scored the other risk category as a 3.

Using Wainwright and Kope (1999) methods to determine the risk of extinction for *P. perotteti*, we believe that abundance and distribution of *P. perotteti* is likely to continue to decline in the near future. Therefore, we have determined the current threats affecting the species will continue into the future and the species is currently in danger of extinction throughout all of its range.

Summary of Factors Affecting the Largetooth Sawfish

In this section, we consider the five factors specified in section 4(a)(1) of the ESA that we outlined as step XX of our listing determination process above.

The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Coastal habitat loss throughout the species' historical range is a contributing factor to the species decline. Coastal habitats in the southern U. S. Gulf of Mexico region have experienced and continue to experience losses due to urbanization. Wetland losses in the Gulf of Mexico region of the U.S. averages annual net losses of 60,000 acres (242.8 km2) of coastal and freshwater habitats from 1998 to 2004 (Stedman *et al.*, 2008). Although wetland restoration activities are ongoing in this region of the U.S., the losses significantly outweigh the gains (Stedman *et al.*, 2008). These losses have been attributed to commercial and residential development, port construction (dredging, blasting, and filling activities), construction of water control structures, modification to freshwater inflows (Rio Grande River in Texas), and gas and oil related activities. Riverine systems throughout the species' historical range have been altered or dammed. NOAA's Restoration Center is involved in ongoing coastal restoration activities throughout the Gulf of Mexico to restore coastal habitats. In spite of ongoing efforts to restore coastal habitats, coastal habitat losses will continue to occur.

The status of habitats within the current international range of the species is not well known, but with continued development and human population growth, negative effects on habitat are likely. Ruiz-Luna *et al.* (2008) acknowledge that deforestation of mangrove forests in Mexico has occurred from logging practices, construction of harbors, tourism, and aquaculture activities. In addition to deforestation, Ruiz-Luna *et al.* (2008) document that changes in the hydrological systems occurred with opening of the artificial canal in Cuautla, in the state of Nayarit. Valiela *et al.* (2001) report the total area of mangrove habitats in Brazil has decreased significantly (from 9,653 to 5,174 mi^2 (25,000 to 13,400 km^2)) from 1983 to 1997, with similar trends in

Guinnea-Bissau (1,838 to 959 mi^2 (4760 to 2484 km^2)) from 1953 to 1995. Habitat modification, including mangrove forest removal, is also likely in northern Brazil (Compagno *et al.*, 2006). The areas with the most rapid mangrove declines in the Americas included Venezuela, Mexico, Panama, the United States, and Brazil, while Senegal, Gambia, Sierra Leone, and Guinnea-Bissau showed the largest declines in western Africa (Ruiz-Luna *et al.* 2008). World-wide mangrove habitat loss was estimated to be 35 percent from 1980 to 2000 (Valiela *et al.*, 2001). There are unconfirmed reports of dam building activities on the Rio San Juan (Nicaragua) system, which could affect the movements of largetooth sawfish in that region. These threats cannot be directly related to the decline of the largetooth sawfish, but habitat loss is a known factor contributing to the decline of many freshwater and marine species, including the endangered U.S. distinct population segment (DPS) of smalltooth sawfish.

Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Commercial Fisheries

Sawfishes are very vulnerable to most fishing gears, and were historically caught by gillnets, trawls, seines, and lines (Compagno *et al.*, 2006). Most targeted catches of largetooth sawfish in Texas in the 1930s were from recreational hook and line, but they were also caught incidentally by shrimp trawls and seines (Burgess *et al.*, 2009). The Lake Nicaragua commercial fishery for largetooth sawfish consisted mostly of gillnet boats (Thorson, 1982a), and the commercial small coastal shark fishery in Brazil mainly utilizes gillnets and some handlines (Charvet-Almeida, 2002). Today the main threat to the largetooth sawfish is most likely from bycatch mortality, though sawfishes may be targeted opportunistically in some areas (Brazil) when the occasion arises. The current scarcity of sawfish may inhibit targeted fisheries that might occur in spite of international trade bans. However, if caught as bycatch they are most likely retained because of the value of their parts (e.g., the rostra, teeth, and fins). For example McDavitt's (2006) review of eBay sales of rostra is estimate a total of 200 rostra per year are sold, with a value of more than US $25,000.

Recreational Fisheries

Historically, recreational hook and line fishers targeted large elasmobranchs, including sawfishes, as trophies in Texas (Burgess *et al.*, 2009). Elsewhere in the U.S., abundance was likely never high enough for recreational fishers to encounter this species, much less target it. Because of its current distribution, which is mostly in developing nations, the largetooth sawfish is unlikely to be encountered by recreational fishers, with possible rare exceptions of tourists in these areas. There is no current information on the use of sawfish species for subsistence fishing, though it was noted in Brazil that the meat was often sold in local fish markets, while the other products (rostra, fins) were sold internationally (Charvet-Almeida, 2002).

Commercial Trade

There is very little information available about the trade of sawfish products in general, especially the largetooth sawfish. Largetooth sawfish were listed under Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 2007, which prohibits the commercial trade of largetooth sawfish parts (see Regulatory Mechanisms section below). In 2006, eBay banned the sale of smalltooth sawfish on their online auction site; however, the ban was not established for all sawfish species. A survey by McDavitt and Charvet-Almeida (2004) of sawfish rostra on eBay (before the ban) found that large rostra command prices of over $1,000 (US). An informal web search in November 2009 turned up several sawfish rostra for sale online to international buyers, some listed as "largetooth", along with sites selling cockfighting spurs made from South American sawfish teeth. It is apparent that largetooth and smalltooth sawfishes are still landed and sold illegally in northern Brazil (Charvet-Almeida pers. comm., 2009). It was previously observed that sawfish rostra from small individuals were sold to tourists, while damaged or cut rostra were used for local folk medicine (McDavitt and Charvet-Almeida, 2004). The larger rostra were sold in international cockfighting markets, as the rostral teeth were used as spurs. The larger rostra were also purchased by Asian shark fin buyers, most likely for medicine or curios. The proportion of largetooth sawfish in these markets is unknown, though as many as 180 large Pristis spp. rostra were sold per year at a single market in northern Brazil in the early 2000s (McDavitt and Charvet-Almeida, 2004). With little enforcement of regional and international laws, the practice of landing sawfishes may continue in Brazil, though the extent of any international trade since the CITES listing is unknown. No confirmed reports of *P. perotteti* in aquaria exist currently. No seizures of largetooth sawfish in international trade have occurred since its CITES listing (Sharon Lynn (USFWS) pers. comm.).

Scientific Use

The only published studies on life history and movements of the largetooth sawfish were conducted by Thorson in the 1970s and 1980s in Costa Rica and Nicaragua (Thorson, 1970; 1973; 1974; 1976a; 1976b; 1978; 1982a; 1982b; 1987; Thorson *et al.*, 1966a; 1966b). While many live largetooth sawfish were tagged by Thorson in this time period, it seems that most of the biological data were obtained from dead specimens that were purchased from commercial fishers. Most areas where the largetooth sawfish now occurs suffer from lack of biological sampling due to logistical difficulties and most likely low funding of research. However, there is some scientific information being collected by researchers in Brazil, mostly from fish markets, where sawfishes are illegally landed and sold.

Disease and Predation

No commercial or scientific data exists on diseases that may affect the largetooth sawfish and all information related to predation is listed above in the Largetooth Sawfish Natural History section. There is no evidence that unusual levels of disease or predation are a threat to the species.

The Inadequacy of Existing Regulatory Mechanisms

Protective measures covering trade in the largetooth sawfish (*Pristis perotteti*) are implemented internationally under Appendix I of CITES, making non-domestic trade of parts illegal. Additional Federal, state, and national laws in the United States, Nicaragua, and Brazil are designed to limit the harvest and sale of largetooth sawfish locally and internationally. The Nicaraguan government officially banned commercial fishing for largetooth sawfish in Lake Nicaragua in 2006. The Brazilian Environment Ministry listed *P. perotteti* in Appendix I of the "Instrucao Normativa numero 05," meaning that the species is considered endangered and therefore cannot be landed or sold. Enforcement of these regulations in Brazil and Nicaragua is difficult due to the length of the coastline, extensive internal waterways, lack of enforcement personnel, and the need for more efficient tools. Sawfish abundance within other parts of their current range is depleted so targeted fisheries are

unlikely; however, those caught as bycatch are probably kept due to their value. Thus, illegal foreign trade of sawfish parts may be ongoing in Nicaragua and Brazil and elsewhere in spite of the CITES listing and national laws due to lack of enforcement and the high value of sawfish parts.

The status of largetooth sawfish protection in western Africa is mostly unknown, though Guinnea-Bissau has created six official Protected Areas, which were established in 2005 (UNEP, 2008). Among these areas are several island chains and deltas with intertidal muddy sand banks and mangroves, which are ideal sawfish habitat. Nevertheless, existing regulations in this part of the world may be inadequate to protect and restore populations of largetooth sawfish.

Though not currently found in U.S. waters, existing regulations and measures put in place to protect the smalltooth sawfish could also benefit the largetooth sawfish, should it return into the northern most extent of its historical range in North America. The U.S. DPS of smalltooth sawfish (*Pristis pectinata*) was listed as endangered on April 1, 2003. Both the smalltooth and largetooth sawfish are susceptible to similar threats (e.g., bycatch in various fisheries and habitat loss) so protections for the smalltooth sawfish will benefit the largetooth sawfish. In response to the listing of the U.S. DPS of smalltooth sawfish, Texas implemented a ban on harvest of largetooth sawfish because of the possibility of misidentification. The trading of any largetooth sawfish parts is banned by state laws in both Florida and Louisiana. Additionally, Florida and Texas do not allow gillnet fishing in state waters less than 9 miles (14.5 km) from shore, and Alabama restricts gillnet fishing within less than 3.5 miles (5.6 km) from shore.

In summary, the high value of sawfish parts, weak enforcement, and lack of adequate protections for largetooth sawfish habitat mean that existing regulations are inadequate to protect the species from further declines.

Other Natural or Manmade Factors Affecting its Continued Existence

Largetooth sawfish have slow growth rates, late maturity, a long life span, and low fecundity rates. The largetooth sawfish is a more k-selected type species, with an intrinsic rate of population increase below 1.0 (Simpfendorfer, 2000). K-selected animals are usually successful at maintaining relatively small, persistent population sizes in relatively constant environments. Conversely, they are not able to respond rapidly to additional sources of mortality, such as overexploitation and habitat degradation. Because of this, the risk of extinction remains high without effective conservation plans put into place.

Red tide may also be a human amplified factor that could affect the species. Red tide is caused by an increase of toxic, naturally occurring microscopic blooms of plankton and is a coastal phenomenon which is caused by environmental conditions. Factors that are especially favorable include warm surface temperatures, high nutrient content, low salinity, and calm seas. Rain followed by sunny weather in the summer months is often associated with red tide blooms. We do not have specific information on red tide effects to largetooth sawfish but we do have a report of a smalltooth sawfish that was found dead along the west coast of Florida during a red tide event (National Sawfish Encounter Database, 2009).

Summary of Findings

After considering the 5 factors above from Section 4(a)(1) of the ESA we determined that the species continues to be in danger of extinction throughout all of its range.

Protective Efforts

As a requirement of the ESA, current or future conservation efforts that have yet to be implemented or to show effectiveness to protect and recover largetooth sawfish must be evaluated under the PECE Policy (see above). This policy is designed to determine whether any conservation efforts that have been recently adopted or implemented or proposed, but not yet proven to be successful, will result in recovering the species to the point at which listing is not warranted or contribute to forming a basis for listing a species as threatened rather than endangered (68 FR 15101; March 28, 2003). The PECE policy established two basic criteria to be met before an action could be considered to help improve the conservation status of a species: (1) the certainty that the conservation efforts will be implemented, and (2) the certainty that the efforts will be effective.

Ongoing conservation efforts for the smalltooth sawfish may benefit the conservation of the largetooth sawfish if it returns to U.S. waters. The Smalltooth Sawfish Recovery Plan was finalized in 2009. The Smalltooth Sawfish Recovery Plan lays out specific guidelines for federal and state agencies to follow. Among the recovery plan's objectives are to minimize harm caused by human interactions and to protect and restore habitats. Since both species are susceptible to similar threats, implementation of the Smalltooth Sawfish Recovery Plan will provide conservation benefits for the largetooth sawfish if it returns to U.S. waters. Additionally, in 2010, NOAA will fund coastal restoration activities in Texas and Louisiana using appropriations from The American Recovery and Reinvestment Act of 2009, which restore habitats used by sawfish. Both of these projects meet the criteria of the PECE for certainty of implementation and effectiveness. However, we have determined that these conservation efforts will not alter the extinction risk of the species.

Proposed Determination

NMFS is responsible for determining whether the largetooth sawfish (Pristis perotteti) is threatened or endangered under the ESA (16 U.S.C. 1531 *et seq.*) Accordingly, we have followed a stepwise approach as outlined above in making this listing determination for the largetooth sawfish. We determined that *P. perotteti* is a valid species with a range in the eastern and western Atlantic Ocean. We then reviewed the status of the species and the threats to its status using the five-factor analysis described above. Next, we assessed efforts being made to protect the species, determining if these efforts are adequate to mitigate existing threats.

In summary, the largetooth sawfish (*P. perotteti*) faces ongoing threats from habitat alteration, bycatch, trade, and the inadequacy of existing regulatory mechanisms to address and reduce habitat alterations, bycatch, and trade. The species range has constricted so that it has not been seen in the U.S. since 1961. A similar range constriction is apparent at the southern extreme of the species' historical range. The species has not been reported from southern Brazil for almost at century. All of the threats attributed to the species decline are ongoing, except for the directed largetooth sawfish fishery in Lake Nicaragua. The Lake Nicaraguan fishery collapsed presumably when the sawfish population collapsed. These ongoing threats exist throughout the species current range (Central and South America and West Africa) and existing regulatory mechanisms in place are insufficient to protect the species from further decline. No current or proposed conservation activities will be enough to sufficiently improve the species status. Based on our review, therefore, we find that the species is in danger of extinction throughout all of its range and should be listed as endangered.

Effects of Listing

Conservation measures provided for species listed as endangered or threatened under the ESA include recovery actions (16 U.S.C. 1533(f)), Federal agency consultation requirements (16 U.S.C. 1536), and critical habitat designations, and prohibitions on taking (16 U.S.C. 1538). Recognition of the species' plight through listing promotes conservation actions by Federal and state agencies, foreign entities, private groups, and individuals. Should the proposed listing be made final, a recovery plan may be developed, unless such plan would not promote the conservation of the species.

Identifying Section 7 Consultation Requirements

Section 7(a)(2) of the ESA requires Federal agencies to consult with NMFS to ensure that activities authorized, funded, or carried out are not likely to jeopardize the continued existence of the species or destroy or adversely modify critical habitat. We anticipate few section 7 consultation requirements for Federal agencies given the species current distribution and abundance.

Critical Habitat

Critical habitat is defined in section 3 of the ESA (16 U.S.C. 1532(5)) as: (1) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon a determination that such areas are essential for the conservation of the species. "Conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the ESA is no longer necessary. Regulations require that we shall designate critical habitat in areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species (50 CFR 424.12 (e)).

Section 4(a)(3)(A) of the ESA (16 U.S.C. 1533(a)(3)(A)) requires that, to the extent prudent and determinable, critical habitat be designated concurrently with the listing of a species. Critical habitat shall not be designated in foreign countries or other areas outside U.S. jurisdiction (50 CFR 424.12 (h)).

The best available scientific and commercial data as discussed above identify the geographical area occupied by P. perotteti as Central and South America and West Africa. Since these areas are entirely outside U.S. jurisdiction, NMFS cannot designate critical habitat in the geographical area occupied by the species. NMFS can designate critical habitat in unoccupied areas if the area(s) are determined by the Secretary to be essential for the conservation of the species. Regulations at 50 CFR 424.12 (e) specify that we shall designate as critical habitat areas outside the geographical range presently occupied by the species only when the designation limited to its present range would be inadequate to ensure the conservation of the species.

The best available scientific and commercial information on the species does not indicate that U.S. waters provided any specific essential biological function other than general foraging opportunities for the species. All records of P. perotteti were larger animals (adults). No records of juveniles are documented in U.S. waters, which suggest the species was not using the area as a nursery. The majority of the reports of the species in U.S. waters suggest they were in the U.S. during the summer months when water temperatures were warmer. No reports of the species in U.S. waters suggest breeding aggregations were present. Based on the best available information we have not identified unoccupied area(s) that are currently essential to the conservation of the species. Therefore, no critical habitat designation is currently being proposed.

Take Prohibitions

Because we are proposing to list this species as endangered all of the take prohibitions of Section 9(a)(10) of the ESA of the act will apply. These include prohibitions against the import, export, use in foreign commerce, or "take" of the species. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." These prohibitions apply to all persons subject to the jurisdiction of the United States, including in the U.S. or on the high seas.

Service Policies on Endangered and Threatened Fish and Wildlife

On July 1, 1994, NMFS and USFWS published a series of policies regarding listings under the ESA, including a policy for peer review of scientific data (59 FR 34270; July 1, 1994), the Office of Management and Budget (2004) Bulletin on Peer Review, and a policy to identify, to the maximum extent possible, those activities that would or would not constitute a violation of section 9 of the ESA (59 FR 34272; July 1, 1994).

Role of Peer Review

The intent of the peer review policy is to ensure that listings are based on the best scientific and commercial data available. Prior to a final listing, NMFS formally solicits expert opinions and analyses on one or more specific questions or assumptions. This solicitation process may take place during a public comment period on any proposed rule or draft recovery plan, during the status review of a species under active consideration for listing, or at any other time deemed necessary to clarify a scientific question. The status review was peer reviewed by two elasmobranch experts in the field and an elasmobranch trade expert, with their substantive comments incorporated in the final status review.

Identification of Those Activities That Would Constitute a Violation of Section 9 of the ESA

The intent of this policy is to increase public awareness of the effect of this listing on proposed and ongoing activities within the species' range. NMFS will identify, to the extent known at the time of the final rule, specific activities that will not be considered likely to result in violation of section 9, as well as activities that will be considered likely to result in violation. Activities that NMFS believes could result in violation of section 9 prohibitions against ''take'' of the largetooth sawfish include, but are not limited to, the following: (1) importation, (2) exportation, (3) take, (4) sale, and (5) delivery that directly or indirectly affect endangered species, and (6) take any such species on the high seas. These prohibitions apply to all individuals, organizations, and agencies subject to U.S. jurisdiction.

References

A complete list of the references used in this proposed rule is available upon request (see **ADDRESSES**).

Classification

National Environmental Policy Act

The 1982 amendments to the ESA, in section 4(b)(1)(A), restrict the information that may be considered when assessing species for listing. Based on this limitation of criteria for a listing decision and the opinion in *Pacific Legal Foundation* v. *Andrus*, 675 F. 2d 825 (6th Cir. 1981), NMFS has

concluded that ESA listing actions are not subject to the environmental assessment requirements of the National Environmental Policy Act (NEPA) (See NOAA Administrative Order 216–6).

Executive Order 12866, Regulatory Flexibility Act and Paperwork Reduction Act

As noted in the Conference Report on the 1982 amendments to the ESA, economic impacts cannot be considered when assessing the status of a species. Therefore, the economic analysis requirements of the Regulatory Flexibility Act are not applicable to the listing process. In addition, this proposed rule is exempt from review under Executive Order 12866. This proposed rule does not contain a collection-of-information requirement for the purposes of the Paperwork Reduction Act.

Executive Order 13132, Federalism

In keeping with the intent of the Administration and Congress to provide continuing and meaningful dialogue on issues of mutual state and Federal interest, this proposed rule will be given to the relevant governmental agencies in each state in which the subject species historically occurred, and these agencies will be invited to comment.

International Relations

NMFS has conferred with the U.S. Department of State to ensure appropriate notice is given to foreign nations within the range of the species. As the process continues, NMFS intends to continue engaging in informal and formal contacts with the U.S. State Department, giving careful consideration to all written and oral comments received.

Public Comments Solicited

NMFS intends that any final action resulting from this proposal will be as accurate as possible and informed by the best available scientific and commercial information. Therefore, NMFS request comments or information from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule. NMFS particularly seek comments containing:

(1) Information concerning the location(s) of any sightings or captures of the species; and

(2) Information concerning the threats to the species; and

(3) Taxonomic information on the species; and

(4) Efforts being made to protect the species throughout its current range.

Public hearing requests must be requested by June 21, 2010.

List of Subjects in 50 CFR Part 224

Administrative practice and procedure, Endangered and threatened species, Exports, Imports, Reporting and record keeping requirements, Transportation.

Dated: April 30, 2010.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 224 is proposed to be amended as follows:

PART 224—ENDANGERED MARINE AND ANADROMOUS SPECIES

1. The authority citation for part 224 continues to read as follows:

Authority: 16 U.S.C. 1531–1543 and 16 U.S.C. 1361 *et seq.*

2. In § 224.101, the table in paragraph (a) is amended by adding an entry for "Largetooth Sawfish" at the end of the table to read as follows:

§ 224.101 Enumeration of endangered marine and threatened anadromous species.

* * * * *

(a)* * *

Species		Where Listed	Citation(s) for listing determination(s)	Citation(s) for critical habitat designation(s)
Common name	Scientific name			
* *	*	*	* *	*
Largetooth Sawfish	*Pristis perotteti*	Everywhere	[*Insert FEDERAL REGISTER citation and date when published as a final rule*]	NA
* *	*	*	* *	*

[FR Doc. 2010–10874 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–22–S

Notices

Federal Register

Vol. 75, No. 88

Friday, May 7, 2010

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Rural Utilities Service

RIN 0572–ZA01

Broadband Initiatives Program

AGENCY: Rural Utilities Service, Department of Agriculture.

ACTION: Request for proposals.

SUMMARY: The Rural Utilities Service (RUS) announced its general policy and application procedures for the second round of funding under the broadband initiatives (the Second Round NOFA), established pursuant to the American Recovery and Reinvestment Act of 2009 (Recovery Act) for the Broadband Initiatives Program (BIP), on January 22, 2010 at 74 FR 3820. In that Second Round NOFA, RUS announced the opening of a future window for specific grants for Satellite, Rural Library Broadband, and Technical Assistance, and that any requirements would be outlined in the Request for Proposals (RFP). This RFP outlines those requirements.

DATES: Applications for Satellite, Rural Library Broadband, and Technical Assistance Projects will be accepted from May 7, 2010, until June 7, 2010.

Application Submission: The application packages for all programs are available at *http://www.broadbandusa.gov.* Applications for Satellite, Rural Libraries Broadband, and Technical Assistance projects must be submitted in paper format by June 7, 2010.

Paper Format: Paper applications must include proof of mailing consisting of one of the following: (i) A legibly dated U.S. Postal Service postmark. Please note that the U.S. Postal Service does not uniformly provide a dated postmark. Before relying on this method, Applicants should check with their local post office; (ii) A legible mail receipt with the date of mailing stamped by the U.S. Postal Service; or (iii) A dated shipping label, invoice, or receipt from a commercial carrier. Neither of the following will be accepted as proof of mailing: A private metered postmark, nor a mail receipt that is not dated by the U.S. Postal Service.

Mailing Address: One original and one copy of the completed application must be mailed, shipped, or sent overnight express to: Broadband Initiatives Program, Rural Utilities Service, U.S. Department of Agriculture, 1400 Independence Avenue, SW., Stop 1599, Room 2868, Washington, DC 20250 or hand-delivered to: Broadband Initiatives Program, Rural Utilities Service, U.S. Department of Agriculture, 1400 Independence Avenue, SW., Room 2868, Washington, DC 20250.

Contact Information: For general inquiries, contact David J. Villano, Assistant Administrator Telecommunications Program, Rural Utilities Service, U.S. Department of Agriculture (USDA), email: *BroadbandUSA@usda.gov,* telephone: (877) 508–8364. For inquiries regarding BIP compliance requirements, including applicable federal rules and regulations protecting against fraud, waste and abuse, contact *bipcompliance@wdc.usda.gov*. You may obtain additional information regarding applications for BIP via the Internet at *http://www.broadbandusa.gov*.

Authority: This notice is issued pursuant to the American Recovery and Reinvestment Act of 2009, Pub. L. 111–5, 123 Stat. 115 (2009) and the Rural Electrification Act of 1936, 7 U.S.C. 901 *et seq.*

SUPPLEMENTARY INFORMATION:

Catalog of Federal Domestic Assistance (CFDA) Number: Broadband Initiatives Program (BIP)—10.787.

Additional Items in Supplementary Information

I. Overview: Describes the purposes of the Recovery Act and the changes in BIP from the First Round NOFA.

II. Definitions: Sets forth the key statutory terms and other terms.

III. Funding Opportunity Description: Describes funding categories, requirements, and the amount of funds available for each category.

IV. Eligibility Information: Establishes eligibility criteria, eligibility factors, eligible and ineligible costs, and other eligibility requirements.

V. Application and Submission Information: Provides information regarding how to apply, application materials, and the application process.

VI. Application Evaluation Criteria: Establishes the evaluation criteria for application review.

VII. Award Administration Information: Provides award notice information, administrative and national policy requirements, terms and conditions, and other reporting requirements for award recipients.

VIII. Other Information: Sets forth guidance on funding, compliance with various laws, confidentiality, discretionary awards, and authorized signatures.

I. Overview

On January 22, 2010, the Rural Utilities Service (RUS) published its Second Round NOFA at 74 FR 3820, identifying new funding opportunities for Satellite, Rural Library Broadband, and Technical Assistance projects. In that Second Round NOFA, the Agency also noted that more specific requirements would be outlined in a future Request for Proposals (RFP). This RFP details those requirements with respect to application contents, as well as eligible expenses under each funding opportunity. Generally, the following changes have been made to each funding opportunity:

Satellite

For Satellite projects, there have been no major changes to the information required in the application except for the proposed amount per subscriber that is requested in federal assistance ("Proposed Subscriber Amount"). This amount represents the Applicant's bid to provide the required terms of service, in addition to any other proposed terms, to any unserved premises in the Satellite Region. The eligible costs provision has correspondingly been modified to reflect that such costs will be reimbursed on the proposed subscriber amount agreed to by the Agency. How a successful Applicant applies the grant funds per subscriber shall be at its discretion. In addition, the requirement that an Applicant offer a reduced service package of at least 25 percent of its December 2009 published rates has been eliminated. Upon reflection, the Agency has determined that such a requirement may not accomplish the desired effect, given that some providers may already offer better rates than other discounted rates, and that such an aggressive discount may not be feasible. Moreover, imposition of the requirement would be unfair to existing companies given that new

entrants or consortiums would not have existing rates. As such, the Agency is eliminating the 25 percent discount requirement, but now requires that the cost of its Basic Service Package, as defined in this RFP, not exceed $50 per month.

The Agency will accept National Applications which cover at least six of the eight Satellite Regions, in addition to Regional Applications that cover one or more Satellite Regions. However, if an applicant chooses to submit a National Application, it must submit one national proposed subscriber amount, whereas Regional Applications may contain distinct regional proposed subscriber amounts in their regional break out. An applicant may submit both a National Application and a Regional Application covering the same Satellite Regions for consideration.

In addition, the Agency has determined that reaching hard to serve unserved rural premises may best be served by awarding more than one Regional or National applicant for the same Satellite Region, depending on the proposals it receives.

Rural Library Broadband

For Rural Library Broadband projects, there also have been no changes to the requirements of the application, but the scope of eligible costs has been amplified to encompass associated costs with hardware and software to connect the Rural Libraries. Connecting the Rural Library to a broadband network without the necessary equipment to that connection would not serve the purposes of the program.

Technical Assistance

For Technical Assistance projects, the requirements of the application have been clarified with respect to the objective of the plan. Moreover, Indian tribes are not required to receive a BIP or BTOP award in order to be eligible to receive a grant for Technical Assistance.

Eligible costs also have been modified to include up to five percent of pre-application expenses so that Applicants may adequately lay out their proposal in sufficient detail.

Rural Library Broadband and Technical Assistance

For both Rural Library Broadband and Technical Assistance projects, eligible entities have been amended to clarify that in addition to the Awardees under the First Round NOFA and Second Round NOFA, only Applicants for the Second Round NOFA that ultimately receive an Award under that NOFA will be considered for these projects. Given the timing of this RFP, all Awardees under the Second Round NOFA have not been determined. As such, Round Two Applicants that have not yet been notified of the status of their application may submit an application for Rural Library Broadband and Technical Assistance projects at their own risk.

Satellite, Rural Library Broadband and Technical Assistance

Some definitions have been added to effectuate the requirements of Satellite, Rural Library Broadband, and Technical Assistance projects.

Based on the number of estimated applicants the Agency expects to receive for all three projects, it has determined that the cost of developing an online intake system would not be an effective use of Agency resources. Therefore, all applications under this RFP must be submitted in paper format.

II. Definitions

The terms and conditions provided in this Request For Proposals (RFP) are applicable to, and for the purposes of, this RFP only. Unless otherwise provided in the award documents, all financial terms not defined herein shall have the meaning as defined by Generally Accepted Accounting Principles.

Administrator means the RUS Administrator, or the Administrator's designee.

Applicant means an entity requesting an award under this RFP, and where applicable, the First Round NOFA or Second Round NOFA.

Award means a grant made under this RFP.

Awardee means a grantee under this RFP, unless otherwise specified.

Basic Service Package means Satellite Broadband Service offered at no greater than $50 per month to the end user.

BIP means the Broadband Initiatives Program, administered by the RUS, under the Recovery Act.

Broadband means providing two-way data transmission with advertised speeds of at least 768 kilobits per second (kbps) downstream and at least 200 kbps upstream to end users, or providing sufficient capacity in a middle mile project to support the provision of broadband service to end users.

BTOP NOFA means the Notice of Funds Availability issued under the Broadband Telecommunications Opportunity Program (BTOP) administered by the National Telecommunications and Information Administration of the Department of Commerce and published in the **Federal Register** on January 22, 2010 at 75 FR 3792.

CALEA means the Communications Assistance for Law Enforcement Act, 47 U.S.C. 1001 *et seq.*

Commercial Service Package means the provision of Satellite Broadband Service at speeds of at least 2 megabits per second (Mbps) downstream and greater than 200 kbps upstream to end users.

Critical community facilities means public facilities that provide community services essential for supporting the safety, health, and well-being of residents, including, but not limited to, emergency response and other public safety activities, hospitals and clinics, libraries and schools.

Current ratio means the current assets divided by the current liabilities.

Economic life means the estimated useful service life of an asset as determined by RUS.

End-user equipment means, excluding desktop or laptop computers, computer hardware and software (including anti-virus, anti-spyware, and other security software), audio or video equipment, computer network components, telecommunications terminal equipment, inside wiring, interactive video equipment, or other facilities required for the provision and use of broadband transmission services.

Expanded Service Package means the provision of Satellite Broadband Service at speeds of at least 1.5 Mbps downstream and greater than 200 kbps upstream to end users.

First Round NOFA means the NOFA published in the **Federal Register,** Vol. 74, No. 130, Thursday, July 9, 2009 at FR 33104.

GAAP means generally accepted accounting principles.

Grant agreement means the agreement between RUS and the Awardee for grants awarded under this RFP, including any amendments thereto, available for review at *http://www.broadbandusa.gov*.

Grant documents mean the grant agreement and security documents between the RUS and the Awardee and any associated documents pertaining to the grant.

Grant funds mean federal funds provided pursuant to a grant made under this RFP.

Indian tribe means, as provided in section 4 of the Indian Self-Determination and Education Assistance Act, 25 U.S.C. 450b, any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the

Alaska Native Claims Settlement Act, 43 U.S.C.A. § 1601 *et seq.*, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

National Application shall mean a Satellite application covering at least six of the Satellite Regions, and shall be treated as a single application.

Proposed Subscriber Amount means, for a Satellite Project, the amount which the Applicant proposes to accept in federal assistance as payment in exchange for providing broadband service, on the terms as identified in its proposal and as required in this RFP, to each eligible unserved, rural premises.

RE Act means the "Rural Electrification Act of 1936," as amended (7 U.S.C. 901 *et seq.*).

Recovery Act means the American Recovery and Reinvestment Act of 2009, Public Law 111–5, 123 Stat. 115 (2009).

Region means either multi-jurisdictional areas, as proposed by an Applicant, within a state, territory, or Federally-designated tribal land or an area that crosses state, territory, or tribal boundaries.

Regional Application shall mean a Satellite application for one or more Satellite Regions, which shall be treated as a separate application for each of the Satellite Regions being applied for.

Rural area means any area, as confirmed by the latest decennial census of the Bureau of the Census, which is not located within: (1) A city, town, or incorporated area that has a population of greater than 20,000 inhabitants; or (2) an urbanized area contiguous and adjacent to a city or town that has a population of greater than 50,000 inhabitants. For purposes of the definition of rural area, an urbanized area means a densely populated territory as defined in the latest decennial census of the Bureau of the Census.

Rural Library means a library in a rural area.

RUS Accounting Requirements shall mean compliance with U.S. GAAP, acceptable to RUS, as well as compliance with the requirements of the applicable regulations: 7 CFR 3015, 3016, or 3019 or the system of accounts prescribed by RUS Bulletin 1770B–1.

Satellite Broadband Service means broadband that is delivered to the end user through a satellite based system and not an ancillary or terrestrial based system.

Satellite Project means any project to provide Satellite Broadband Service to unserved rural premises (including households, businesses, public safety entities, and critical community facilities).

Satellite Region means any of the eight regions available for a satellite project, identified in Section IV.C.1(a).

Second Round NOFA means the NOFA published in the **Federal Register,** Vol. 75, No. 14, Friday, January 22, 2010 at FR 3820.

Telecommunications terminal equipment means telecommunications equipment at the end of a circuit or path of a signal, including but not limited to facilities that receive or transmit over the air broadcast, satellite, and microwave, normally located on the premises of the end user, that interface with telecommunications transmission facilities, and that is used to modify, convert, encode, or otherwise prepare signals to be transmitted via such telecommunications facilities, or that is used to modify, reconvert, or carry signals received from such facilities, the purpose of which is to accomplish the goal for which the circuit or signal was established.

USDA Region means either multi-jurisdictional areas, as designated or defined by the Secretary of Agriculture, within a state, territory, or Federally-designated tribal land or an area that crosses state, territory, or tribal boundaries.

III. Funding Opportunity Description

A. Funding Categories

1. Satellite Projects

Applicants must propose to serve only unserved rural premises in any of the Satellite Regions listed in Section IV.C.1(a) of this RFP. Applicants may propose to serve more than one Satellite Region by submitting a Regional Application which is broken out for each Satellite Region it proposes to serve, and/or by submitting a National Application covering at least six of the Satellite Regions. National Applications, however, must contain only one national proposed subscriber amount, whereas Regional Applications broken out for each Satellite Region may contain distinct proposed subscriber amounts. One or two Applicants may be selected to serve each Satellite Region. Funds will be disbursed among the eight Satellite Regions listed in Section IV.C.1(a), as the Agency determines is necessary to promote geographic diversity of funding throughout each Satellite Region, and funds will be divided within the same Satellite Region, if two awardees are chosen, based on the strength of each proposal.

At a minimum, an application for Satellite projects must commit to providing no cost customer premise equipment CPE (including no installation, activation, or other fees) for all packages offered. In addition, the Basic Service Package must be offered at a rate no higher than $50 per month for at least one year with no length of service requirements, unless the Applicant offers the Basic Service Package at less than $40 per month. In such case, the Applicant may propose a one-year contract requirement, if an unconditional 30-day cancellation clause is provided. There are no length of service requirements or price requirements for Expanded Service Packages or Commercial Service Packages.

If no applications are received for a given Satellite Region, the Administrator may request applications for that Satellite Region from existing Applicants under this RFP. Moreover, if the Administrator determines that no applications are acceptable for a Satellite Region, the Agency may request Applicants that submitted applications for that Satellite Region to submit amended applications. If the Agency is still unable to receive an acceptable application from such Applicants, then the Administrator reserves the right to request applications from Applicants for other Satellite Regions, or not to award the Satellite Region.

2. Rural Library Broadband Grants

Awardees under the First Round NOFA or Second Round NOFA, or Applicants under the Second Round NOFA may submit a grant request for providing a broadband connection to any rural library in their proposed funded service area that was constructed or to be constructed with funding from USDA's Community Facilities program of the Rural Housing Service and that is without broadband service. The grant request must include the broadband connection to such rural library. Such costs need not have been addressed in the original application submitted under the First Round NOFA or Second Round NOFA. If the costs were addressed, however, in the original application, the Applicant may request that such costs be converted to grant funds. Rural libraries that already have a broadband connection are ineligible for this program.

In addition to the connection to these unserved rural libraries, Applicants may also request funds to accommodate up to 10 workstations, as well as critical End-user Equipment and Telecommunications Terminal Equipment, as defined herein, to ensure that broadband service is not only

available, but can be used by the residents of the community to be served.

If the Applicant will not be solely responsible for grant assets located in the rural library, then the rural library must be a co-applicant for the grant.

3. Technical Assistance Grants

Awardees under the First Round NOFA or Second Round NOFA, Applicants under the Second Round NOFA, or Indian Tribes may submit an additional grant request for funding regional broadband development planning activities associated with regions or USDA Regions in rural areas. In order to leverage these grants with the Rural Business Opportunity Grants (RBOG) of USDA's Rural Business—Cooperative Service (RBS), *see* 75 FR 15406 (Mar. 29, 2010), RUS is likewise encouraging applications that are designed to help rural areas in the region create wealth so that they are self-sustaining, repopulating, and thriving economically. Applicants must specifically address the following RBOG key strategy: *Use of broadband and other critical infrastructure as a strategy to facilitate local entrepreneurship and expansion of market opportunities for small businesses.* Similar to the RBOG program, RUS also seeks applications that attempt to promote broadband strategies through a regional approach. Regions can be either multi-jurisdictional areas within a state, territory, or Federally-designated tribal land or can cross state, territory, or tribal boundaries, either defined by the applicant or defined or designated by the Secretary.

Regional applications should focus on the broadband-related outcomes that promote economic integration and cohesion of their self-defined geographic area. This approach is intended to combine the resources of the Agency with those of State and local governments, educational institutions, and the private and nonprofit sectors to implement regional economic and community development strategies. In addition, in order to effectively leverage other resources, Applicants should identify other related programs such as those of the Department of Transportation, Health and Human Services, Education, Homeland Security, the Federal Communications Commission (FCC), Telemedicine Program of the Indian Health Service, and similar State and local programs. For example, a local community with limited broadband connectivity has proposed an industrial park to bring new jobs to the community. A regional proposal could include the proposal for a new industrial park identifying and leveraging State and Federal Department of Transportation resources for road construction, broadband infrastructure loans and grant from the RUS, and resources from Health and Human for a regional hospital and business models to attract new businesses to the area. The goal being to develop comprehensive plans that foster collaboration and leveraging of resources between local, state and federal agencies and focus on wealth and job creation through the use of broadband. Regional broadband development strategy proposals may be used by Awardees and regionally-based community leaders to support applications for other local, federal and state programs in order to meet the overall objectives of the plan.

By fostering the development of rigorous regional broadband strategies, RUS anticipates that Technical Assistance Awardees will also be able to submit more focused applications in the future to RUS' Infrastructure Telecommunications, Rural Broadband Access, Community-Oriented Connectivity Broadband, and Distance Learning and Telemedicine grant and loan programs. As such, Applicants are encouraged to consider the creation of a market study, an engineering plan for a broadband network, and a pro forma financial analysis of any potential loan.

Applicants are encouraged to consider all available resources in their geographic area that can contribute to supporting this broadband strategy. After selection, in addition to grant funding under this RFP, grantees may be provided with targeted technical assistance by USDA or other federal agencies as available and appropriate. To ensure that a broad range of communities have the opportunity to benefit from the program, individual grants will be limited to $200,000. The amount of the request should cover the costs of developing the plan. RUS, in its discretion, may decrease the requested award amount based on its evaluation of an application and based on the level of funding available for this program.

B. Available Funds

1. General

Subject to Section III.B.5 below, approximately $105,000,000 in funding has been set aside for funding opportunities under the Second Round NOFA for the following projects and this RFP.

2. Funding Targets

Award amounts under this RFP will be targeted as follows:

a. Satellite Projects

Up to $100,000,000 is available for grants for Satellite projects.

b. Rural Library Broadband Projects

Up to $2,000,000 is available for grants for Rural Library Broadband projects.

c. Technical Assistance Projects

Up to $3,000,000 is available for grants for Technical Assistance projects.

3. Award Period

All awards must be made and funding obligated by September 30, 2010.

4. Type of Funding Instrument

The funding instruments will be grants.

5. Additional Available Funding From the First and Second Round NOFAs

Funding that remains available from the First Round NOFA or the Second Round NOFA may be used to provide additional funding for the categories listed above in Section III.B.2.

IV. Eligibility Information

A. General

Applicants must satisfy the following eligibility requirements to qualify for funding.

B. Eligible Entities

1. Satellite Projects

a. A satellite Internet Service Provider (ISP);

b. A reseller of satellite ISP service;

c. A distributor or dealer of satellite ISP service; and

d. A consortium of a, b, or c above, except for a consortium of more than one satellite ISP.

2. Rural Library Broadband Projects

The following entities are eligible to apply for assistance:

a. Awardees under the First Round NOFA or Second Round NOFA; and

b. Applicants under the Second Round NOFA.[1]

3. Technical Assistance Projects

The following entities are eligible to apply for assistance:

a. Awardees under the First Round NOFA or Second Round NOFA;

[1] Applicants under the Second Round NOFA that have not yet been notified of the status of their application may apply for assistance; however, such submissions are at the applicant's own risk. Only those applicants that are ultimately selected as Awardees under the Second Round NOFA will be eligible to receive an award for Rural Library Broadband projects.

b. Applicants under the Second Round NOFA [2]; and

c. Indian Tribes

C. Eligible Grant Expenses

1. Satellite Award Expenses

a. Unserved Rural Premises

Grant funds may only be expended for eligible purposes, as provided in Section IV.C.1.b below, to unserved rural premises in the Satellite Region(s) for which the Applicant has applied. The eight Satellite Regions encompass the following states: Region 1 Washington, Oregon, California, Nevada, Idaho, Utah, Arizona; Region 2 Montana, Wyoming, North Dakota, South Dakota, Nebraska, Minnesota, Iowa, Wisconsin, and Illinois; Region 3 Colorado, New Mexico, Kansas, Oklahoma, Texas, Missouri, Arkansas, and Louisiana; Region 4 Michigan, Indiana, Ohio, Kentucky, West Virginia, Pennsylvania, and Virginia; Region 5 Tennessee, Mississippi, Alabama, Georgia, Florida, South Carolina, and North Carolina; Region 6 Maryland, Delaware, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, and Maine; Region 7 Alaska; and Region 8 Hawaii.

Notwithstanding, unserved rural premises within the existing service area of current RUS borrowers currently in build-out, or the service areas of Last Mile Awardees under the First Round NOFA, Second Round NOFA or the BTOP NOFA shall be ineligible for grant funding, regardless of whether the premises are unserved, so as to not compete with RUS or Recovery Act projects being built. These areas can be found at *http://www.broadbandUSA.gov*.

b. To reimburse costs for the provision of broadband service to eligible, unserved rural premises defined in Section IV.C.1.a above, at the agreed upon proposed subscriber amount.

2. Eligible Rural Library Broadband Expenses

a. Award funds must be used by the Applicant to pay for the last mile connection to the rural library;

b. Award funds may be used by the Applicant to pay for the following:

1. The costs for up to 10 desktop or laptop computers and individual workstations located within the rural library;

2. End-user equipment needed to carry out the project;

3. The costs for the improvement of the rural library in order to accommodate, if necessary, the individual workstations; or

4. The cost of providing broadband service, free of charge, to the rural library for up to 2 years.

3. Eligible Technical Assistance Expenses

Award funds may be used by the Applicant:

a. To fund the proposed technical assistance for regional broadband development planning activities associated with a region or USDA region in rural areas. Such technical assistance must include planning, technical and economic expertise;

b. To reimburse up to 5 percent of the costs of the total proposed budget for pre-application expenses incurred no earlier than the date of the publication of the Second Round NOFA, January 22, 2010;

c. To fund the cost of a market study of the selected region;

d. To fund the cost of an engineering design for a broadband network to cover the selected region; and

e. To fund the cost of creating a pro forma financial analysis of a proposed future loan.

V. Application and Submission Information

A. Request for Application Package

Complete application packages, including required federal forms and instructions, will be available at *http://www.broadbandusa.gov.* Additional information can be found in the *Application Guidelines* at *http://www.broadbandusa.gov.* This Web site will be updated regularly.

B. Registration

1. DUNS Number

All Applicants must supply a Dun and Bradstreet Data Universal Numbering System (DUNS) number. Applicants can receive a DUNS number at no cost by calling the dedicated toll-free DUNS number request line at 1–866–705–5711 or via the Internet at *http://www.dunandbradstreet.com.*

2. Central Contractor Registration (CCR)

All Applicants must provide a CCR (CAGE) number evidencing current registration in the CCR database. If the Applicant does not have a current CCR (CAGE) number, the Applicant must register in the CCR system available at *http://www.ccr.gov/StartRegistration.aspx.* Applicants are encouraged to register early due to potential delays in registration.

C. Contents of the Application

1. Requirements for Applications for Satellite Projects

A complete application will include the following, broken out to the extent possible for each Satellite Region being applied for if not a National Application:

a. The identity of the Applicant or co-applicants and general Applicant and project information including:

i. A description of the project that will be made public consistent with the requirements of the Recovery Act;

ii. The Congressional District of the Applicant's headquarters;

b. An executive summary of the project, including the Satellite Region(s) for which the Applicant is applying, whether it is a National Application, and the number of unserved rural premises proposed to be served by the applicant within the Satellite Region(s);

c. A description of the Applicant's ability to cover the entire Satellite Region(s) being applied for;

d. A description of the proposed service offerings, including quality of service, transmission speed, associated pricing plans for a Basic Service Package, an Expanded Service Package, and a Commercial Service Package, how its rates will be affordable to low-income households, and how the service will be marketed throughout the entire Satellite Region(s) being applied for. The proposed service offerings of the proposal must include the provision of no cost CPE (including no installation, activation, or other fees) for all packages offered. In addition, the Basic Service Package must be offered at a rate no higher than $50 per month for at least one year with no length of service requirements, unless the Applicant offers the Basic Service Package at less than $40 per month. In such case, the Applicant may propose a one-year contract requirement, if an unconditional 30-day cancellation clause is provided. There are no length of service requirements or price requirements for Expanded Service Packages or Commercial Service Packages;

e. Résumés of key management personnel, a description of the organization's readiness to manage a broadband services network, and an organizational chart showing any parent organizations and/or subsidiaries and affiliates;

f. A legal opinion (as set forth in the application) that: (1) Addresses the

[2] Applicants under the Second Round NOFA that have not yet been notified of the status of their application may apply for assistance; however, such submissions are at the applicant's own risk. Only those applicants that are ultimately selected as Awardees under the Second Round NOFA will be eligible to receive an award for Technical Assistance projects.

Applicant's ability to enter into the award documents; (2) describes all material pending litigation matters; and (3) addresses the Applicant's ability to pledge security as required by the award documents;

g. The total amount of the proposal, the amount which the Applicant is requesting in assistance, and the proposed subscriber amount (note only regional applications may contain distinct proposed subscriber amounts);

h. Pro forma financial analysis related to the sustainability of the project, including subscriber estimates and proposed service offerings in addition to broadband Internet access; annual financial projections including balance sheets, income statements, and cash flow statements and supporting assumptions for a five-year forecast period as applicable; and evidence of committed sources of capital funding required to sustain the operation;

i. Historical financial statements, Certified Public Accountant (CPA) audits if applicable, for the previous two calendar years;

j. Certifications required in the application;

k. The pricing package being offered to critical community facilities, if any;

l. A list of all outstanding and contingent obligations, including copies of existing notes, loan and security agreements, and guarantees;

m. A detailed description of working capital requirements and the source of these funds;

n. A description of measurable service metrics and target service level objectives (SLOs) (*e.g.,* the speed with which new service will be established, service availability, and response time for reports of system failure at a residence) that will be provided to the customer, and a description of the approach and methodology for monitoring ongoing service delivery and service quality for the services being employed.

2. Requirements for Rural Library Broadband Projects

A complete application will include the following:

a. The identity of the Applicant, and co-Applicant, if any, and general Applicant and project information;

b. A description of the project that will be made public consistent with the requirements of the Recovery Act; and

c. The estimated dollar amount of the funding request, including an itemized budget for the associated costs for the last mile connection to the rural library, and any additional costs the Applicant seeks, such as required improvements to the rural library to accommodate individual workstations, up to 10 desktop or laptop computers and individual workstations to be located within the rural library, end-user equipment and telecommunications terminal equipment needed to carry out the project, and the cost of providing free broadband service to the rural library for up to 2 years;

d. An executive summary of the project as detailed in the application;

e. A certification that no broadband connection exists to the rural library, and that the rural library has or will receive a Community Facilities award;

f. A description of the quality of the service being provided;

g. A description of the benefits to the community or communities to be served by the rural library broadband connection; and

h. A completed Environmental Questionnaire, other documentation requests, and required environmental authorizations and permits, including those required by the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*) (NEPA), the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 *et seq.*) (NHPA), and the Endangered Species Act of 1973, as amended (16 U.S.C. 1534 *et seq.*) (ESA) as applicable.

3. Requirements for Technical Assistance Projects

A complete application, which must not exceed twenty (20) consecutively numbered, 8.5 x 11-inch pages of single-spaced, standard 12-point type with 1-inch margins, must provide the following information:

a. An overview of the plan to address the following USDA key strategy: *Use of broadband and other critical infrastructure as a strategy to facilitate local entrepreneurship and expansion of market opportunities for small businesses;*

b. The description of the identified Region or USDA Region in need of assistance;

c. An explanation of the economic integration and cohesion that will be created in the Region or USDA Region with the Award. Proposals with detailed plans for a market study, engineered broadband network, or pro forma financial analysis will be favored. The qualifications of consultants to provide such work should also be addressed;

d. Evidence of resources which will be used to implement the regional economic and community development strategies, such as letters of endorsement from State and local governments, educational institutions, and the private and nonprofit sectors;

e. The identity of communities within the Region or USDA Region that would be eligible under RUS' Infrastructure Telecommunications, Rural Broadband Access, Community-Oriented Connectivity Broadband, and/or Distance Learning and Telemedicine grant and loan programs, and basic data regarding population, numbers of households, numbers and types of businesses, local revenue and employment should be provided;

f. The amount of the grant request, supported by a detailed budget estimate to create the plan;

g. A list of the objectives of the plan and why the objectives are important. This section should also include any background or introductory information that would help explain the objectives.

h. An outline of the research design, methods, analytical tools, and techniques that the applicant intends to use in meeting the objectives stated above. Methods must be clearly stated so that the agency can evaluate the appropriateness of the applicant's approach and tools to be used. A statement such as: "we will evaluate the data using the usual statistical methods" is not specific enough for evaluation.

i. Describe the expected results, benefits, and outcomes the applicant expects to achieve if awarded the grant and the potential benefits of the results to the communities and region served in the plan. A clear, concise description will help the agency understand the merits of the proposal; and

j. Discuss other information relevant to the potential success of the project. This should include facilities, personnel expertise/experience, project schedules, proposed management, interactions with other institutions, etc. Applications for multi-investor projects must identify project management and the functions of each investigator in each team and describe plans to communicate and share data.

D. Material Representations

The application, including certifications, and all forms submitted as part of the application will be treated as a material representation of fact upon which RUS will rely in awarding grants.

VI. Application Evaluation, Processing, and Implementation Procedures

A. Satellite Projects

The United States will be divided into eight service area regions eligible for Satellite applications (Satellite Regions). Applicants must propose serving only unserved rural premises in any of the eight Satellite Regions listed in Section IV.C.1(a) in this RFP; provided,

however, existing service areas where broadband capable service is in the process of being built-out by current RUS borrowers, or the service areas of Last Mile Awardees under the First Round NOFA, Second Round NOFA, or BTOP NOFA shall be ineligible for grant funding, regardless of whether the premises are unserved. Applicants may submit an application for more than one Satellite Region; however, each Satellite Region in the application must be broken out so that the Agency can analyze the proposal for each Satellite Region individually. Applicants may also submit a National Application covering at least six Satellite Regions, but such application will be limited to providing only one proposed subscriber amount for federal assistance.

Regional and National Applications will be evaluated on the strength of their proposals and the extent to which unserved rural premises will benefit under their proposals. The price of the service to the end-user, the proposed subscriber amount, the length of any proposed discounted service, the quality and transmission speed of the proposed services, especially the Basic Service Package, how potential requests for service will be handled, and the amount of outside investment in the project will all be considered as a whole.

Successful Applicants will be notified of the details of the award, and must accept the offer within the time specified in the grant offer. Applicants that are not able to do so will be rejected, and the next qualifying Applicant may be selected for the Satellite Region. RUS, at its discretion, reserves the right to decline funding in any Satellite Region for which no satisfactory application is received.

Awardees will be advanced funds no more than once per month for reimbursing the connection of new unserved, rural premises. The Awardee shall be entitled to the approved proposed subscriber amount of federal assistance for each new eligible subscriber.

If no applications are received for a given Satellite Region, the Administrator may request applications for that Satellite Region from existing Applicants under this RFP. Moreover, if the Administrator determines that no applications are acceptable for a Satellite Region, the Agency may request Applicants that submitted applications for that Satellite Region to submit amended applications. If the Agency is still unable to receive an acceptable application from such Applicants, then the Administrator reserves the right to request applications from Applicants for other Satellite Regions, or not to award the Satellite Region.

B. Rural Library Broadband Grants

Applications for Rural Library Broadband grants will be evaluated in terms of the benefit to the rural library benefitting from the grant, as well as the benefits to the community to be served. The quality of the broadband service being provided, the length of any proposed free service or additional discounted service, the conditions of the community to be served, such as unemployment rate or income levels, and the reasonableness of costs will all be considered as a whole. RUS, in its discretion, may increase or decrease the requested award amount based on its evaluation of the reasonableness of the costs and the level of funding available for this program.

C. Technical Assistance Grants

Applications for Technical Assistance grants will be evaluated on the strength and scope of the regional broadband development strategies and plan to address the logical components of a broadband plan. Moreover, the extent to which existing infrastructure will be integrated in the region, the number of unserved communities that will be connected, how regional economic development will be promoted, and the strength of the Applicant will all be considered in the evaluation. Applicants may request up to $200,000. RUS, in its discretion, may decrease the requested award amount based on its evaluation of the application and the level of funding available for this program. The Agency reserves the right to reject Applications that do not conform to the page, font, and spacing requirements of Section V.C.3.

VII. Award Administration Information

A. Award Notices

Successful Applicants will receive award documents from RUS following award notification. Applicants may view sample award documents at *http://www.broadbandusa.gov.*

B. Administrative Requirements

1. Pre-Award conditions

No funds will be disbursed under this program until all other sources of funding have been obtained and any other pre-award conditions have been met. Failure to obtain one or more sources of funding committed to in the Application or to fulfill any other pre-award condition within 30 days of award announcement will result in withdrawal of the award.

2. Failure To Comply With Award Requirements

If an Awardee fails to comply with the terms of the award as specified in the award documents, RUS may exercise rights and remedies.

3. Advance Procedures

RUS grant advances are made at the request of the Awardee according to the procedures stipulated in the grant documents.

4. Accounting, Monitoring, and Reporting Requirements

Awardees must follow RUS' accounting, monitoring, and reporting requirements. These requirements, which are specified in the award documents, include, but are not limited to, the following:

a. Awardees must adopt a GAAP system of accounts acceptable to RUS, and which complies with RUS Accounting Requirements, as defined herein;

b. Awardees must submit annual audited financial statements along with a report on compliance and on internal control over financial reporting, and a management letter in accordance with the requirements of 7 CFR part 1773. The CPA conducting the annual audit is selected by the Awardee and must be approved by RUS as set forth in 7 CFR 1773.4;

c. Awardees must submit to RUS the information as specified in Section VII.D.2 of this RFP;

d. Awardees must comply with all reasonable RUS requests to support ongoing monitoring efforts. The Awardee shall afford RUS, through its representatives and representatives of the USDA Office of Inspector General, reasonable opportunity at all times during business hours and upon prior notice, to have access to and the right to inspect the broadband system, and any other property encumbered by the mortgage or security agreement, and any or all books, records, accounts, invoices, contracts, leases, payrolls, timesheets, cancelled checks, statements, and other documents, electronic or paper of every kind belonging to or in the possession of the Awardee or in any way pertaining to its property or business, including its subsidiaries, if any, and to make copies or extracts therefrom.

5. Assistance Instruments

a. Terms and conditions of grants are set forth in the non-negotiable standard grant agreement found at *http://www.broadbandusa.gov.*

b. Grant documents appropriate to the project must be executed prior to any advance of funds.

C. Award Terms and Conditions

1. Scope

Awardees, including all contractors and subcontractors, are required to comply with the obligations set forth in the Recovery Act and the requirements established herein. Any obligation that applies to the Awardee shall extend for the life of the awarded-funded facilities.

2. Sale or Lease of Project Assets

The sale or lease of any portion of the award-funded broadband facilities shall be governed by the applicable Grant Agreement and the Department's grant regulations at 7 CFR parts 3015, 3016, and 3019. Terms under which grant assets can be sold are outlined in the Department's grant regulations cited above.

3. Certifications

a. The Applicant must certify that he or she is authorized to submit the application on behalf of the eligible entity(ies) listed on the application; that the Applicant has examined the application, that all of the information in the application, including certifications and forms submitted, all of which are part of the application, are material representations of fact and true and correct to the best of his or her knowledge; that the entity(ies) that is requesting funding pursuant to the application and any subawardees will comply with the terms, conditions, purposes, and federal requirements of the program; that no kickbacks were paid to anyone; and that a false, fictitious, or fraudulent statement or claim on this application is grounds for denial or termination of an award, and/or possible punishment by a fine or imprisonment as provided in 18 U.S.C. 1001 and civil violations of the False Claims Act (31 U.S.C. 3729 *et seq.*);

b. The Applicant certifies that the entity(ies) he or she represents have and will comply with all applicable Federal, state, and local laws, rules, regulations, ordinances, codes, orders, and programmatic rules and requirements relating to the project.[3] The Applicant acknowledges that failure to do so may result in rejection or deobligation of the award. The Applicant acknowledges that failure to comply with all Federal and program rules could result in civil or criminal prosecution by the appropriate law enforcement authorities;

[3] *See* Recovery Act section 6001(e)(4), 123 Stat. at 514.

D. Reporting Requirements

1. General Recovery Act Requirements

a. OMB Reporting Requirements Implementing the Recovery Act

Any grant awarded under the Second Round NOFA and this RFP shall be subject to the applicable statutes and regulations regarding reporting on Recovery Act funds.[4] If Recovery Act funds are combined with other funds to fund or complete projects and activities, Recovery Act funds must be accounted for separately from other funds and reported to RUS or any federal web site established for Recovery Act reporting purposes. Moreover, recipients of funds under this RFP must also comply with the accounting requirements as established or referred to in this RFP.

b. Required Data Elements

The Awardee and each contractor engaged by the Awardee must submit the following information to the relevant Agency:

i. The total amount of Recovery Act funds received;

ii. The amount of Recovery Act funds received that were expended or obligated to projects or activities;

iii. A detailed list of all projects or activities for which Recovery Act funds were expended or obligated, including (1) the name of the project or activity; (2) a description of the project or activity; (3) an evaluation of the completion status of the project or activity; (4) an estimate of the number of jobs created and the number of jobs retained by the project or activity; and (5) for infrastructure investments made by state and local governments, the purpose, total cost, and rationale of the Agency for funding the infrastructure investment with Recovery Act funds, and name of the person to contact at the Agency if there are concerns with the infrastructure investment; and

iv. Detailed information on any subcontracts or subgrants awarded by the Awardee to include the data elements required to comply with the Federal Funding Accountability and Transparency Act of 2006 (Pub. L. 109–282, 120 Stat. 1186 (to be codified at 31 U.S.C. 6101 note), allowing aggregate reporting on awards below $25,000 or to individuals.[5]

[4] *See, e.g.,* 2 CFR pt. 176; OMB, Interim Final Guidance for Federal Financial Assistance, 74 FR 18449 (Apr. 23, 2009); Implementing Guidance for Reports on Use of Funds Pursuant to the American Recovery and Reinvestment Act of 2009 (OMB M–09–21 June 22, 2009); and Updated Guidance on the American Recovery and Reinvestment Act of 2009 (OMB M–10–08 Dec. 18, 2009).

[5] Recovery Act section 1512(c), 123 Stat. at 287.

Awardees that must report information according to paragraph b(iv) of this section (re: Subcontracts or subgrants) must register with the CCR database (*http://www.ccr.gov/*) or complete other registration requirements as determined by the Director of OMB.

c. Reporting Deadlines

Recovery Act reports are due no later than 10 calendar days after each calendar quarter in which the Awardee receives the assistance award funded in whole or part with award funds. The final report should summarize the Awardee's quarterly filings and state whether the project's goals have been satisfied. Pursuant to OMB Guidelines, reports should be submitted electronically to *http://www.federalreporting.gov.* If the Awardee fails to submit an acceptable quarterly report or audited financial statement within the timeframe designated in the grant award, the agencies may suspend further payments until the Awardee complies with the reporting requirements. Additional information regarding reporting requirements will be specified at the time the award is issued.

2. BIP-Specific Reporting Requirements

In addition to the general Recovery Act reporting requirements, Satellite Awardees shall submit to RUS 30 calendar days after the end of each calendar year quarter, balance sheets, income statements, statements of cash flow, rate package summaries, and the number of unserved, rural premises taking broadband service utilizing RUS' Broadband Collection and Analysis System (BCAS). BCAS is an electronic reporting system that is accessed through the Internet.

VIII. Other Information

A. Funding Rounds

This is the final funding round for BIP.

B. Discretionary Awards

The government is not obligated to make any award as a result of this announcement, and will fund only projects that are deemed likely to achieve the program's goals and for which funds are available.

C. Limitation on Expenditures

The Recovery Act imposes an additional limitation on the use of funds expended or obligated from appropriations made pursuant to its provisions. Specifically, for purposes of this RFP, none of the funds appropriated or otherwise made

available under the Recovery Act may be used by any state or local government, or any private entity, for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.[6]

D. Recovery Act Logo

All projects that are funded by the Recovery Act shall display signage that features the Primary Emblem throughout the construction phase. The signage should be displayed in a prominent location on site. Some exclusions may apply. The Primary Emblem should not be displayed at a size less than six inches in diameter.

E. Environmental and National Historic Preservation Requirements

Awarding agencies are required to analyze the potential environmental impacts, as required by the NEPA and the NHPA for Applicant projects or proposals seeking Recovery Act funding. All Applicants are required to complete the Environmental Questionnaire under the description of program activities and to submit all other required environmental documentation with the application.

It is the Applicant's responsibility to obtain all necessary federal, state, and local governmental permits and approvals necessary for the proposed work to be conducted. Applicants are expected to design their projects so that they minimize the potential for adverse impacts to the environment. Applicants also will be required to cooperate with the granting agencies in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their proposed projects. The failure to do so may be grounds for not making an award.

Applications will be reviewed to ensure that they contain sufficient information to allow Agency staff to conduct a NEPA analysis so that appropriate NEPA documentation can be submitted to the agencies, along with the recommendation for funding of the selected applications. Applicants proposing activities that cannot be covered by existing environmental compliance procedures will be informed after the technical review stage whether NEPA compliance and other environmental requirements can otherwise be expeditiously met so that a project can proceed within the timeframes anticipated under the Recovery Act.

If additional information is required after an application is accepted for funding, funds can be withheld by the agencies under a special award condition requiring the Awardee to submit additional environmental compliance information sufficient for the Agency to make an assessment of any impacts that a project may have on the environment.

F. Davis-Bacon Wage Requirements

Pursuant to section 1606 of the Recovery Act, any project using Recovery Act funds requires the payment of not less than the prevailing wages for "all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government."[7]

G. Financial and Audit Requirements

To maximize the transparency and accountability of funds authorized under the Recovery Act, all Applicants are required to comply with the applicable regulations set forth in OMB's Interim Final Guidance for Federal Financial Assistance.[8]

Recipients that expend $500,000 or more of federal funds during their fiscal year are required to submit an organization-wide financial and compliance audit report. The audit must be performed in accordance with the U.S. General Accountability Office, Government Auditing Standards, located at *http://www.gao.gov/govaud/ybk01.htm,* and OMB Circular A–133, Audits of States, Local Governments, and Non-Profit Organizations, located at *http://www.whitehouse.gov/omb/circulars/a133/a133.html.* Awardees are responsible for ensuring that sub-recipient audit reports are received and for resolving any audit findings.

H. Deobligation

The RUS reserves the right to deobligate awards to recipients under this RFP that demonstrate an insufficient level of performance, or wasteful or fraudulent spending, and award these funds competitively to new or existing Applicants prior to September 30, 2010.

I. Confidentiality of Applicant Information

Applicants are encouraged to identify and label any confidential and proprietary information contained in their applications. The Agency will protect confidential and proprietary information from public disclosure to the fullest extent authorized by applicable law, including the Freedom of Information Act, as amended (5 U.S.C. 552), the Trade Secrets Act, as amended (18 U.S.C. 1905), the Economic Espionage Act of 1996 (18 U.S.C. 1831 *et seq.*), and CALEA (47 U.S.C. 1001 *et seq.*). Applicants should be aware, however, that the Recovery Act requires substantial transparency. For example, RUS is required to make publicly available on the Internet a list of each entity that has applied for a grant, a description of each application, the status of each application, the name of each entity receiving funds, the purpose for which the entity is receiving the funds, each quarterly report, and other information.[9]

J. Disposition of Unsuccessful Applications

Applications accepted for review for Fiscal Year 2010 BIP will be retained for two years, after which they will be destroyed.

K. State Certifications

With respect to funds made available under Recovery Act to state or local governments for infrastructure investments, the governor, mayor, or other chief executive, as appropriate, must certify that the infrastructure investment has received the full review and vetting required by law and that the chief executive accepts responsibility that the infrastructure investment is an appropriate use of taxpayer dollars. This certification must include a description of the investment, the estimated total cost, and the amount of funds to be used, and must be posted on the recipient's website and linked to *http://www.recovery.gov.* A state or local Agency may not receive infrastructure investment funding from funds made available under the Recovery Act unless this certification is made and posted.[10]

L. Compliance With Applicable Laws

Any recipient of funds under this RFP shall be required to comply with all applicable federal and state laws, including but not limited to: i. The nondiscrimination and equal employment opportunity requirements of Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000e *et seq.,* 7 CFR part 15); ii. section 504 of the Rehabilitation Act (29 U.S.C. 794 *et seq.;* 7 CFR part 15b); iii. The Age Discrimination Act of 1975, as amended (42 U.S.C. 6101 *et seq.;* 45 CFR part 90); iv. Executive Order 11375, amending Executive Order 11246, Relating to

[6] *Id.* Section 1604, 123 Stat. at 303.

[7] *Id.* Section 1606, 123 Stat. at 303.

[8] *See* OMB, Interim Final Guidance for Federal Financial Assistance, 74 FR 18449 (Apr. 23, 2009).

[9] *See* Recovery Act section 6001(i)(5), 123 Stat. at 515.

[10] *See id.* sections 1511, 1526, 123 Stat. at 287, 293.

Equal Employment Opportunity (3 CFR part 102). *See* 7 CFR parts 15 and 15b and 45 CFR part 90, RUS Bulletin 1790–1 ("Nondiscrimination among Beneficiaries of RUS Programs"), and RUS Bulletin 20–15:320–15 ("Equal Employment Opportunity in Construction Financed with RUS Loans"). The RUS Bulletins are available at *http://www.broadbandusa.gov.;* v. The Architectural Barriers Act of 1968, as amended (42 U.S.C. 4151 *et seq.*); vi. The Uniform Federal Accessibility Standards (UFAS) (Appendix A to 41 CFR subpart 101–19.6); and vii. The Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA and certain related federal environmental laws, statutes, regulations, and Executive Orders found in 7 CFR part 1794. A more complete list of such requirements can be found in the applicable grant agreement.

M. Communications Laws

Awardees will be required to comply with all applicable federal and state communications laws and regulation as applicable, including, for example, the Communications Act of 1934, as amended, (47 U.S.C. 151 *et seq.*) the Telecommunications Act of 1996, as amended (Pub. L. 104–104, 110 Stat. 56) (1996), and CALEA. For further information, *see http://www.fcc.gov.*

N. Buy American Notice

1. General Prohibition and Waiver

None of the funds appropriated or otherwise made available by the Recovery Act may be used for the construction, alteration, maintenance, or repair of a public building or public work (as such terms are defined in 2 CFR 176.140) unless all of the iron, steel, and manufacturing goods used in the project are produced in the United States.[11] On July 1, 2009, the Department of Agriculture published a notice in the **Federal Register** at 74 FR 31402 stating that the Secretary of Agriculture has determined that applying the Buy American provision for the use of certain broadband equipment in public BIP projects would be inconsistent with the public interest.

As explained below, to the extent that an Applicant wishes to use broadband equipment or goods that are not covered by the Secretary's waiver, it may seek an additional waiver on a case-by-case basis as part of its application for Recovery Act funds.

[11] *Id.* section 1605, 123 Stat. at 303.

2. OMB Buy American Notice Requirement

Pursuant to OMB guidance on the Recovery Act,[12] RUS is required to provide the following notice:

Section 176.170 Notice of Required Use of American Iron, Steel, and Manufactured Goods (Covered Under International Agreements)—Section 1605 of the American Recovery and Reinvestment Act of 2009

When requesting applications or proposals for Recovery Act programs or activities that may involve construction, alteration, maintenance, or repair of a public building or public work, and involve iron, steel, and/or manufactured goods covered under international agreements, the agency shall use the notice described in the following paragraphs in the solicitation:

(a) *Definitions. Designated country iron, steel, and/or manufactured goods, foreign iron, steel, and/or manufactured good, public building* and *public work,* and *steel,* as used in this provision, are defined in 2 CFR 176.160(a).

(b) *Requests for determinations of inapplicability.* A prospective applicant requesting a determination regarding the inapplicability of section 1605 of the American Recovery and Reinvestment Act of 2009 (Pub. L. 111–5) (Recovery Act) should submit the request to the award official in time to allow a determination before submission of applications or proposals. The prospective Applicant shall include the information and applicable supporting data required by 2 CFR 176.160(c) and (d) in the request. If an Applicant has not requested a determination regarding the inapplicability of section 1605 of the Recovery Act before submitting its application or proposal, or has not received a response to a previous request, the Applicant shall include the information and supporting data in the application or proposal.

(c) *Evaluation of project proposals.* If the Federal Government determines that an exception based on unreasonable cost of domestic iron, steel, and/or manufactured goods applies, the Federal Government will evaluate a project requesting exception to the requirements of section 1605 of the Recovery Act by adding to the estimated total cost of the project 25 percent of the project cost if foreign iron, steel, or manufactured goods are used based on unreasonable cost of comparable domestic iron, steel, or manufactured goods.

(d) *Alternate project proposals.*

(1) When a project proposal includes foreign iron, steel, and/or manufactured goods, other than designated country iron, steel, and/or manufactured goods, that are not listed by the Federal Government in this Buy American notice in the request for applications or proposals, the Applicant may submit an alternate proposal based on use of equivalent domestic or designated country iron, steel, and/or manufactured goods.

(2) If an alternate proposal is submitted, the Applicant shall submit a separate cost comparison table prepared in accordance with paragraphs 2 CFR 176.160(c) and (d) for the proposal that is based on the use of any foreign iron, steel, and/or manufactured goods for which the Federal Government has not yet determined if an exception applies.

(3) If the Federal Government determines that a particular exception requested in accordance with 2 CFR 176.160(b) does not apply, the Federal Government will evaluate only those proposals based on use of the equivalent domestic or designated country iron, steel, and/or manufactured goods, and the Applicant shall be required to furnish such domestic or designated country items.

[12] *See* 2 CFR part 176.

O. Executive Order 12866

The Recovery Act appropriated $2.5 billion to RUS for broadband grants and loans. Of that, this RFP reserves $2 million for Rural Library Broadband projects and $3 million for Technical Assistance projects. The Agency has determined that these programs are not "economically significant." This RFP also reserves $100 million for Satellite projects, which may be supplemented by funds that remain available under the First Round NOFA and Second Round NOFA. The Agency has determined this program to be "economically significant" under Executive Order 12866, and has accordingly performed an economic analysis outlining the costs and benefits of implementing the Satellite program. The complete analysis is available from RUS upon request. Awards for all three programs must be made no later than September 30, 2010.

P. Executive Order 13132

It has been determined that this notice does not contain policies with federalism implications as that term is defined in Executive Order 13132.

Q. Administrative Procedure Act Statement

This RFP is being issued without advance rulemaking or public comment. The Administrative Procedure Act of 1946, as amended (5 U.S.C. 553) (APA), has several exemptions to rulemaking requirements. Among them is an exemption for "good cause" found at 5 U.S.C. 553(b)(B), which allows effective government action without rulemaking procedures where withholding the action would be "impracticable, unnecessary, or contrary to the public interest."

USDA has determined, consistent with the APA that making these funds available under this RFP for broadband development, as mandated by the Recovery Act, is in the public interest. Given the emergency nature of the Recovery Act and the extremely short time period within which all funds must be obligated, withholding this RFP

to provide for public notice and comment would unduly delay the provision of benefits associated with these broadband initiatives and be contrary to the public interest.

For the same reasons, the Agency finds good cause under 5 U.S.C. 553(d)(3) to waive the 30-day delay in effectiveness for this action. Because notice and opportunity for comment are not required pursuant to 5 U.S.C. 553(d)(3) or any other law, the analytical requirements of the Regulatory Flexibility Act of 1980, as amended (5 U.S.C. 601 *et seq.*) are inapplicable. Therefore, a regulatory flexibility analysis is not required and has not been prepared.

R. Paperwork Reduction Act

Copies of all forms, regulations, and instructions referenced in this RFP may be obtained from RUS by e-mailing *BroadbandUSA@usda.gov.* Data furnished by the Applicants will be used to determine eligibility for program benefits. Furnishing the data is voluntary; however, the failure to provide data could result in program benefits being withheld or denied.

The Information Collection and Recordkeeping requirements contained in the RFP have been approved by emergency clearance under OMB Control Number 0572–0145. In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 35), RUS invites comments on this information collection for which the Agency intends to request approval from the Office of Management and Budget (OMB).

Comments on this notice must be received by July 6, 2010. Comments are invited on (a) whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) the accuracy of the agency's estimate of burden including the validity of the methodology and assumption used; (c) ways to enhance the quality, utility and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Comments may be sent to Michele Brooks, Director, Program Development and Regulatory Analysis, Rural Utilities Service, U.S. Department of Agriculture, 1400 Independence Ave., SW., Stop 1522, Room 5162 South Building, Washington, DC 20250–1522.

Title: Broadband Initiatives Program—Rural Libraries, Technical Assistance, and Satellite Grants.

Type of Request: New collection.

Estimate of Burden: Public reporting burden for this collection of information is estimated to average 22 hours per response.

Respondents: Businesses and other for-profits.

Estimated Number of Respondents: 134.

Estimated Number of Responses per Respondent: 2.8.

Estimated Total Annual Burden on Respondents: 8,427 hours.

Copies of this information collection can be obtained from Michele Brooks, Program Development and Regulatory Analysis, at (202) 690–1078.

All responses to this information collection and recordkeeping notice will be summarized and included in the request for OMB approval. All comments will also become a matter of public record.

S. Recovery Act

Additional information about the Recovery Act is available at *http://www.Recovery.gov.*

T. Authorized Signatories

Only authorized grant officers can bind the Government to the expenditure of funds.

Dated: May 3, 2010.

Jonathan Adelstein,

Administrator, Rural Utilities Service.

[FR Doc. 2010–10765 Filed 5–6–10; 8:45 am]

BILLING CODE P

DEPARTMENT OF AGRICULTURE

Forest Service

Kake to Petersburg Transmission Line Intertie Project

AGENCY: Forest Service, USDA.

ACTION: Notice of intent to prepare an Environmental Impact Statement.

SUMMARY: The Department of Agriculture, Forest Service, will prepare an Environmental Impact Statement (EIS) on a proposal to construct and operate a new electric transmission line intertie that would extend west across the Tongass National Forest from the Petersburg area to the community of Kake. The proposed action is to build a new transmission line that would transmit power at either 69 or 138 kilovolt (kV) and consist of single wood pole structures with horizontal post insulators, with average span lengths between pole structures of 350 to 400 feet. Two primary alternative routes are currently under consideration. These routes generally follow two routes previously identified as Transportation and Utility System (TUS) corridors in the Tongass National Forest Land and Resource Management Plan (Forest Plan). Both alternative routes follow existing logging roads for the majority of their lengths. In addition, one of the routes follows the proposed route identified by the Alaska Department of Transportation & Public Facilities (DOTPF) for the permanent road between Kake and Petersburg. Both routes would use existing roads for construction and long-term maintenance access where possible. New road segments would be built in locations where access is not currently available.

DATES: Comments concerning the scope of the analysis must be received by June 7, 2010. Public information and scoping meetings will be held in Petersburg on May 12, 2010 and in Kake on May 13, 2010. The Draft EIS is projected to be filed with the Environmental Protection Agency (EPA) in December 2010 and will begin a 45-day public comment period. The Final EIS and Record of Decision are scheduled to be published in Summer/Fall 2011.

ADDRESSES: You may comment on the project in the following ways: Send written comments to the Petersburg Ranger District, Tongass National Forest, Attn: Kake-Petersburg Intertie Project, P.O. Box 1328, Petersburg, AK 99833, or hand deliver them to the Petersburg Ranger District, 12 N Nordic Drive, Petersburg, Alaska. The FAX number is (907) 772–5995. Send e-mail comments to: *comments-alaska-tongass-petersburg@fs.fed.us* with "Kake-Petersburg Intertie Project" in the subject line. Include your name, address and organization name if you are commenting as a representative.

FOR FURTHER INFORMATION CONTACT: Questions about the proposal and EIS should be directed to Chris Savage, District Ranger, Petersburg Ranger District, Tongass National Forest, P.O. Box 1328, Petersburg, AK 99833, telephone (907) 772–3871.

SUPPLEMENTARY INFORMATION:

Background: An Intertie transmission line from Kake to Petersburg has been discussed for many years and has been the subject of a number of studies dating back to the 1970s, with more than 10 alternative routes discussed over the years. Recent studies include the Southeast Alaska Intertie Study prepared in 2003 and a follow-on study of the Kake-Petersburg Intertie completed in 2005 and updated in 2009. These recent studies identified two

primary route alternatives, a southern route that crosses the Wrangell Narrows near the Tonka log transfer facility and proceeds west across Duncan Canal (the "Center-South" route), and a northern route generally located on the north end of Kupreanof Island (the "Northern" route). These alternatives generally correspond with two TUS corridors identified in the 2008 Forest Plan.

Purpose and Need for Action: The community of Kake on Kupreanof Island is presently served by an isolated electric system operated by the Inside Passage Electric Cooperative (IPEC). This system currently depends upon high-cost diesel generation, and the resulting high cost of electricity in Kake is a major burden on the economic and social well-being of the community and a significant disincentive to economic development. The proposed Kake-Petersburg Intertie would connect this isolated electric system to the interconnected electric systems of Petersburg, Wrangell and Ketchikan. Petersburg, Wrangell, and Ketchikan are currently interconnected to and obtain most of their power supplies from the Tyee Lake and Swan Lake hydroelectric projects owned by the Southeast Alaska Power Agency (SEAPA) (formerly the Four Dam Pool Power Agency). The Kake-Petersburg Intertie would be used to transmit surplus hydroelectric power from SEAPA to the IPEC electric system in Kake, thereby offsetting the existing diesel generation while lowering and stabilizing the cost of electricity in Kake.

Proposed Action: The proposed transmission line would extend west from the Petersburg area to the community of Kake and be approximately 46.8 miles or 56.5 miles in length. The line would be built to transmit power at either 69 or 138 kV and consist of single wood pole structures with horizontal post insulators, with average span lengths between pole structures of 350 to 400 feet. This design would be able to take advantage of existing roads for construction and maintenance and has been used successfully for other transmission applications elsewhere in Alaska.

The two primary routes identified in the 2005 feasibility study and evaluated further in the 2009 update—the Center-South and Northern routes—are currently under consideration. Both proposed routes follow existing logging roads for the majority of their lengths. In addition, the Northern route follows the proposed route identified by the Alaska DOTPF for the permanent road between Kake and Petersburg. Both routes would use existing roads for construction and long-term maintenance access where possible. New road segments would be built in locations where access is not currently available. The two alternative routes may be summarized as follows:

Center-South Route—(46.8 miles total length, two marine crossings). This route would connect to the existing Tyee transmission line approximately 8 miles south of Petersburg and require a tap or a small switch yard. From this connection, the route crosses Wrangell Narrows, proceeds west across the Lindenberg Peninsula (10.6 miles), crosses Duncan Canal, and continues northwest to Kake (33.7 miles), where it would terminate at a new substation located approximately 4.8 miles south of the existing Kake substation. A new distribution line (12.45 kV) would extend from the new substation to Kake. The majority of this route (43.6 miles) would cross National Forest System (NFS) lands. The route would also cross lands owned and managed by the town of Petersburg, Sealaska, Kake Tribal Corporation, and the city of Kake.

Northern Route—(56.5 miles total length, one marine crossing). This route would originate at the existing SEAPA substation near Petersburg, cross Wrangell Narrows from Mitkof Island to Kupreanof Island, and follow the proposed route of the Alaska DOTPF road north along Frederick Sound (18.5 miles), and then west (37.9 miles) to Kake, where, like the Center-South route, it would terminate at a new substation with a new distribution line extending to Kake. The majority of this route (47.1 miles) would cross NFS lands. The route would also cross lands owned and managed by Alaska Department of Natural Resources, Sealaska, Kake Tribal Corporation, and the cities of Kake, Kupreanof, and Petersburg.

Two alternative route options from the SEAPA substation to the proposed Alaska DOTPF road corridor are currently being considered:

Option 1: Under this option the line would start at the SEAPA substation, and staying south of Petersburg, follow an existing gravel road for 3.5 miles east-northeast to Frederick Sound. At Frederick Sound, a submarine cable termination facility would connect the overhead line to a 3.1 mile long underwater cable, which would come ashore near Prolewy Point on Kupreanof Island, where it would connect to an overhead line that would then follow the proposed road corridor.

Option 2: Under this option the line would proceed from the SEAPA substation north along Mitkof Highway to near the narrowest point of the Wrangell Narrows. At that point, the line would turn west and cross Wrangell Narrows via a horizontal directional bore or buried cable that would extend approximately 1,400 feet. West of the Narrows the line would return to overhead construction, turn and go north approximately 1.7 miles where it would cross Petersburg Creek (a distance of approximately 800 feet) either via directional bore or overhead construction. The route would then continue overhead approximately 2.5 miles northeast to the proposed DOTPF road corridor.

Subsistence hearings, as provided for in Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA), will be conducted, if necessary, during the comment period on the Draft EIS.

Public Participation: This notice of intent initiates the scoping process which guides the development of the EIS. Public participation will be especially important at several points during the analysis. The Forest Service will be seeking information, comments, and assistance from Tribal Governments and corporations, Federal, State, and local agencies, individuals and organizations that may be interested in, or affected by, the proposed activities.

The public scoping period for this project extends from May 7, 2010 to June 7, 2010. Interested parties are encouraged to provide written input on the proposed project and submit their comments via email, regular mail, or fax to the addresses identified above under Addresses.

Public scoping meetings will be held from 5 to 7 pm in Petersburg on May 12, 2010 and in Kake on May 13, 2010. Both meetings will follow an open house format. Interested parties may drop in until 7 p.m. to obtain information about the project, speak with project team members, and provide scoping comments to the team.

Tentative Issues: Tentative issues identified for analysis in the EIS to date include the proposed crossings of Wrangell Narrows and Duncan Canal, as well as anadromous and resident fish-bearing streams, potential impacts to wildlife species listed under the Endangered Species Act, and potential impacts to Inventoried Roadless Areas.

Early Notice of Importance of Public Participation in Subsequent Environmental Review: A Draft EIS will be prepared for comment. The comment period on the Draft EIS will be 45 days from the date the EPA publishes the notice of availability in the **Federal Register.** It is important that reviewers provide their comments at such times and in such a way that they are useful

to the Agency's preparation of the EIS. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions. The submission of timely and specific comments can affect a reviewer's ability to participate in subsequent administrative review or judicial review.

Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this proposed action and will be available for public inspection. (Authority: 40 CFR 1501.7 and 1508.22; Forest Service Handbook 1909.15, Section 21). Comments submitted anonymously will be accepted and considered; however, those who submit anonymous comments will not have standing to appeal the subsequent decision under 36 CFR parts 215 or 217. Additionally, pursuant to 7 CFR 1.27(d), any person may request that the agency withhold a submission from the public record by showing how the Freedom of Information Act (FOIA) permits such confidentiality. Requesters should be aware that, under FOIA, confidentiality may be granted in only very limited circumstances, such as to protect trade secrets. The Forest Service will inform the requester of the agency's decision regarding the request for confidentiality, and where the request is denied, the agency will return the submission and notify the requester that the comments may be resubmitted with or without name and address within 7 days.

To assist the Forest Service in identifying and considering issues and concerns of the proposed action, comments during scoping and comments on the Draft EIS should be as specific as possible. It is also helpful if comments refer to specific pages or chapters of the Draft EIS. Comments may also address the adequacy of the Draft EIS or the merits of the alternatives formulated and discussed in the document. Reviewers may wish to refer to the Council on Environmental Quality Regulations for implementing the procedural provisions of the National Environmental Policy Act at 40 CFR 1503.3 in addressing these points.

Responsible Official: Forrest Cole, Forest Supervisor, Tongass National Forest, Federal Building, Ketchikan, Alaska 99901.

Nature of Decision To Be Made: The Forest Supervisor is the Responsible Official for this action and will decide whether or not to permit the construction of the proposed electric transmission line across NFS lands, along with the alternative route that will be followed, as well as mitigation measures and/or monitoring, as appropriate. The decision will be based on the information that is disclosed in the EIS. The responsible official will consider comments, responses, the disclosure of environmental consequences, and applicable laws, regulations, and policies in making the decision and will state that rationale in the Record of Decision.

(Authority: 40 CFR 1501.7 and 1508.22; Forest Service Handbook 1909.15, Section 21)

Dated: April 29, 2010.

Forrest Cole,

Forest Supervisor.

[FR Doc. 2010–10702 Filed 5–6–10; 8:45 am]

BILLING CODE 3410–11–P

DEPARTMENT OF AGRICULTURE

Forest Service

Shasta Trinity National Forest, South Fork Management Unit, California Salt Timber Harvest and Fuels Hazard Reduction Project

AGENCY: USDA Forest Service.

ACTION: Notice of intent to prepare a supplemental environmental impact statement.

SUMMARY: This notice revises the previous notice of intent, published on March 26, 2008, Vol. 73, No. 59, pages 15966 through 15968, to prepare an environmental impact statement for the Salt Timber Harvest and Fuels Reduction Project (Salt Project). A supplemental environmental impact statement will be prepared for the Salt Project to supplement wildlife management indicator assemblage analysis. This notice and supplement pertains only to the wildlife management indicator assemblage analysis for the Salt Project.

DATES: The draft supplemental environmental impact statement is expected July 2010, there will be a public comment period on the draft and then the final supplemental environmental impact statement is expected May 2011.

FOR FURTHER INFORMATION CONTACT: Bobbie DiMonte Miller, Shasta-Trinity National Forest, 3644 Avtech Parkway, Redding, CA 96002; telephone (530) 226–2425, e-mail *bdimontemiller@fs.fed.us.* Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8 a.m. and 8 p.m., Eastern Time, Monday through Friday.

SUPPLEMENTARY INFORMATION: The Forest Service is proposing to prepare a supplement to the final environmental impact statement for the Salt Project in accordance with FSH 1909.15, Chapter 10, Section 18.1 and Section 18.2.

J. Sharon Heywood, Shasta-Trinity National Forest Supervisor, signed a Record of Decision on October 20, 2009, based on the Salt Project Final Environmental Impact Statement (FEIS). On December 21, 2009, Denise Boggs filed a notice of appeal on behalf of Conservation Congress, Citizens for Better Forestry, Environmental Protection Information Center and Kiamath Forest Alliance. On February 5, 2010, Appeal Reviewing Officer (ARO) Tern Marceron, Forest Supervisor at Lake Tahoe Basin Management Unit, recommended that the Forest Supervisor's decision be affirmed on all issues with the exception of wildlife management indicator assemblage analysis. The ARO determined that the Salt Project FEIS did not document the effects of project alternatives on key habitat components consistent with the Shasta-Trinity National Forest Land and Resource Management Plan. The Appeal Deciding Officer agreed with the ARO's analysis. This notice pertains only to the supplement of management indicator assemblage effects information and analyses.

Purpose and Need for Action

Because the supplement will only address the additional wildlife management indicator assemblage information and analyses, the purpose and need for action remains the same as described in the October 2009 Salt Project FEIS, Chapter 1, pages 3 through 16.

Proposed Action

The proposed action is the same as described in Chapter 1 of the October 2009 Salt Project FEIS (Chapter 1, pages 16 & 17). That document is available on the Shasta-Trinity National Forest Web site at *www.fs.usda.gov/stnf.* Under Highlights click on Ongoing NEPA projects.

Responsible Official

J. Sharon Heywood, Shasta-Trinity National Forest Supervisor, 3644 Avtech Parkway, Redding, CA 96002.

Nature of Decision To Be Made

The Responsible Official will review the supplemental information and determine what, if any, modifications should be made to the October 20, 2009, decision. A new decision will be issued.

Scoping Process

Scoping is not required for supplements to environmental impact statements (40 CFR 1502.9(c)(4). A history of scoping and public involvement to date, starting in 2006, is detailed in Chapter 1 of the October 2009 Salt Project FEIS (Chapter 1, pages 17–18).

Dated: April 28, 2010.

Scott G. Armentrout,

Deputy Forest Supervisor, Shasta-Trinity National Forest.

[FR Doc. 2010–10471 Filed 5–6–10; 8:45 am]

BILLING CODE 3410–11–M

DEPARTMENT OF AGRICULTURE

Forest Service

Intermountain Region, Boise National Forest, Emmett Ranger District; Idaho Scriver Creek Integrated Restoration Project

AGENCY: Forest Service, USDA.

ACTION: Notice of intent to prepare an environmental impact statement.

SUMMARY: The Emmett Ranger District of the Boise National Forest will prepare an environmental impact statement (EIS) for the integrated restoration project in the Scriver Creek subwatershed. The 11,500-acre project is located approximately 6 miles north of Crouch, Idaho. The Scriver Creek Integrated Restoration Project proposes to undertake vegetation condition restoration, improve watershed conditions, and utilize wood products resulting from restoration activities to support local and regional communities through a variety of activities including commercial and noncommercial vegetation management and road system modifications and maintenance.

DATES: Comments concerning the scope of the analysis must be received by June 7, 2010. The draft environmental impact statement is expected February 2011 and the final environmental impact statement is expected June 2011.

ADDRESSES: Send written comments to 1805 Highway 16, Room 5, Emmett, ID 83617. Comments may also be sent via e-mail to *comments-intermtn-boise-emmett@fs.fed.us,* or via facsimile to 208–365–7307.

It is important that reviewers provide their comments at such times and in such a way that they are useful to the Agency's preparation of the EIS. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions.

Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this proposed action. Comments submitted anonymously will be accepted and considered, however.

FOR FURTHER INFORMATION CONTACT: Ann Roseberry, Project Team Leader, 208–365–7000. Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8 a.m. and 8 p.m., Eastern Time, Monday through Friday.

SUPPLEMENTARY INFORMATION:

Purpose and Need for Action

Three purposes have been identified for the project: (1) Move toward restoration of Forest Plan desired vegetation conditions by manipulating the forest structure, density, and species composition in order to accelerate development of larger tree size class stands and old forest habitat; (2) improve watershed conditions and reduce road-related impacts to wildlife, fish, soil, and water resources; and (3) utilize wood products resulting from restoration treatments to support local and regional economies.

Proposed Action

The Proposed Action would undertake commercial timber harvest on about 3,265 acres utilizing tractor/off-road jammer (1,124 acres), skyline (926 acres), and helicopter (1,215 acres) logging systems. In addition, all acres treated by commercial timber activities (about 3,265 acres) would be followed by thinning of submerchantable trees. About 839 acres of existing plantations would be thinned from below of small diameter (typically less than 8 inches diameter at breast height (d.b.h.). Of these acres, approximately 163 acres of these thinning activities would occur within riparian conservation areas (RCAs). About 18 helicopter landing would be used or developed to facility commercial timber harvest activities. Approximately 21.5 million board feet (MMBF) would be provided as sawlogs to local and/or regional processing facilities.

The Proposed Action would construct about 2.4 miles of new specified National Forest System (NFS) roads and 1.0 mile of temporary road. About 4.3 miles of road realignment on NFS road 696 would occur to provide long-term accress and eliminate segements of the road within RCA corridors. Approximately 18.5 miles of NFS roads would be decommissioned. Roadway improvements, such as spot surface aggregate placement and drainage improvements, would be undertaken on NFS roads (in particular RCA roads) where needed. Aquatic organism passage (AOP), *i.e.,* fish passage, would be restored by replacing the existing culverts on NFS roads 693, 693A and 695 with AOP passable structures. Application of up to 300 feet of surface gravel applied to both sides of road/stream crossings when located on perennial streams, for all NFS roads to be used for timber harvest activities (except for NFS roads proposed to be decommissioned).

Possible Alternatives

The only other alternative identified at this time is the "No Action" alternative.

Responsible Official

Boise National Forest Supervisor, Cecilia R. Seesholtz.

Nature of Decision To Be Made

The Boise National Forest Supervisor will decide the following: (1) Should vegetation restoration activities be carried out within the project area at this time, and if so, which stands should be treated and what silvicultural systems be applied?; (2) what, if any, changes to the NFS road system should be made?; and (3) what design features, mitigation measures, and/or monitoring should be applied to the project? This decision will be made within the scope of the 2003 Boise National Forest Land and Resource Management Plan (Forest Plan), as anticipated to be amended later in 2010.

Addresses

Project information is available on the Boise National Forest Web site, *http://fs.usda.gov/boise* (click on Scriver Integrated Restoration Project).

Scoping Process

This notice of intent initiates the scoping process, which guides the development of the environmental impact statement.

It is important that reviewers provide their comments at such times and in such manner that they are useful to the agency's preparation of the environmental impact statement. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions.

Dated: April 30, 2010.

Cecilia R. Seesholtz,

Forest Supervisor, Boise National Forest.

[FR Doc. 2010–10662 Filed 5–6–10; 8:45 am]

BILLING CODE 3410–11–M

DEPARTMENT OF AGRICULTURE

Forest Service

Deschutes and Ochoco National Forests Resource Advisory Committee

AGENCY: Forest Service, USDA.

ACTION: Notice of meeting.

SUMMARY: The Deschutes and Ochoco National Forests Resource Advisory Committee will meet in Redmond, Oregon. The purpose of the meeting is to review proposed projects and make recommendations under Title II (division C of Pub. L. 10–343 reauthorized and amended the Secure rural Schools and community Self-Determination Act of 2000 (SRS Act) as originally enacted in Public Law 106–393.

DATES: The meeting will be held May 12, 2010 from 8 a.m. to 5 p.m.

ADDRESSES: The meeting will be held at the office of the Central Oregon Intergovernmental Council, 2363 SW. Glacier Place, Redmond, Oregon 97756. Send written comments to Jeff Walter as Designated Federal Official, for the Deschutes and Ochoco National Forests Resource Advisory Committee, c/o Forest Service, USDA, Ochoco National Forest, 3160 NE. 3rd St., Prineville, OR 97754 or electronically to *jwalter@fs.fed.us.*

FOR FURTHER INFORMATION CONTACT: Jeff Walter, Designated Federal Official, Ochoco National Forest, 541–416–6625.

SUPPLEMENTARY INFORMATION: The meeting is open to the public. Committee discussion is limited to Forest Service staff and Committee members. However, persons who wish to bring Title II matters to the attention of the Committee may file written statements with the Committee staff before the meeting. A public input session will be provided and individuals who made written requests by May 10, 2010 will have the opportunity to address the Committee at the session.

Dated: April 28, 2010.

Jeff Walter,

Designated Federal Official.

[FR Doc. 2010–10601 Filed 5–6–10; 8:45 am]

BILLING CODE 3410–11–M

DEPARTMENT OF AGRICULTURE

Forest Service

Medbow-Routt Resource Advisory Committee

AGENCY: Forest Service, USDA.

ACTION: Notice of meeting.

SUMMARY: The MedBow-Routt Resource Advisory Committee will meet in Laramie, Wyoming. The committee is meeting as authorized under the Secure Rural Schools and Community Self-Determination Act (Pub. L. 110–343) and in compliance with the Federal Advisory Committee Act. The purpose of the meeting is orientation and RAC overview for members to the newly established RAC, and selection of chair-person.

DATES: The meeting will be held May 26, 9:30 a.m.–3:30 p.m.

ADDRESSES: The meeting will be held at Forest Supervisor's Office, 2468 Jackson Street, Laramie, Wyoming. Written comments should be sent to Phil Cruz, RAC DFO, 2468 Jackson Street, Laramie, Wyoming 82070. Comments may also be sent via e-mail to *pcruz@fs.fed.us,* or via facsimile to 307–745–2467.

All comments, including names and addresses when provided, are placed in the record and are available for public inspection and copying. The public may inspect comments received at the Forest Supervisor's Office, 2468 Jackson Street, Laramie, Wyoming.

FOR FURTHER INFORMATION CONTACT: Diann Ritschard, RAC Coordinator, 925 Weiss Drive, Steamboat Springs, CO 80487, 970–870–2187, *dritschard@fs.fed.us.*

Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8 a.m. and 8 p.m., Eastern Standard Time, Monday through Friday.

SUPPLEMENTARY INFORMATION: The meeting is open to the public. The following business will be conducted: Secure Rural School & Federal Advisory Committee Overview; Roles and Responsibilities of RAC; Rules/Operational Guides and Bylaws; Flow of Work and Setting Future Agendas; Project Process, Submission Form and Deadline; election of RAC Chairperson; Public Forum Discussion. Persons who wish to bring related matters to the attention of the Committee may file written statements with the Committee staff before or after the meeting. Public input sessions will be provided and individuals who make written requests by May 23, 2010 will have the opportunity to address the Comittee at those sessions.

Dated: April 27, 2010.

Phil Cruz,

Deputy Forest Supervisor.

[FR Doc. 2010–10469 Filed 5–6–10; 8:45 am]

BILLING CODE 3410–11–M

DEPARTMENT OF AGRICULTURE

National Institute of Food and Agriculture

Solicitation of Input From Stakeholders Regarding the Agriculture and Food Research Initiative (AFRI)

AGENCY: National Institute of Food and Agriculture, USDA.

ACTION: Notice of public meeting and request for stakeholder input.

SUMMARY: In Fiscal Year 2009, the National Institute of Food and Agriculture (NIFA), formerly known as the Cooperative State Research, Education, and Extension Service (CSREES), created a new research, education, and extension program called the Agriculture and Food Research Initiative (AFRI). The AFRI process has been iterative. Pursuant to the requirements of section 7406 of the Food, Conservation, and Energy Act of 2008, beginning in September of 2008 CSREES solicited public comment from persons who use or conduct research, extension, or education regarding the implementing regulation to be developed for this new program. In an effort to improve the quality of the AFRI program, NIFA is again holding a public meeting and soliciting public comments for consideration in the development of the Fiscal Year 2011 AFRI program solicitations. All comments must be received by close of business June 7, 2010, to be considered.

DATES: The meeting will be held on Wednesday, June 2, 2010, from 8:30 a.m. to 4:30 p.m.

ADDRESSES: The meeting will be held at the One Washington Circle Hotel, 1 Washington Circle, NW., Washington, DC 20037. You may submit comments, identified by Docket Number NIFA–2010–0001 by any of the following methods to the NIFA Docket Clerk:

Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.

E-mail: afri@nifa.usda.gov. Include Docket Number NIFA–2010–0001 in the subject line of the message.

Fax: 202–401–1782.

Mail: Paper, disk or CD–ROM submissions should be submitted to AFRI; Competitive Programs (CP) Unit; National Institute of Food and Agriculture; U.S. Department of Agriculture; STOP 2240; 1400 Independence Avenue, SW.; Washington, DC 20250–2240.

Hand Delivery/Courier: AFRI; Competitive Programs (CP) Unit; National Institute of Food and Agriculture; U.S. Department of

Agriculture; Room 2457, Waterfront Centre; 800 9th Street, SW.; Washington, DC 20024.

Instructions:

All submissions received must include the agency name and the Docket Number NIFA–2010–0001. All comments received will be posted to *http://www.regulations.gov,* including any personal information provided.

FOR FURTHER INFORMATION CONTACT: Ms. Terri Joya, (202) 401–1761 (phone), (202) 401–1782 (fax), or *tjoya@nifa.usda.gov.*

SUPPLEMENTARY INFORMATION:

Additional Meeting and Comment Procedures

Persons wishing to present oral comments at the Wednesday, June 2, 2010 meeting are requested to pre-register by contacting Ms. Terri Joya at (202) 401–1761, by fax at (202) 401–1782 or by e-mail to tjoya@nifa.usda.gov. Participants may reserve one 5-minute comment period. More time may be available, depending on the number of people wishing to make a presentation and the time needed for questions following presentations. Reservations will be confirmed on a first-come, first-served basis. All other attendees may register at the meeting. Written comments may also be submitted for the record at the meeting. All comments must be received by close of business June 7, 2010 to be considered. All comments and the official transcript of the meeting, when they become available, may be reviewed on the NIFA Web page for six months. Participants who require a sign language interpreter or other special accommodations should contact Ms. Joya as directed above.

Background and Purpose

Section 7406 of the Food, Conservation, and Energy Act of 2008 (Pub. L. 110–246) amended subsection 2(b) of the Competitive, Special, and Facilities Research Grant Act (7 U.S.C. 450i(b)) authorizing the Secretary of Agriculture to establish a new competitive grant program to provide funding for fundamental and applied research, extension, and education to address food and agricultural sciences. Subject to the availability of appropriations to carry out this program, the Secretary may award grants to State agricultural experiment stations; colleges and universities; university research foundations; other research institutions and organizations; Federal agencies; national laboratories; private organizations or corporations; individuals; or any group consisting of two or more of the aforementioned entities. Grants shall be awarded to address priorities in United States agriculture in the following areas: (A) Plant health and production and plant products; (B) Animal health and production and animal products; (C) Food safety, nutrition, and health; (D) Renewable energy, natural resources, and environment; (E) Agriculture systems and technology; and (F) Agriculture economics and rural communities. To the maximum extent practicable, NIFA, in coordination with the Under Secretary for Research, Education, and Economics (REE), will make awards for high priority research, education, and extension, taking into consideration, when available, the determinations made by the National Agricultural Research, Extension, Education, and Economics Advisory Board. The authority to carry out this program has been delegated to NIFA through the Undersecretary for REE.

NIFA is holding a public meeting to obtain comments to consider in developing the Fiscal Year 2011 solicitations for the AFRI competitive grants program. The meeting is open to the public. Written comments and suggestions on issues that may be considered in the meeting may be submitted to the NIFA Docket Clerk at the address above.

Summary of Agriculture and Food Research Initiative

The program authorizes $700 million in grants for FY 2008–12, of which the Secretary may retain no more than 4% for administrative costs. Funds will be available for obligation for a two-year period beginning in the fiscal year for which funds are first made available. Grants will be awarded on the basis of merit, quality, and relevance and may have terms of up to 10 years.

Of the AFRI funds allocated to research activities, section 7406 directs 60 percent toward grants for fundamental (or basic) research, and 40 percent toward applied research. Of the AFRI funds allocated to fundamental research, not less than 30 percent of AFRI grants will be directed toward research by multidisciplinary teams. In addition, the law specifies that of the total amount appropriated for AFRI, not less than 30 percent is to be used for integrated programs.

Implementation Plans

NIFA plans to consider stakeholder input received from this public meeting as well as other written comments in developing the Fiscal Year 2011 solicitations for this program.

Done at Washington, DC, this 3rd day of May 2010.

Meryl Broussard,

Interim Deputy Director, National Institute of Food and Agriculture.

[FR Doc. 2010–10690 Filed 5–6–10; 8:45 am]

BILLING CODE 3410–22–P

DEPARTMENT OF AGRICULTURE

Foreign Agricultural Service

WTO Agricultural Safeguard Trigger Levels

AGENCY: Foreign Agricultural Service, USDA.

ACTION: Notice of product coverage and trigger levels for safeguard measures provided for in the World Trade Organization (WTO) Agreement on Agriculture.

SUMMARY: This notice lists the updated quantity trigger levels for products which may be subject to additional import duties under the safeguard provisions of the WTO Agreement on Agriculture. This notice also includes the relevant period applicable for the trigger levels on each of the listed products.

DATES: *Effective Date:* May 7, 2010.

FOR FURTHER INFORMATION CONTACT: Safeguard Staff, Import Policies and Export Reporting Division, Office of Trade Programs, Foreign Agricultural Service, U.S. Department of Agriculture, Stop 1021, 1400 Independence Avenue, SW., Washington, DC 20250–1021; or by telephone at (202) 720–0638, or by e-mail at *itspd@fas.usda.gov.*

SUPPLEMENTARY INFORMATION: Article 5 of the WTO Agreement on Agriculture provides that additional import duties may be imposed on imports of products subject to tariffication as a result of the Uruguay Round, if certain conditions are met. The agreement permits additional duties to be charged if the price of an individual shipment of imported products falls below the average price for similar goods imported during the years 1986–88 by a specified percentage. It also permits additional duties to be imposed if the volume of imports of an article exceeds the average of the most recent 3 years for which data are available by 5, 10, or 25 percent, depending on the article. These additional duties may not be imposed on quantities for which minimum or current access commitments were made during the Uruguay Round negotiations, and only one type of safeguard, price or quantity, may be applied at any given time to an article.

Section 405 of the Uruguay Round Agreements Act requires that the President cause to be published in the **Federal Register** information regarding the price and quantity safeguards, including the quantity trigger levels, which must be updated annually based upon import levels during the most recent 3 years. The President delegated this duty to the Secretary of Agriculture in Presidential Proclamation No. 6763, dated December 23, 1994, 60 FR 1005 (Jan. 4, 1995). The Secretary of Agriculture further delegated the duty to the Administrator of the Foreign Agricultural Service (7 CFR 2.43(a)(2) (2007)). The Annex to this notice contains the updated quantity trigger levels.

Additional information on the products subject to safeguards and the additional duties which may apply can be found in subchapter IV of Chapter 99 of the Harmonized Tariff Schedule of the United States (2010) and in the Secretary of Agriculture's Notice of Uruguay Round Agricultural Safeguard Trigger Levels, published in the **Federal Register** at 60 FR 427 (Jan. 4, 1995).

Notice: As provided in section 405 of the Uruguay Round Agreements Act, consistent with Article 5 of the Agreement on Agriculture, the safeguard quantity trigger levels previously notified are superceded by the levels indicated in the Annex to this notice. The definitions of these products were provided in the Notice of Uruguay Round Agricultural Safeguard Action published in the **Federal Register,** at 60 FR 427 (Jan. 4, 1995).

Issued at Washington, DC, April 29, 2010.

John D. Brewer,

Administrator, Foreign Agricultural Service.

ANNEX—QUANTITY-BASED SAFEGUARD TRIGGER

Product	Trigger level	Period
Beef	270,519 mt	January 1, 2010 to December 31, 2010.
Mutton	4,503 mt	January 1, 2010 to December 31, 2010.
Cream	1,165,099 liters	January 1, 2010 to December 31, 2010.
Evaporated or Condensed Milk	3,536,146 kilograms	January 1, 2010 to December 31, 2010.
Nonfat Dry Milk	393,499 kilograms	January 1, 2010 to December 31, 2010.
Dried Whole Milk	2,397,493 kilograms	January 1, 2010 to December 31, 2010.
Dried Cream	27,330 kilograms	January 1, 2010 to December 31, 2010.
Dried Whey/Buttermilk	30,238 kilograms	January 1, 2010 to December 31, 2010.
Butter	7,311,166 kilograms	January 1, 2010 to December 31, 2010.
Butter Oil and Butter Substitutes	6,985,605 kilograms	January 1, 2010 to December 31, 2010.
Dairy Mixtures	43,535,705 kilograms	January 1, 2010 to December 31, 2010.
Blue Cheese	4,846,863 kilograms	January 1, 2010 to December 31, 2010.
Cheddar Cheese	12,272,710 kilograms	January 1, 2010 to December 31, 2010.
American-Type Cheese	7,093,001 kilograms	January 1, 2010 to December 31, 2010.
Edam/Gouda Cheese	7,019,833 kilograms	January 1, 2010 to December 31, 2010.
Italian-Type Cheese	22,355,614 kilograms	January 1, 2010 to December 31, 2010.
Swiss Cheese with Eye Formation	28,867,494 kilograms	January 1, 2010 to December 31, 2010.
Gruyere Process Cheese	4,398,721 kilograms	January 1, 2010 to December 31, 2010.
Lowfat Cheese	848,545 kilograms	January 1, 2010 to December 31, 2010.
NSPF Cheese	46,400,350 kilograms	January 1, 2010 to December 31, 2010.
Peanuts	15,172 mt	April 1, 2009 to March 31, 2010.
	18,176 mt	April 1, 2010 to March 31, 2011.
Peanut Butter/Paste	4,280 mt	January 1, 2010 to December 31, 2010.
Raw Cane Sugar	1,407,556 mt	October 1, 2009 to September 30, 2010.
	1,142,815 mt	October 1, 2010 to September 30, 2011.
Refined Sugar and Syrups	191,180 mt	October 1, 2009 to September 30, 2010.
	176,800 mt	October 1, 2010 to September 30, 2011.
Blended Syrups	107 mt	October 1, 2009 to September 30, 2010.
	134 mt	October 1, 2010 to September 30, 2011.
Articles Over 65% Sugar	578 mt	October 1, 2009 to September 30, 2010.
	277 mt	October 1, 2010 to September 30, 2011.
Articles Over 10% Sugar	15,617 mt	October 1, 2009 to September 30, 2010.
	15,083 mt	October 1, 2010 to September 30, 2011.
Sweetened Cocoa Powder	1,249 mt	October 1, 2009 to September 30, 2010.
	1,054 mt	October 1, 2010 to September 30, 2011.
Chocolate Crumb	10,081,708 kilograms	January 1, 2010 to December 31, 2010.
Lowfat Chocolate Crumb	226,647 kilograms	January 1, 2010 to December 31, 2010.
Infant Formula Containing Oligosaccharides	10,530 kilograms	January 1, 2010 to December 31, 2010.
Mixes and Doughs	315 mt	October 1, 2009 to September 30, 2010.
	383 mt	October 1, 2010 to September 30, 2011.
Mixed Condiments and Seasonings	176 mt	October 1, 2009 to September 30, 2010.
	280 mt	October 1, 2010 to September 30, 2011.
Ice Cream	2,869,565 liters	January 1, 2010 to December 31, 2010.
Animal Feed Containing Milk	32,419 kilograms	January 1, 2010 to December 31, 2010.
Short Staple Cotton	699,482 kilograms	September 20, 2009 to September 19, 2010.
	591,350 kilograms	September 20, 2010 to September 19, 2011.
Harsh or Rough Cotton	0 kilograms	August 1, 2009 to July 31, 2010.
	0 kilograms	August 1, 2010 to July 31, 2011.
Medium Staple Cotton	688,341 kilograms	August 1, 2009 to July 31, 2010.
	149,148 kilograms	August 1, 2010 to July 31, 2011.
Extra Long Staple Cotton	3,656,233 kilograms	August 1, 2009 to July 31, 2010.
	2,017,042 kilograms	August 1, 2010 to July 31, 2011.
Cotton Waste	395,745 kilograms	September 20, 2009 to September 19, 2010.
	432,133 kilograms	September 20, 2010 to September 19, 2011.

ANNEX—QUANTITY-BASED SAFEGUARD TRIGGER—Continued

Product	Trigger level	Period
Cotton, Processed, Not Spun	3,995 kilograms	September 11, 2009 to September 10, 2010.
	31,338 kilograms	September 11, 2010 to September 10, 2011.

[FR Doc. 2010–10878 Filed 5–6–10; 8:45 am]

BILLING CODE 3410–10–P

DEPARTMENT OF COMMERCE

Bureau of Industry and Security

Action Affecting Export Privileges; Orion Air, S.L. and Syrian Pearl Airlines; Order Renewing Order Temporarily Denying Export Privileges

Orion Air, S.L., Canada Real de Merinas, 7 Edificio 5, 3'A, Eissenhower business center, 28042 Madrid, Spain
Ad. de las Cortes Valencianas no 37, Esc.A Puerta 45 46015 Valencia, Spain
Syrian Pearl Airlines, Damascus International Airport, Damascus, Syria, Respondents

Pursuant to Section 766.24 of the Export Administration Regulations, 15 CFR parts 730–774 (2009) ("EAR" or the "Regulations"), I hereby grant the request of the Bureau of Industry and Security ("BIS") to renew for 180 days the Order Temporarily Denying the Export Privileges of Respondents Orion Air, S.L. ("Orion Air") and Syrian Pearl Airlines (collectively, "Respondents"), as I find that renewal of the temporary denial order ("TDO" or the "Order") is necessary in the public interest to prevent an imminent violation of the EAR.

I. Procedural History

On May 7, 2009, then-Acting Assistant Secretary of Commerce for Export Enforcement Kevin Delli-Colli signed an Order Temporarily Denying the Export Privileges of the Respondents for 180 days on the grounds that its issuance was necessary in the public interest to prevent an imminent violation of the Regulations. Pursuant to Section 766.24(a), the TDO was issued *ex parte* and was effective upon issuance. Copies of the TDO were sent to each Respondent in accordance with section 766.5 of the Regulations and the Order was published in the **Federal Register** on May 26, 2009.[1] Thereafter, on November 2, 2009, Acting Assistant Secretary Delli-Colli issued an Order renewing the TDO for an additional 180 days.[2] The current Order would expire on May 1, 2010, unless renewed in accordance with section 766.24 of the Regulations.

On April 9, 2010, BIS, through its Office of Export Enforcement ("OEE"), filed a written request for renewal of the TDO against the Respondents for an additional 180 days and served a copy of its request on the Respondents in accordance with section 766.5 of the Regulations. No opposition to renewal of the TDO has been received from either Orion Air or Syrian Pearl Airlines.

II. Discussion

A. Legal Standard

Pursuant to section 766.24(d)(3) of the EAR, the sole issue to be considered in determining whether to continue a TDO is whether the TDO should be renewed to prevent an imminent violation of the EAR, as "imminent" violation is defined in section 766.24. "A violation may be 'imminent' either in time or in degree of likelihood." 15 CFR 766.24(b)(3). BIS may show "either that a violation is about to occur, or that the general circumstances of the matter under investigation or case under criminal or administrative charges demonstrate a likelihood of future violations." *Id.* As to the likelihood of future violations, BIS may show that "the violation under investigation or charges is significant, deliberate, covert and/or likely to occur again, rather than technical and negligent[.]" *Id.* A "lack of information establishing the precise time a violation may occur does not preclude a finding that a violation is imminent, so long as there is sufficient reason to believe the likelihood of a violation." *Id.*

B. Findings

As part of its initial TDO request, BIS presented evidence that on or about May 1, 2009, Orion Air re-exported a BAE 146–300 aircraft (tail number EC–JVO) to Syria, and specifically to Syrian Pearl Airlines, without the U.S. Government authorization required by General Order No. 2 of Supplement 1 to Part 736 of the EAR. The aircraft is subject to the Regulations because it contains greater than a 10-percent de minimis amount of U.S.-origin content. Orion Air engaged in this re-export transaction despite having been directly informed of the export licensing requirements by the U.S. Government. Moreover, Orion Air not only engaged in this conduct after having received actual as well as constructive notice of the applicable license requirements, but then sought to evade the Regulations and U.S. export controls by giving the U.S. Government false assurances that it would put the transaction on hold due to the U.S. Government's concerns.

BIS also produced evidence that the re-exported aircraft bore the livery, colors and logos of Syrian Pearl Airlines, a national of Syria, a Country Group E:1 destination; was flight capable; and under the terms of the lease agreement was to be based in and operated out of Syria during the lease term. The record also shows that the re-exported aircraft currently remains in Syria under the control of Syrian Pearl Airlines.

In addition to the unauthorized re-export described above, Acting Assistant Secretary Delli-Colli also concluded that additional violations were imminent based on statements by Orion Air to the U.S. Government in May 2009 that Orion Air planned to re-export an additional BAE 146–300 aircraft (tail number EC–JVJ) to Syria, and specifically to Syrian Pearl Airlines. This second aircraft was at the time undergoing maintenance in the United Kingdom, and remains located there. Moreover, the agreement between Orion Air and Syrian Pearl Airlines involved both aircraft. Based on my review of the record, I find that the facts and circumstances that led to the issuance of the initial TDO and the November 2009 renewal Order continue to show that renewal of the TDO for an additional 180 days is necessary and in the public interest to prevent an imminent violation of the EAR. Absent renewal of the TDO, there remains a substantial continued risk that the second aircraft will be re-exported contrary to the Regulations, given that, *inter alia,* Orion Air acted with actual knowledge and took deceptive and evasive action. This finding alone would justify renewal. There also would be a substantial risk that, absent renewal of the TDO, the first aircraft, which remains in Syria, would

[1] 74 FR 24,786.

[2] The November 2, 2009 renewal Order was effective immediately and was published in the **Federal Register** on November 9, 2009 (74 FR 57626).

be operated or disposed of in violation of the Regulations. Furthermore, renewal of the TDO is needed to give notice to persons and companies in the United States and abroad that they should cease dealing with the Respondents in export transactions involving items subject to the EAR.

It is therefore ordered:

First, that, Orion Air, S.L., Canada Real de Merinas, 7 Edificio 5, 3'A, Eissenhower business center, 28042 Madrid, Spain, and Ad. de las Cortes Valencianas no 37, Esc.A Puerta 4546015 Valencia, Spain; and Syrian Pearl Airlines, Damascus International Airport, Damascus, Syria (each a "Denied Person" and collectively the "Denied Persons") may not, directly or indirectly, participate in any way in any transaction involving any commodity, software or technology (hereinafter collectively referred to as "item") exported or to be exported from the United States that is subject to the Export Administration Regulations ("EAR"), or in any other activity subject to the EAR including, but not limited to:

A. Applying for, obtaining, or using any license, license exception, or export control document;

B. Carrying on negotiations concerning, or ordering, buying, receiving, using, selling, delivering, storing, disposing of, forwarding, transporting, financing, or otherwise servicing in any way, any transaction involving any item exported or to be exported from the United States that is subject to the EAR, or in any other activity subject to the EAR; or

C. Benefiting in any way from any transaction involving any item exported or to be exported from the United States that is subject to the EAR, or in any other activity subject to the EAR.

Second, that no person may, directly or indirectly, do any of the following:

A. Export or reexport to or on behalf of any Denied Person any item subject to the EAR;

B. Take any action that facilitates the acquisition or attempted acquisition by any Denied Person of the ownership, possession, or control of any item subject to the EAR that has been or will be exported from the United States, including financing or other support activities related to a transaction whereby any Denied Person acquires or attempts to acquire such ownership, possession or control;

C. Take any action to acquire from or to facilitate the acquisition or attempted acquisition from any Denied Person of any item subject to the EAR that has been exported from the United States;

D. Obtain from any Denied Person in the United States any item subject to the EAR with knowledge or reason to know that the item will be, or is intended to be, exported from the United States; or

E. Engage in any transaction to service any item subject to the EAR that has been or will be exported from the United States and which is owned, possessed or controlled by any Denied Person, or service any item, of whatever origin, that is owned, possessed or controlled by any Denied Person if such service involves the use of any item subject to the EAR that has been or will be exported from the United States. For purposes of this paragraph, servicing means installation, maintenance, repair, modification or testing.

Third, that after notice and opportunity for comment as provided in section 766.23 of the EAR, any other person, firm, corporation, or business organization related to any of the Respondents by affiliation, ownership, control, or position of responsibility in the conduct of trade or related services may also be made subject to the provisions of this Order.

Fourth, that this Order does not prohibit any export, reexport, or other transaction subject to the EAR where the only items involved that are subject to the EAR are the foreign-produced direct product of U.S.-origin technology.

In accordance with the provisions of section 766.24(e) of the EAR, the Respondents may, at any time, appeal this Order by filing a full written statement in support of the appeal with the Office of the Administrative Law Judge, U.S. Coast Guard ALJ Docketing Center, 40 South Gay Street, Baltimore, Maryland 21202–4022.

In accordance with the provisions of section 766.24(d) of the EAR, BIS may seek renewal of this Order by filing a written request not later than 20 days before the expiration date. The Respondents may oppose a request to renew this Order by filing a written submission with the Assistant Secretary for Export Enforcement, which must be received not later than seven days before the expiration date of the Order.

A copy of this Order shall be served on the Respondents and shall be published in the **Federal Register**.

This Order is effective upon issuance and shall remain in effect for 180 days.

Issued this 29th day of April 2010.

David W. Mills,

Assistant Secretary of Commerce for Export Enforcement.

[FR Doc. 2010–10812 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–DT–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Proposed Information Collection; Comment Request; Regional Economic Data Collection Program for Southeast Alaska

AGENCY: National Oceanic and Atmospheric Administration (NOAA).

ACTION: Notice.

SUMMARY: The Department of Commerce, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995.

DATES: Written comments must be submitted on or before July 6, 2010.

ADDRESSES: Direct all written comments to Diana Hynek, Departmental Paperwork Clearance Officer, Department of Commerce, Room 6625, 14th and Constitution Avenue, NW., Washington, DC 20230 (or via the Internet at *dHynek@doc.gov*).

FOR FURTHER INFORMATION CONTACT: Requests for additional information or copies of the information collection instrument and instructions should be directed to Chang Seung, (206) 526–4250 or *Chang.Seung@noaa.gov.*

SUPPLEMENTARY INFORMATION:

I. Abstract

The regional or community economic analysis of proposed fishery management policies is required by the Magnuson-Stevens Fishery Conservation and Management Act, National Environmental Policy Act, and Executive Order 12866, among others. To satisfy these mandates and inform policymakers and the public of the likely regional economic impacts associated with fishery management policies, appropriate economic models and the data to implement them are needed.

Much of the data required for regional economic analysis associated with Southeast Alaska fisheries are either unavailable or unreliable. Accurate fishery-level data on employment, labor income, and expenditures in the Southeast Alaska fishery and related industries are not currently available but are needed to estimate the effects of fisheries on the economy of Southeast Alaska. In this planned survey effort, data on these important regional economic variables will be collected and used to develop models that will

provide more reliable estimates and significantly improve policymakers' ability to assess policy effects on fishery-dependent communities in Southeast Alaska. The survey will be conducted one-time only. The survey (mailed) will request data on employment, labor payments, and other expenditures from owners of 1,700 vessels that delivered fish to Southeast Alaska processors in 2009.

II. Method of Collection

Mail surveys will be used.

III. Data

OMB Control Number: None.

Form Number: None.

Type of Review: Regular submission.

Affected Public: Business or other for-profit organizations.

Estimated Number of Respondents: 425.

Estimated Time per Response: 20 minutes.

Estimated Total Annual Burden Hours: 142.

Estimated Total Annual Cost to Public: $0 in recordkeeping/reporting costs.

IV. Request for Comments

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden (including hours and cost) of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology.

Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval of this information collection; they also will become a matter of public record.

Dated: May 4, 2010.

Gwellnar Banks,

Management Analyst, Office of the Chief Information Officer.

[FR Doc. 2010–10780 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–22–P

U.S. DEPARTMENT OF COMMERCE

Foreign–Trade Zones Board

[Docket 29–2010]

Foreign–Trade Zone 125 - South Bend, Indiana

Application for Reorganization under Alternative Site Framework

An application has been submitted to the Foreign–Trade Zones (FTZ) Board (the Board) by the St. Joseph County Airport Authority, grantee of Foreign–Trade Zone 125, requesting authority to reorganize the zone under the alternative site framework (ASF) adopted by the Board (74 FR 1170, 1/12/09; correction 74 FR 3987, 1/22/09). The ASF is an option for grantees for the establishment or reorganization of general–purpose zones and can permit significantly greater flexibility in the designation of new "usage–driven" FTZ sites for operators/users located within a grantee's "service area" in the context of the Board's standard 2,000–acre activation limit for a general–purpose zone project. The application was submitted pursuant to the Foreign–Trade Zones Act, as amended (19 U.S.C. 81a–81u) and the regulations of the Board (15 CFR part 400). It was formally filed on April 29, 2010.

FTZ 125 was approved by the Board on March 11, 1986 (Board Order 326, 51 F.R. 10564; 3/27/86). After approval of a minor boundary modification (A(27f)-33–95), the general–purpose zone currently consists of the following two sites: *Site 1*: (7 acres) - located at 2809 North Foundation Drive within the Airport Industrial Park, South Bend (St. Joseph County); and *Site 2*: (21 acres) - located at 1507 South Olive Street, South Bend (St. Joseph County), Indiana.

The grantee's proposed service area under the ASF would be St. Joseph, Elkhart, Kosciusko, Marshall, LaPorte and Starke Counties, Indiana, as described in the application. If approved, the grantee would be able to serve sites throughout the service area based on companies' needs for FTZ designation. The proposed service area is within and adjacent to the Chicago Customs and Border Protection port of entry.

The applicant is requesting authority to reorganize its existing zone project to include both of the existing sites as "magnet" sites. The ASF allows for the possible exemption of one magnet site from the "sunset" time limits that generally apply to sites under the ASF, and the applicant proposes that Site 2 be so exempted. No usage–driven sites are being requested at this time. Because the ASF only pertains to establishing or reorganizing a general–purpose zone, the application would have no impact on FTZ 125's authorized subzones.

In accordance with the Board's regulations, Claudia Hausler of the FTZ Staff is designated examiner to evaluate and analyze the facts and information presented in the application and case record and to report findings and recommendations to the Board.

Public comment is invited from interested parties. Submissions (original and 3 copies) shall be addressed to the Board's Executive Secretary at the address below. The closing period for their receipt is July 6, 2010. Rebuttal comments in response to material submitted during the foregoing period may be submitted during the subsequent 15-day period to July 21, 2010.

A copy of the application will be available for public inspection at the Office of the Executive Secretary, Foreign–Trade Zones Board, Room 2111, U.S. Department of Commerce, 1401 Constitution Avenue, NW, Washington, DC 20230–0002, and in the "Reading Room" section of the Board's website, which is accessible via www.trade.gov/ftz. For further information, contact Claudia Hausler at Claudia.Hausler@trade.gov or (202)482–1379.

Dated: April 29, 2010.

Andrew McGilvray,

Executive Secretary.

[FR Doc. 2010–10862 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–DS–S

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XV18

Endangered and Threatened Species; Recovery Plans

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Extension of public comment period.

SUMMARY: On March 18, 2010, we, NMFS, announced the release of the Draft Recovery Plan for Central California Coast coho salmon (Draft Plan) for public review and comment. The Draft Plan addresses the Central California Coast coho salmon (*Oncorhynchus kisutch*) Evolutionarily Significant Unit (ESU). NMFS is soliciting review and comment from the

public and all interested parties on the Draft Plan. As part of that proposal, we provided a 60–day comment period, ending on May 17, 2010. We have received requests for an extension of the public comment period. In response to these requests, we are extending the comment period for the proposed action an additional 60 days.

DATES: Information and comments on the subject action must be received by July 6, 2010.

ADDRESSES:

Please send written comments to Charlotte Ambrose, National Marine Fisheries Service, 777 Sonoma Avenue, Room 325, Santa Rosa, CA 95404. Comments may also be submitted by e-mail to: *CohoRecovery.SWR@noaa.gov*. Include in the subject line of the e-mail comment the following identifier: Comments on Central Valley Salmon and Steelhead Draft Plan. Comments may be submitted via facsimile (fax) to (707) 578–3435.

Persons wishing to review the Draft Plan can obtain an electronic copy (i.e., CD-ROM) from Andrea Berry by calling (866) 300–2948 or by e-mailing a request to *Andrea.Berry@noaa.gov* with the subject line "CD-ROM Request for CCC coho salmon Recovery Draft Plan." Electronic copies of the Draft Plan are also available on-line on the NMFS website *http://swr.nmfs.noaa.gov/recovery/Coho__Recovery__Plan__031810.htm*.

FOR FURTHER INFORMATION CONTACT: Charlotte Ambrose, NCCC Domain Recovery Coordinator at (707) 575–6068, or Maura Eagan Moody at (707) 575–6092.

SUPPLEMENTARY INFORMATION:

Background

On March 18, 2010, we published a Notice of Availability of the Draft Central California Coast coho salmon Recovery Plan (Draft Plan) for public review and comment (FR 13081). The Draft Plan addresses the Central California Coast coho salmon (*Oncorhynchus kisutch*) Evolutionarily Significant Unit (ESU). NMFS is soliciting review and comment from the public and all interested parties on the Draft Plan. As part of that proposal, we provided a 60–day comment period, ending on May 17, 2010. Public meetings were held in Fort Bragg, CA, on March 31, 2010, in Santa Cruz, CA, on April 8, and in Santa Rosa, CA on April 9, 2010. We have received requests for an extension of the public comment period. In response to these requests, we are extending the comment period for the proposed action an additional 60 days.

Information and comments must be received by July 6, 2010.

Authority: 16 U.S.C. 1531 *et seq.*

Dated: May 4, 2010.

Therese Conant,

Acting Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2010–10860 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–22–S

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XW33

Endangered and Threatened Species; Take of Anadromous Fish

AGENCY: NOAA's National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), U. S. Department of Commerce.

ACTION: Notice of receipt of a permit application; request for comments.

SUMMARY: Notice is hereby given that NMFS has received an application for a permit to conduct research for scientific purposes from the Resource Conservation District of the Santa Monica Mountains (RCD), in southern California. The requested permit would affect the endangered Southern California (SC) Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*). The public is hereby notified of the availability of the permit application for review and comment before NMFS either approves or disapproves the application.

DATES: Written comments on the permit application must be received at the appropriate address or fax number (see **ADDRESSES**) on or before June 7, 2010.

ADDRESSES: Written comments on the permit application should be sent to Matt McGoogan, Protected Resources Division, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802. Comments may also be sent using email (*FRNpermits.1b@noaa.gov*) or fax (562.980.4027). The permit application is available for review, by appointment, at the foregoing address and is also available for review online at the Authorizations and Permits for Protected Species website at *https://apps.nmfs.noaa.gov*.

FOR FURTHER INFORMATION CONTACT: Matt McGoogan at phone number (562.980.4026) or e-mail: *matthew.mcgoogan@noaa.gov*

SUPPLEMENTARY INFORMATION:

Authority

Issuance of permits, as required by the Endangered Species Act of 1973 (16 U.S.C. 1531B1543) (ESA), is based on a finding that such permits: (1) are applied for in good faith; (2) would not operate to the disadvantage of the listed species which are the subject of the permits; and (3) are consistent with the purposes and policies set forth in section 2 of the ESA. Authority to take listed species is subject to conditions set forth in the permits. Permits are issued in accordance with and are subject to the ESA and NMFS regulations governing listed fish and wildlife permits (50 CFR parts 222B226).

Those individuals requesting a hearing on an application listed in this notice should provide the specific reasons why a hearing on that application would be appropriate (see ADDRESSES). The holding of such a hearing is at the discretion of the Assistant Administrator for Fisheries, NOAA. All statements and opinions contained in the permit action summaries are those of the applicant and do not necessarily reflect the views of NMFS.

Permit Application Received

The RCD has applied for a permit (permit 15390) to study the endangered SC DPS of steelhead (*Oncorhynchus mykiss*) in streams emptying to the Santa Monica Bay of southern California, with specific focus on Topanga Creek, Arroyo Sequit, and Malibu Creek. The purpose of this study is to use monitoring methods to gather information that will contribute to the understanding of migration patterns, diet, and the abundance and distribution of steelhead in the subject streams. Monitoring methods include using direct underwater observation techniques for estimating abundance and distribution of steelhead, migratory trapping, and Passive Integrated Transponder (PIT) tagging. Sampling methods to obtain steelhead for abundance counts and PIT tagging may include hand nets, seine nets, angling, fyke traps, and electrofishing. Field activities will occur between June 2010 and December 2020. The RCD has requested an annual non-lethal take of 1150 juvenile steelhead, 100 smolts, and 10 adult steelhead as well as an annual collection and possession of up to 950 steelhead tissue samples and 10 steelhead carcasses. The 100 smolts and up to 850 juvenile steelhead (depending on size) could be processed for PIT tags. Adult steelhead may be captured in fyke traps, but will be released without being PIT tagged. Gastric lavage would be

performed on up to 30 juvenile steelhead to gather information on feeding habits and diet. The unintentional lethal take that may occur as a result of research activities on Topanga and Malibu creeks is up to 36 juvenile steelhead annually. No lethal take of adult steelhead is expected or authorized with this research permit.

Dated: May 4, 2010.

Therese Conant,

Acting Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2010–10856 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–22–S

DEPARTMENT OF COMMERCE

International Trade Administration

[Application No. 10–00003]

Export Trade Certificate of Review

ACTION: Notice of Application (#10–00003) for an Export Trade Certificate of Review from Saintilien Enterprise Inc., doing business as Saintilien Global Services ("SGS").

SUMMARY: Export Trading Company Affairs ("ETCA"), International Trade Administration, Department of Commerce, has received an application for an Export Trade Certificate of Review ("Certificate"). This notice summarizes the conduct for which certification is sought and requests comments relevant to whether the Certificate should be issued.

FOR FURTHER INFORMATION CONTACT: Joseph E. Flynn, Director, Office of Competition and Economic Analysis, International Trade Administration, by telephone at (202) 482–5131 (this is not a toll-free number) or e-mail at *oetca@ita.doc.gov.*

SUPPLEMENTARY INFORMATION: Title III of the Export Trading Company Act of 1982 (15 U.S.C. 4001–21) authorizes the Secretary of Commerce to issue Export Trade Certificates of Review. An Export Trade Certificate of Review protects the holder and the members identified in the Certificate from state and federal government antitrust actions and from private treble damage antitrust actions for the export conduct specified in the Certificate and carried out in compliance with its terms and conditions. Section 302(b)(1) of the Export Trading Company Act of 1982 and 15 CFR 325.6(a) require the Secretary to publish a notice in the **Federal Register** identifying the applicant and summarizing its proposed export conduct.

Request for Public Comments

Interested parties may submit written comments relevant to the determination whether a Certificate should be issued. If the comments include any privileged or confidential business information, it must be clearly marked and a nonconfidential version of the comments (identified as such) should be included. Any comments not marked privileged or confidential business information will be deemed to be nonconfidential. An original and five (5) copies, plus two (2) copies of the nonconfidential version, should be submitted no later than 20 days after the date of this notice to: Export Trading Company Affairs, International Trade Administration, U.S. Department of Commerce, Room 7021–X H, Washington, DC 20230, or transmit by e-mail at *oetca@ita.doc.gov.* Information submitted by any person is exempt from disclosure under the Freedom of Information Act (5 U.S.C. 552). However, nonconfidential versions of the comments will be made available to the applicant if necessary for determining whether or not to issue the Certificate. Comments should refer to this application as "Export Trade Certificate of Review, application number 10–00003." A summary of the application follows.

Summary of the Application

Applicant: Saintilien Enterprise Inc., doing business as Saintilien Global Services ("SGS"), 85 NW. 116 Street, Miami, FL 33168.

Contact: Mr. James Saintilien,

Telephone: (786) 274–2927.

Application No.: 10–00003.

Date Deemed Submitted: April 22, 2010.

Members: None.

The applicant (SEI) will serve as an International Department and manage complications of export. SEI will assist with entry into foreign markets, which can be time consuming, expensive, and simply unimaginable for small to medium size businesses. SEI will serve as the intermediary of transactions. SEI will provide market research, strategic planning, and initiatives for exporting goods and services for domestic companies. Customer Contact, Market Entry, Logistics, and Marketing will be SEI's role in helping domestic businesses.

I. Export Trade

1. *Products:* All Products.

2. *Services:* All Services.

3. *Technology Rights:* Technology rights, including, but not limited to, patents, trademarks, copyrights, and trade secrets, that relate to Product and Services.

4. *Export Trade Facilitation Services* (as they relate to the Export of Products, Services, and Technology Rights): Export Trade Facilitation Services include professional services in the areas of government relations and assistance with state and federal programs; foreign trade and business protocol; consulting; market research and analysis; collection of information on trade opportunities; marketing; negotiations; joint ventures; shipping; export management; export licensing; advertising; documentation and services related to compliance with customs requirements; insurance and financing; trade show exhibitions; organizational development; management and labor strategies; transfer of technology; transportation; and facilitating the formation of shippers' associations.

II. Export Markets

The Export Markets include all parts of the world except the United States (the fifty states of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the Trust Territory of the Pacific Islands).

III. Export Trade Activities and Methods of Operation

1. *With respect to the sale of Products and Services, licensing of Technology Rights and provision of Export Trade Facilitation Services, SGS, subject to the terms and conditions listed below, may:*

a. Provide and/or arrange for the provisions of Export Trade Facilitation Services;

b. Engage in promotional and marketing activities and collect information on trade opportunities in the Export Markets and distribute such information to clients;

c. Enter into exclusive and/or non-exclusive licensing and/or sales agreements with Suppliers for the export of Products, Services, and/or Technology Rights to Export Markets;

d. Enter into exclusive and/or non-exclusive agreements with distributors and/or sales representatives in Export Markets;

e. Allocate export sales or divide Export Markets among Suppliers for the sale and/or licensing of Products, Services, and/or Technology Rights;

f. Allocate export orders among Suppliers;

g. Establish the price of Products, Services, and/or Technology Rights for sales and/or licensing in Export Markets;

h. Negotiate, enter into, and/or manage licensing agreements for the export of Technology Rights; and

i. Enter into contracts for shipping.

2. SGS and individual Suppliers may regularly exchange information on a one-on-one basis regarding that Supplier's inventories and near-term production schedules in order that the availability of Products for export can be determined and effectively coordinated by SGS with its distributers in Export Markets.

Definition

"*Supplier*" means a person who produces, provides, or sells Products, Services, and/or Technology Rights.

Dated: May 3, 2010.

Joseph E. Flynn,

Director, Office of Competition and Economic Analysis.

[FR Doc. 2010–10703 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[Application No. 88–12A16]

Export Trade Certificate of Review

ACTION: Notice of Application (#88–12A16) to Amend the Export Trade Certificate of Review Issued to Wood Machinery Manufacturers of America, Application no. 88–00016.

SUMMARY: Export Trading Company Affairs ("ETCA") of the International Trade Administration, Department of Commerce, has received an application to amend an Export Trade Certificate of Review ("Certificate"). This notice summarizes the proposed amendment and requests comments relevant to whether the amended Certificate should be issued.

FOR FURTHER INFORMATION CONTACT: Jeffrey Anspacher, Acting Director, Office of Competition and Economic Analysis, International Trade Administration, (202) 482–5131 (this is not a toll-free number) or E-mail at *oetca@ita.doc.gov.*

SUPPLEMENTARY INFORMATION: Title III of the Export Trading Company Act of 1982 (15 U.S.C. 4001–21) authorizes the Secretary of Commerce to issue Export Trade Certificates of Review. An Export Trade Certificate of Review protects the holder and the members identified in the Certificate from State and Federal government antitrust actions and from private treble damage antitrust actions for the export conduct specified in the Certificate and carried out in compliance with its terms and conditions. Section 302(b)(1) of the Export Trading Company Act of 1982 and 15 CFR 325.6(a) require the Secretary to publish a notice in the **Federal Register** identifying the applicant and summarizing its proposed export conduct.

Request for Public Comments

Interested parties may submit written comments relevant to the determination whether an amended Certificate should be issued. If the comments include any privileged or confidential business information, it must be clearly marked and a nonconfidential version of the comments (identified as such) should be included. Any comments not marked as privileged or confidential business information will be deemed to be nonconfidential. An original and five (5) copies, plus two (2) copies of the nonconfidential version, should be submitted no later than 20 days after the date of this notice to: Export Trading Company Affairs, International Trade Administration, U.S. Department of Commerce, Room 7021–X, Washington, DC 20230. Information submitted by any person is exempt from disclosure under the Freedom of Information Act (5 U.S.C. 552). However, nonconfidential versions of the comments will be made available to the applicant if necessary for determining whether or not to issue the Certificate. Comments should refer to this application as "Export Trade Certificate of Review, application number 88–12A16."

The Wood Machinery Manufacturers of America's ("WMMA") original Certificate was issued on February 3, 1989 (54 FR 6312, February 9, 1989), and last amended on December 24, 2009 (75 FR 1335, January 11, 2010). A summary of the current application for an amendment follows.

Summary of the Application

Applicant: Wood Machinery Manufacturers of America ("WMMA"), 100 North 20th Street, 4th Floor, Philadelphia, PA 19103–1443.

Contact: Harold Zassenhaus, Export Consultant, Telephone: (301) 652–0693.

Application No.: 88–12A16.

Date Deemed Submitted: April 26, 2010.

Proposed Amendment: WMMA seeks to amend its Certificate to:

1. Add the following companies as a new "Member" of the Certificate within the meaning of section 325.2(l) of the Regulations (15 CFR 325.2(l)): Precision Drive Systems LLC, Bessemer City, NC; Vortex Tool Company, Inc., Schofield, WI; and Williams & Hussey Machine Co., Inc., Milford, NH, and

2. Delete the following company as a Member of WMMA's Certificate: CTD Machines, Inc., Los Angeles.

Dated: May 3, 2010.

Joseph E. Flynn,

Director, Office of Competition and Economic Analysis.

[FR Doc. 2010–10696 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–DR–P

DEPARTMENT OF COMMERCE

International Trade Administration

A–557–813

Polyethylene Retail Carrier Bags From Malaysia: Extension of Time Limit for Preliminary Results of Antidumping Duty Administrative Review

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

EFFECTIVE DATE: May 7, 2010.

FOR FURTHER INFORMATION CONTACT: Jerrold Freeman or Richard Rimlinger, AD/CVD Operations, Office 5, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW, Washington, DC, 20230; telephone: (202) 482–0180 or (202) 482–4477, respectively.

SUPPLEMENTARY INFORMATION:

Background

At the request of interested parties, the Department of Commerce (the Department) initiated an administrative review of the antidumping duty order on polyethylene retail carrier bags from Malaysia for the period August 1, 2008, through July 31, 2009. *See Initiation of Antidumping and Countervailing Duty Administrative Reviews and Request for Revocation in Part*, 74 FR 48224 (September 22, 2009).

As explained in the memorandum from the Deputy Assistant Secretary for Import Administration, we have exercised our discretion to toll deadlines for the duration of the closure of the Federal Government from February 5 through February 12, 2010. Thus, all deadlines in this review have been extended by seven days. The revised deadline for the final results of this administrative review is currently May 10, 2010. See Memorandum to the Record from Ronald Lorentzen, DAS for Import Administration, regarding "Tolling of Administrative Deadlines As a Result of the Government Closure During the Recent Snowstorm," dated February 12, 2010.

Extension of Time Limit for Preliminary Results

Section 751(a)(3)(A) of the Tariff Act of 1930, as amended (the Act), requires the Department to make a preliminary determination within 245 days after the last day of the anniversary month of an order for which a review is requested and a final determination within 120 days after the date on which the preliminary determination is published. If it is not practicable to complete the review within these time periods, section 751(a)(3)(A) of the Act allows the Department to extend the time limit for the preliminary determination to a maximum of 365 days after the last day of the anniversary month. *See also* 19 CFR 351.213(h)(2).

We determine that it is not practicable to complete the preliminary results of this administrative review by the current deadline of May 10, 2010, because we are continuing to examine the operating status of the sole respondent, Europlastics Malaysia Sdn. Bhd. Therefore, in accordance with section 751(a)(3)(A) of the Act and 19 CFR 351.213(h)(2), we are partially extending the time period for issuing the preliminary results of this review by 30 days until June 9, 2010.

This notice is published in accordance with sections 751(a)(3)(A) and 777(i)(1) of the Act and 19 CFR 351.213(h)(2).

Dated: May 3, 2010.

John M. Andersen,

Acting Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations.

[FR Doc. 2010–10869 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–DS–S

DEPARTMENT OF COMMERCE

National Institute of Standards and Technology

Announcement of Body Armor Research Needs Meeting

AGENCY: National Institute of Standards and Technology, Department of Commerce.

ACTION: Notice of meeting.

SUMMARY: The National Institute of Standards and Technology (NIST) invites interested parties to attend a one-day High Strength Fiber and Body Armor Research Needs Meeting. The Meeting will provide a forum to discuss test methods, technologies, and R&D that can significantly improve ballistic protection through the examination of such issues as material longevity, new materials, and improved testing methodologies for body armor (*e.g.,* improved blunt trauma measurement and correlation to injury).

DATES: The Body Armor Research Needs Meeting will be held June 15, 2010. The workshop will be held from 9 a.m. to 5 p.m. Members of the public wishing to attend the meeting must notify Cindy Stanley by C.O.B June 4, 2010, per instructions under the **SUPPLEMENTARY INFORMATION** section of this notice.

ADDRESSES: The workshop will be held at the National Institute of Standards and Technology (NIST), 100 Bureau Drive, Building 101, Lecture Room B, Gaithersburg, MD 20899.

FOR FURTHER INFORMATION CONTACT: Cindy Stanley, 100 Bureau Dr. M/S 8102, Gaithersburg, MD 20899–8102, 301–975–2756, *stanleyc@nist.gov.*

SUPPLEMENTARY INFORMATION: The Meeting program will include experts from the standards, research, and testing communities. Presentations on today's challenges in body armor and material longevity research will be given. Among the topics to be discussed are the need for the formation of research collaborations between the manufacturing community (including fiber producers, fabric producers, and armor manufacturers) and government and academic researchers.

The goal of the meeting is to identify potential areas for research collaboration between body armor industry representatives and the Federal Government. In this regard, the Meeting will explore:

- Life Cycle Testing for Body Armor
- Improved Test Methods for Body Armor
- The Role of Federal Agencies and Standards Committees
- Opportunities for Collaboration

We expect this workshop to provide a strong foundation for follow-on efforts among government agencies, industry, and academia to

- Identify/define research needs for body armor
- Develop performance standards
- Demonstrate performance metrics

All visitors to the National Institute of Standards and Technology site will have to pre-register to be admitted. Anyone wishing to attend this meeting must register by C.O.B June 4, 2010 in order to attend. Please submit your name, e-mail address, and phone number to Cindy Stanley, and you will be provided instructions for admittance. Non-U.S. citizens must also submit their country of citizenship, passport issuing country, passport number, city of birth, country of birth, date of birth, gender, title, phone number, current mailing address, employer/sponsor, phone and address. Cindy Stanley's e-mail address *stanleyc@nist.gov* and her phone number is (301) 975–2756.

Dated: May 3, 2010.

Katharine B. Gebbie,

Director, Physics Laboratory.

[FR Doc. 2010–10847 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–13–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN: 0648–XW16

New England Fishery Management Council; Public Meeting

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of cancellation of a public meeting.

SUMMARY: The New England Fishery Management Council (Council) has cancelled the public meeting of its Joint Skate Committee and Advisory Panel that was scheduled for Tuesday, May 18, 2010 beginning at 9:30 a.m., in Peabody, MA.

FOR FURTHER INFORMATION CONTACT: Paul J. Howard, Executive Director, New England Fishery Management Council; telephone: (978) 465–0492.

SUPPLEMENTARY INFORMATION: The initial notice was published on May 3, 2010, (75 FR 23244) and the meeting will be rescheduled at a later date and announced in the **Federal Register**.

Dated: May 3, 2010.

Tracey L. Thompson,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2010–10755 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–22–S

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN: 0648–XW32

Fisheries of the South Atlantic and Gulf of Mexico; Southeast Data, Assessment, and Review (SEDAR); Public Meetings

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of SEDAR 24 South Atlantic red snapper assessment webinars 1 and 2.

SUMMARY: The SEDAR 24 assessment of the South Atlantic stock of red snapper will consist of a series of workshops and webinars: a Data Workshop, a series of Assessment webinars, and a Review Workshop. See **SUPPLEMENTARY INFORMATION**.

DATES: SEDAR 24 Assessment Process webinar 1 will be held on Friday, June 18, from 10 a.m. to 1 p.m. (EDT). SEDAR 24 Assessment Process webinar 2 will be held on Wednesday, July 14, from 12 p.m. to 4 p.m. (EDT).

ADDRESSES: The meeting will be held via webinar. The webinar is open to members of the public. Those interested in participating should contact Dale Theiling at SEDAR (See **FOR FURTHER INFORMATION CONTACT**) to request an invitation providing webinar access information.

FOR FURTHER INFORMATION CONTACT: Dale Theiling, SEDAR Coordinator, 4055 Faber Place, Suite 201, North Charleston, SC 29405; telephone: (843) 571–4366; e-mail: *Dale.Theiling@safmc.net*

SUPPLEMENTARY INFORMATION: The Gulf of Mexico, South Atlantic, and Caribbean Fishery Management Councils, in conjunction with NOAA Fisheries and the Atlantic and Gulf States Marine Fisheries Commissions have implemented the Southeast Data, Assessment and Review (SEDAR) process, a multi-step method for determining the status of fish stocks in the Southeast Region. SEDAR is a three-step process including: (1) Data Workshop, (2) Assessment Process utilizing webinars and (3) Review Workshop. The product of the Data Workshop is a data report which compiles and evaluates potential datasets and recommends which datasets are appropriate for assessment analyses. The product of the Assessment Process is a stock assessment report which describes the fisheries, evaluates the status of the stock, estimates biological benchmarks, projects future population conditions, and recommends research and monitoring needs. The assessment is independently peer reviewed at the Review Workshop. The product of the Review Workshop is a Summary documenting Panel opinions regarding the strengths and weaknesses of the stock assessment and input data. Participants for SEDAR Workshops are appointed by the Gulf of Mexico, South Atlantic, and Caribbean Fishery Management Councils and NOAA Fisheries Southeast Regional Office and Southeast Fisheries Science Center. Participants include data collectors and database managers; stock assessment scientists, biologists, and researchers; constituency representatives including fishermen, environmentalists, and NGO's; International experts; and staff of Councils, Commissions, and state and federal agencies.

SEDAR 24 Assessment webinar 1:

Participants will discuss data issues, availability, and appropriate modeling approaches. Guidance will be provided to the analytical team to enable development of preliminary runs of candidate models. Tasks, workload, and scheduling issues will be discussed.

Meeting Schedule:

Friday, June 18, 2010, from 10 a.m. to 1 p.m. (EDT)

SEDAR 24 Assessment webinar 2:

Emerging data issues will be discussed and preliminary model runs reviewed. Participants will provide further model configuration guidance and select a preferred technique.

Meeting Schedule:

Wednesday July 14, 2010, from 12 p.m. to 4 p.m. (EDT)

Although non-emergency issues not contained in this agenda may come before this group for discussion, those issues may not be the subject of formal action during this meeting. Action will be restricted to those issues specifically listed in this notice and any issues arising after publication of this notice that require emergency action under section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act, provided the public has been notified of the Council's intent to take final action to address the emergency.

Special Accommodations

These meetings are physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to the Council office (see **ADDRESSES**) at least 10 business days prior to the meeting.

Dated: May 3, 2010.

Tracey L. Thompson,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2010–10726 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–22–S

DEPARTMENT OF COMMERCE

International Trade Administration

A–533–838

Carbazole Violet Pigment 23 from India: Rescission of Administrative Review

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

SUMMARY: On January 29, 2010, in response to a request from an interested party, the Department of Commerce (the Department) published a notice of initiation of the administrative review of the antidumping duty order on carbazole violet pigment 23 (CVP 23) from India for the period of December 1, 2008, through November 30, 2009. Because the party withdrew its request for an administrative review in a timely manner the Department is rescinding this review.

EFFECTIVE DATE: May 7, 2010.

FOR FURTHER INFORMATION CONTACT: Jerrold Freeman or Richard Rimlinger, AD/CVD Operations, Office 5, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW, Washington, DC 20230; telephone: (202) 482–0180 and (202) 482–4477, respectively.

SUPPLEMENTARY INFORMATION:

Background

On January 29, 2010, in accordance with section 751(a) of the Tariff Act of 1930, as amended (Act), and 19 CFR 351.221(c)(1)(i), we published a notice of initiation of administrative review of the order. *See Initiation of Antidumping and Countervailing Duty Administrative Reviews, Request for Revocation in Part, and Deferral of Initiation of Administrative Review*, 75 FR 4770 (January 29, 2010) (*Initiation Notice*). We initiated the review with respect to Meghmani Pigments (Meghmani) based on its request for a review of its sales during the period December 1, 2008, through November 30, 2009.

On March 9, 2010, in accordance with section 751(b) of the Act and 19 CFR 351.216 and 351.221(c)(3), we published in the **Federal Register** a notice of initiation of an antidumping duty changed–circumstances review. *See Carbazole Violet Pigment 23 from India: Initiation of Antidumping Duty Changed–Circumstances Review*, 75 FR 10759 (March 9, 2010). In this notice we indicated that we would be conducting the changed–circumstances review in the context of the administrative review.

On April 5, 2010, Meghmani withdrew its request for review of its

sales of merchandise subject to the order for the period December 1, 2008, through November 30, 2009.

Rescission of Review

In accordance with 19 CFR 351.213(d)(1), the Department will rescind an administrative review "if a party that requested the review withdraws the request within 90 days of the date of publication of notice of initiation of the requested review." We received a letter from Meghmani withdrawing its request for review within the 90-day time limit. We received no other requests for review of this company. In accordance with 19 CFR 351.213(d)(1), we are rescinding the review with respect to CVP 23 from India produced and/or exported by Meghmani.

Continuation of the Changed–Circumstances Review

Although we are rescinding the administrative review, we will continue to conduct the changed–circumstances review. Therefore, in accordance with 19 CFR 351.216(e), we intend to "issue final results of the changed–circumstances review within 270 days after the date on which we initiated the changed–circumstances review."

Notification to Importer

This notice serves as a final reminder to importers of their responsibility under 19 CFR 351.402(f) to file a certificate regarding the reimbursement of antidumping duties prior to liquidation of the relevant entries during the review period. Failure to comply with this requirement could result in the Department's presumption that reimbursement of antidumping duties occurred and the subsequent assessment of doubled antidumping duties.

Notification to Interested Parties

This notice serves as a reminder to parties subject to the administrative protective order (APO) of their responsibility concerning the disposition of proprietary information disclosed under APO in accordance with 19 CFR 351.305(a)(3). Timely written notification of the destruction of APO materials or conversion to judicial protective order is hereby requested. Failure to comply with the regulations and terms of an APO is a sanctionable violation.

We are issuing and publishing this notice in accordance with section 777(i)(1) of the Act and 19 CFR 351.213(d)(4).

Dated: May 3, 2010.

John M. Andersen,

Acting Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations.

[FR Doc. 2010–10866 Filed 5–6–10; 8:45 am]

BILLING CODE 3510–DS–S

COMMISSION OF FINE ARTS

Notice of Meeting

The next meeting of the U.S. Commission of Fine Arts is scheduled for 20 May 2010, at 10 a.m. in the Commission offices at the National Building Museum, Suite 312, Judiciary Square, 401 F Street, NW., Washington, DC 20001–2728. Items of discussion may include buildings, parks and memorials.

Draft agendas and additional information regarding the Commission are available on our Web site: Inquiries regarding the agenda and requests to submit written or oral statements should be addressed to Thomas Luebke, Secretary, U.S. Commission of Fine Arts, at the above address; by e-mailing *staff@cfa.gov;* or by calling 202–504–2200. Individuals requiring sign language interpretation for the hearing impaired should contact the Secretary at least 10 days before the meeting date.

Dated: April 29, 2010 in Washington, DC.

Thomas Luebke, AIA,

Secretary.

[FR Doc. 2010–10607 Filed 5–6–10; 8:45 am]

BILLING CODE 6330–01–M

COMMITTEE FOR PURCHASE FROM PEOPLE WHO ARE BLIND OR SEVERELY DISABLED

Procurement List Proposed Additions and Deletions

AGENCY: Committee for Purchase From People Who Are Blind or Severely Disabled.

ACTION: Proposed additions to and deletions from the Procurement List.

SUMMARY: The Committee is Proposing to add to the Procurement List products and a service to be furnished by nonprofit agencies employing persons who are blind or have other severe disabilities, and to delete services previously provided by such agencies.

Comments Must be Received on or Before: 6/7/2010.

ADDRESSES: Committee for Purchase From People Who Are Blind or Severely Disabled, Jefferson Plaza 2, Suite 10800, 1421 Jefferson Davis Highway, Arlington, Virginia 22202–3259.

For Further Information or to Submit Comments Contact: Barry S. Lineback, Telephone: (703) 603–7740, Fax: (703) 603–0655, or e-mail *CMTEFedReg@AbilityOne.gov*.

SUPPLEMENTARY INFORMATION: This notice is published pursuant to 41 U.S.C. 47(a)(2) and 41 CFR 51–2.3. Its purpose is to provide interested persons an opportunity to submit comments on the proposed actions.

Additions

If the Committee approves the proposed additions, the entities of the Federal Government identified in this notice will be required to procure the products and service listed below from nonprofit agencies employing persons who are blind or have other severe disabilities.

Regulatory Flexibility Act Certification

I certify that the following action will not have a significant impact on a substantial number of small entities. The major factors considered for this certification were:

1. If approved, the action will not result in any additional reporting, recordkeeping or other compliance requirements for small entities other than the small organizations that will furnish the products and service to the Government.

2. If approved, the action will result in authorizing small entities to furnish the products and service to the Government.

3. There are no known regulatory alternatives which would accomplish the objectives of the Javits-Wagner-O'Day Act (41 U.S.C. 46–48c) in connection with the products and service proposed for addition to the Procurement List.

Comments on this certification are invited. Commenters should identify the statement(s) underlying the certification on which they are providing additional information.

End of Certification

The following products and service are proposed for addition to Procurement List for production by the nonprofit agencies listed:

Products

NSN: 8105–01–284–2923—Bag, Waste Receptacle

NPA: Portland Habilitation Center, Inc., Portland, OR

Contracting Activity: Federal Acquisition Service, GSA/FSS OFC SUP CTR—Paper Products, New York, NY

Coverage: B-list for the broad government requirement as aggregated by the General Services Administration.

ACU Sun Hat

NSN: 8415–01–579–9276—Multi Cam
NSN: 8415–01–579–9272—Multi Cam
NSN: 8415–01–579–9267—Multi Cam
NSN: 8415–01–579–9260—Multi Cam
NSN: 8415–01–579–9219—Multi Cam
NSN: 8415–01–579–9210—Multi Cam
NSN: 8415–01–579–9197—Multi Cam
NSN: 8415–01–579–9189—Multi Cam
NSN: 8415–01–579–9182—Multi Cam
NSN: 8415–01–579–9175—Multi Cam
NSN: 8415–01–579–9172—Multi Cam
NSN: 8415–01–579–9163—Multi Cam
NSN: 8415–01–579–9152—Multi Cam
NSN: 8415–01–579–9147—Multi Cam
NSN: 8415–01–519–8682—Universal
NSN: 8415–01–519–8681—Universal
NSN: 8415–01–519–8680—Universal
NSN: 8415–01–519–8678—Universal
NSN: 8415–01–519–8684—Universal
NSN: 8415–01–519–8687—Universal
NSN: 8415–01–519–8696—Universal
NSN: 8415–01–519–8698—Universal
NSN: 8415–01–519–8699—Universal
NSN: 8415–01–519–8702—Universal
NSN: 8415–01–519–8704—Universal
NSN: 8415–01–519–8705—Universal
NSN: 8415–01–519–8708—Universal
NSN: 8415–01–519–8706—Universal
NPA: Southeastern Kentucky Rehabilitation Industries, Inc., Corbin, KY
Contracting Activity: Dept of the Army, XR W2DF RDECOM ACQ CTR Natick, Natick, MA
Coverage: C-list for 100% of the requirements for the Dept of the Army, Natick, MA.

Tape, Correction, 4 PK

NSN: 7510–01–504–8940
NPA: Industries for the Blind, Inc., West Allis, WI
Contracting Activity: Federal Acquisition Service, GSA/FSS OFC SUP CTR—Paper Products, New York, NY
Coverage: A–List for the total government requirement as aggregated by the General Services Administration.

Envelope, Transparent

NSN: 7510–00–272–9804
NPA: Bestwork Industries for the Blind, Inc., Runnemede, NJ
Contracting Activity: Federal Acquisition Service, GSA/FSS OFC SUP CTR—paper products, New York, NY
Coverage: B–List for the broad government requirement as aggregated by the General Services Administration.

Service

Service Type/Location: Janitorial, Customs and Border Protection, B.P. Sector Maintenance, 398 E. Aurora Drive, El Centro, CA
NPA: ARC–Imperial Valley, El Centro, CA
Contracting Activity: Department of Homeland Security, Bureau of Customs and Border Protection, Office of Procurement, Washington, DC

Deletions

Regulatory Flexibility Act Certification

I certify that the following action will not have a significant impact on a substantial number of small entities. The major factors considered for this certification were:

1. If approved, the action will not result in additional reporting, recordkeeping or other compliance requirements for small entities.
2. If approved, the action may result in authorizing small entities to provide the services to the Government.
3. There are no known regulatory alternatives which would accomplish the objectives of the Javits-Wagner-O'Day Act (41 U.S.C. 46–48c) in connection with the services proposed for deletion from the Procurement List.

End of Certification

The following services are proposed for deletion from the Procurement List:

Services

Service Type/Location: Medical Transcription, Veterans Affairs Medical Center, 7305 N. Military Trail, West Palm Beach, FL
NPA: Gulfstream Goodwill Industries, Inc., West Palm Beach, FL
Contracting Activity: Department of Veterans Affairs, NAC, Hines, IL
Service Type/Location: Janitorial/Custodial, Fort McPherson: U.S. Army Health Clinic, Buildings 100, 101, 105, 162, 163, 165, 170, 170A and 170B, Fort McPherson, GA
NPA: WORKTEC, Jonesboro, GA
Contracting Activity: Dept of the Army, XR W40M Natl Region Contract OFC, Washington, DC

Barry S. Lineback,

Director, Business Operations.

[FR Doc. 2010–10811 Filed 5–6–10; 8:45 am]

BILLING CODE 6353–01–P

DEPARTMENT OF DEFENSE

Office of the Secretary

Meeting of the Defense Department Advisory Committee on Women in the Services (DACOWITS)

AGENCY: Department of Defense (DoD).

ACTION: Notice.

SUMMARY: Pursuant to section 10(a), Public Law 92–463, as amended, notice is hereby given of a forthcoming meeting of the Defense Department Advisory Committee on Women in the Services (DACOWITS). The purpose of the meeting is for the Committee to discuss their vision and priorities for the upcoming year and receive briefing from Sexual Assault and Prevention and Response Office. The meeting is open to the public, subject to the availability of space.

DATES: The meeting will be held on June 3, 2010, from 8:30 a.m. to 3 p.m.

ADDRESSES: The meeting will be held at the Doubletree Hotel, 300 Army Navy Dr., Arlington, VA 22202.

FOR FURTHER INFORMATION CONTACT: MSgt Robert Bowling, USAF, DACOWITS, 4000 Defense Pentagon, Room 2C548A, Washington, DC 20301–4000. *Robert.bowling@osd.mil* Telephone (703) 697–2122. Fax (703) 614–6233.

SUPPLEMENTARY INFORMATION:

Meeting Agenda

June 3, 2010, From 8:30 a.m.–3 p.m.

—Welcome, introductions, and announcements
—Discussion on Committee's vision, philosophy, and topics to pursue
—Briefings from Sexual Assault Prevention and Response Office
—Public Forum

Written Statements

Individuals submitting a written statement may submit their statement to the Point of Contact listed under **FOR FURTHER INFORMATION CONTACT** at any time. However, written statements must be received by 5 p.m. on Tuesday, June 1, 2010, to be provided to and considered by the Committee for the meeting that is the subject of this notice. Statements received after 5 p.m. on June 1, 2010, may not be provided to or considered by the Committee until its next open meeting. The Designated Federal Officer will review all timely submissions with the Defense Department Advisory Committee on Women in the Services Chairperson and ensure they are provided to the members of the Defense Department Advisory Committee on Women in the Services. If members of the public are interested in making an oral statement, a written statement must be submitted as above. After reviewing the written comments, the Chairperson and the Designated Federal Officer will determine who of the requesting persons will be able to make an oral presentation of their issue during an open portion of this meeting or at a future meeting. Determination of who will be making an oral presentation will depend on time available and if the topics are relevant to the Committee's activities. Two minutes will be allotted to persons desiring to make an oral presentation. Oral presentations by members of the public will be permitted only on Thursday, June 3, 2010, from 2 p.m. to 2:30 p.m. before the full Committee. Number of oral presentations to be made will depend on the number of requests received from members of the public.

Dated: May 4, 2010.

Mitchell S. Bryman,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2010–10846 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Office of the Secretary

Federal Advisory Committee; Advisory Panel on Department of Defense Capabilities for Support of Civil Authorities After Certain Incidents

AGENCY: Office of the Assistant Secretary of Defense (Homeland Defense and Americas' Security Affairs), DoD.

ACTION: Notice of meeting.

SUMMARY: Under the provisions of the Federal Advisory Committee Act of 1972 (5 U.S.C., Appendix, as amended), the Government in the Sunshine Act of 1976 (5 U.S.C. 552b, as amended), and 41 CFR 102–3.150, the Department of Defense announces that the Advisory Panel on Department of Defense Capabilities for Support of Civil Authorities after Certain Incidents (hereinafter referred to as the Advisory Panel) will meet on June 2 and 3, 2010. Subject to the availability of space, this meeting is open to the public.

DATES: The meeting will be held on Wednesday, June 2, 2010, from 8:30 a.m. to 5 p.m. and on Thursday, June 3, 2010, from 8:30 a.m. to 5 p.m. Eastern Daylight Time (hereinafter referred to as EDT).

ADDRESSES: The meeting will be held at the RAND Corporation, 1200 South Hayes Street, Arlington, Virginia 22202, 4th floor conference facilities (*see* below under Public Accessibility to the Meeting for additional information).

FOR FURTHER INFORMATION CONTACT: *Advisory Panel's Points of Contact at the Federally Funded Research and Development Center (FFRDC):* Andrew Morral, Principal Investigator, telephone 703–413–1100, x5119, e-mail: *morral@rand.org;* The RAND Corporation, 1200 South Hayes Street, Arlington, Virginia, 22202.

Advisory Panel's Designated Federal Officer: Catherine Polmateer, telephone: 703–697–6370, OASD(HD&ASA), Resources Integration, 2600 Defense Pentagon, Washington, DC 20301–2600, e-mail: *Catherine.Polmateer@osd.mil.*

SUPPLEMENTARY INFORMATION:

Purpose of the Meeting

The panel will discuss the key issues in its congressional mandate with senior members of U.S. Government agencies and State and local officials. It will discuss preliminary findings, conclusions, and recommendations, based on its activities to date. It will decide on topics for research and other activities for future meetings, based on its congressionally-mandated tasks.

Agenda

- Opening Remarks by the Chairman.
- Discussions with senior officials of the U.S. Departments of Justice, Health and Human Services, Energy, and Homeland Security.
- Discussions with State Governors and other State and local officials.
- Discussion of preliminary findings, conclusions, and recommendations.
- Discussion of future meetings.
- Administration.

Public Accessibility to the Meeting

Pursuant to 5 U.S.C. 552b and 41 CFR 102–3.140 through 102–3.165, and the availability of space, this meeting is open to the public. Seating is on a first-come basis.

Note: Members of the public who choose to attend the meeting should allow approximately 15 minutes to clear building security on the ground floor (Hayes Street entrance) and RAND security (4th floor reception area).

Written Statements

Pursuant to 41 CFR 102–3.105(j) and 102–3.140, and section 10(a)(3) of the Federal Advisory Committee Act of 1972 (FACA), the public or interested organizations may submit written statements to the Advisory Panel about its mission and functions. Written statements may be submitted at any time or in response to the stated agenda of a planned meeting of the Advisory Panel.

All written statements shall be submitted to the Designated Federal Officer for the Advisory Panel, and this individual will ensure that the written statements are provided to the membership for their consideration. Contact information for the Designated Federal Officer is provided in this notice or can be obtained from the GSA's FACA Database: *https://www.fido.gov/facadatabase/public.asp.*

Written statements submitted in response to the agenda mentioned in this notice must be received by the Designated Federal Officer (*see* **FOR FURTHER INFORMATION CONTACT**) no later than 11 a.m., EDT, Wednesday, May 26, 2010. Written statements received after this date may not be provided to or considered by the Advisory Panel until its next meeting.

The Designated Federal Officer will review all timely submissions with the Advisory Panel Chairperson and ensure they are provided to all members of the Advisory Panel before the meeting that is the subject of this notice.

All written statements received by the Designated Federal Officer will be retained as part of the committee's official records. In addition, statements timely submitted in response to a stated agenda of a planned meeting and provided to committee members in preparation for a meeting, will be made available to the public during the meeting and posted to the GSA's FACA Database.

Oral Statements

In addition to written statements, and time permitting, the Chairperson of the Advisory Panel may allow Oral Statements by the public to the Members of the Advisory Panel. Any person seeking to address orally the Advisory Panel must submit a request to the Designated Federal Officer no later than 11 a.m., EDT, Wednesday, May 26, 2010. Oral statements will be limited to five minutes (or less depending on time available). The Designated Federal Officer will provide timekeeping for oral statements and will notify the Chairperson when a presenter has reached allotted time.

Dated: May 4, 2010.

Mitchell S. Bryman,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2010–10845 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Office of the Secretary

Federal Advisory Committee; Defense Audit Advisory Committee (DAAC)

AGENCY: Under Secretary of Defense (Comptroller), DoD.

ACTION: Notification of meeting.

SUMMARY: Under the provisions of the Federal Advisory Committee Act of 1972 (5 U.S.C., Appendix, as amended), the Government in the Sunshine Act of 1976 (5 U.S.C. 552b, as amended), and 41 CFR 102–3.150, the Department of Defense announces that the Defense Audit Advisory Committee will meet on May 17, 2010. Subject to the availability of space, the meeting is open to the public.

DATES: The meeting will be held on Monday, May 17, 2010, from 3 p.m. to 5 p.m.

ADDRESSES: The meeting will be held at the Pentagon, Room 3E754, Washington, DC (escort required, *see* below).

FOR FURTHER INFORMATION CONTACT: The Committee's Designated Federal Officer (DFO) is Sandra Gregory, Office of the Under Secretary of Defense (Comptroller) (OUSD(C)), 1100 Defense Pentagon, Room 3C689, Washington, DC 20301–1100, *sandra.gregory@osd.mil*, (703) 614–3310.

For meeting information please contact Arianna Smith, OUSD(C), 1100 Defense Pentagon, Room 3C689, Washington, DC 20301–1100, *arianna.smith.ctr@osd.mil*, (703) 614–4819.

SUPPLEMENTARY INFORMATION:

Purpose

The mission of the DAAC is to provide the Secretary of Defense, through the Under Secretary of Defense (Comptroller)/Chief Financial Officer, independent advice and recommendations on DoD financial management to include financial reporting processes, systems of internal controls, audit processes, and processes for monitoring compliance with relevant laws and regulations.

Agenda

Below is the agenda for the May 17, 2010 meeting:

3 p.m. Welcome and update
3:20 Review of last meeting minutes and Opening Remarks
3:45 Open Discussion on Themes and Messages of the May 2010 FIAR Plan Status Report
4:10 Alternative approaches for Balance sheet property valuation
4:35 Internal Audit Role
4:55 Closing Remarks

Accessibility to the Meeting

Pursuant to 5 U.S.C. 552b and 41 CFR 102–3.140 through 102–3.165, and the availability of space, this meeting is open to the public. Seating is on a first-come basis. Members of the public who wish to attend the meeting must contact Ms. Smith at the number listed in this notice no later than noon on Tuesday, May 11, 2010, to arrange a Pentagon escort. Public attendees are required to arrive at the Pentagon Metro Entrance by 2 p.m. and complete security screening by 2:15 p.m. Security screening requires two forms of identification: (1) A government-issued photo I.D., and (2) any type of secondary I.D. which verifies the individual's name (*i.e.* debit card, credit card, work badge, Social Security card).

Special Accommodations

Individuals requiring special accommodation to access the public meeting should contact Ms. Smith at least five business days prior to the meeting to ensure appropriate arrangements can be made.

Procedures for Providing Written Comments

Pursuant to 41 CFR 102–3.105(j) and 102–3.140, and section 10(a)(3) of the Federal Advisory Committee Act of 1972, the public or interested organizations may submit written comments to the Committee about its mission and topics pertaining to this public session.

Written comments are accepted until the date of the meeting; however, written comments should be received by the Designated Federal Officer at least five business days prior to the meeting date so that the comments may be made available to the Committee members for their consideration prior to the meeting. Written comments should be submitted to the Designated Federal Officer (*see* **FOR FURTHER INFORMATION CONTACT**). E-mail submissions should be in one of the following formats (Adobe Acrobat, WordPerfect, or Word format).

Please note: Since the committee operates under the provisions of the Federal Advisory Committee Act, as amended, all written comments will be treated as public documents and will be made available for public inspection, up to and including being posted on the OUSD(C) Web site.

Request for Waiver

Due to unforeseen difficulties the Designated Federal Officer was unable to process the **Federal Register** notice for the May 17, 2010, meeting of the Defense Audit Advisory Committee (DAAC), as required by 41 CFR 102–3.150(a). Accordingly, the Committee Management Officer for the Department of Defense, pursuant to 41 CFR 102–3.150(b), waives the 15-calendar day notification requirement.

Dated: May 4, 2010.

Mitchell S. Bryman,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2010–10844 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Office of the Secretary

[Docket ID: DOD–2010–OS–0060]

Privacy Act of 1974; Systems of Records

AGENCY: Defense Logistics Agency, DoD.

ACTION: Notice to amend a system of records.

SUMMARY: The Defense Logistics Agency proposes to amend a system of records notice in its existing inventory of records systems subject to the Privacy Act of 1974, (5 U.S.C. 552a), as amended.

DATES: This proposed action will be effective without further notice on June 7, 2010, unless comments are received which result in a contrary determination.

ADDRESSES: You may submit comments, identified by docket number and title, by any of the following methods:

- *Federal Rulemaking Portal: http://www.regulations.gov*. Follow the instructions for submitting comments.
- *Mail:* Federal Docket Management System Office, 1160 Defense Pentagon, Washington, DC 20301–1160.

Instructions: All submissions received must include the agency name and docket number for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information.

FOR FURTHER INFORMATION CONTACT: Jody Sinkler at (703) 767–5045.

SUPPLEMENTARY INFORMATION: The Defense Logistics Agency systems of records notices subject to the Privacy Act of 1974, (5 U.S.C. 552a), as amended, have been published in the **Federal Register** and are available from the Chief Privacy and FOIA Officer, Headquarters Defense Logistics Agency, ATTN: DGA, 8725 John J. Kingman Road, Suite 1644, Fort Belvoir, VA 22060–6221.

The specific changes to the record system being amended are set forth below followed by the notice, as amended, published in its entirety. The proposed amendment is not within the purview of subsection (r) of the Privacy Act of 1974 (5 U.S.C. 552a), as amended, which requires the submission of new or altered systems reports.

Dated: May 4, 2010.

Mitchell S. Bryman,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

S600.20

SYSTEM NAME:

DLA Fire and Emergency Services Program Records (June 5, 2006; 71 FR 32325).

CHANGES:

* * * * *

SYSTEM LOCATION:

Delete entry and replace with "Defense Supply Center Richmond (DSCR), 8000 Jefferson Davis Highway, Richmond, VA 23297–5000.

Defense Supply Center Columbus (DSCC), 3990 East Broad Street, Columbus, OH 43218–3990.

Defense Distribution Depot Susquehanna (DDSP), 2001 Mission Drive, Building 911, New Cumberland, PA 17070–5000.

Defense Distribution Depot San Joaquin (DDJC), 25600 S. Chrisman Road, Tracy, CA 95304."

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Delete entry and replace with "Individuals assigned fire and emergency services duties within the Defense Logistics Agency (DLA)."

CATEGORIES OF RECORDS IN THE SYSTEM:

Delete entry and replace with "Individual's name, Social Security Number (SSN), home address and telephone number, education and training data, professional certifications, employee number, station number, emergency notification data, and driver's license number and expiration date."

* * * * *

PURPOSE(S):

Delete entry and replace with "Records are used to manage the DLA Fire and Emergency Services Program; to provide data concerning professional qualifications, training requirements, and the health and readiness of the DLA Fire and Emergency Services personnel. Records are used for identification, credentialing and interoperability with organizations beyond DoD and DLA. Records are also used for emergency notification in case of an accident or casualty."

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

Delete entry and replace with "In addition to those disclosures generally permitted under 5 U.S.C. 552a(b) of the Privacy Act of 1974, these records may specifically be disclosed outside the DoD as a routine use pursuant to 5 U.S.C. 552a(b)(3) as follows:

To Federal and nonfederal schools, academies, and similar institutions for training or certification purposes concerning the professional qualifications, and training requirements of DLA firefighters.

To local fire departments for training or assistance in fire fighting operations.

To local hospitals and medical personnel for emergency treatment in case of accident or casualty.

To the General Services Administration and the U.S. Departments of Interior and Agriculture when responding to forest, acreage, or building fires or emergencies on Federally owned or controlled property.

To the Environmental Protection Agency in situations involving hazardous materials or chemical, biological, radiological, nuclear, and explosives incidents.

To Federal, State, or local disaster relief agencies for the purpose of providing mutual aid.

The DoD 'Blanket Routine Uses' set forth at the beginning of DLA's compilation of systems of records notices apply to this system."

* * * * *

SAFEGUARDS:

Delete entry and replace with "Records are accessible only to the custodian of the records or by persons responsible for servicing the record system in performance of their official duties. Electronic files are deployed on accredited systems with access restricted to authorized users. Records are stored in locked cabinets or rooms and are controlled by personnel screening and computer software. All individuals granted access to this system of records have received Privacy Act training."

* * * * *

SYSTEM MANAGER(S) AND ADDRESS:

Delete entry and replace with "Chief of Fire and Emergency Services, Defense Supply Center Richmond (DSCR), 8000 Jefferson Davis Highway, Richmond, VA 23297–5000.

Chief of Fire and Emergency Services, Defense Supply Center Columbus (DSCC), 3990 East Broad Street, Columbus, OH 43218–3990.

Chief of Fire and Emergency Services, Defense Distribution Depot Susquehanna (DDSP), 2001 Mission Drive, Building 911, New Cumberland, PA 17070–5000.

Chief of Fire and Emergency Services, Defense Distribution Depot San Joaquin (DDJC), 25600 S. Chrisman Road, Tracy, CA 95304."

NOTIFICATION PROCEDURE:

Delete entry and replace with "Individuals seeking to determine whether information about themselves is contained in this system of records should address written inquiries to the Privacy Act Office, Headquarters, Defense Logistics Agency, ATTN: DGA, 8725 John J. Kingman Road, Suite 1644, Fort Belvoir, VA 22060–6221.

Requests should contain the individual's full name, Social Security Number (SSN), employee number, and/or station number."

RECORD ACCESS PROCEDURES:

Delete entry and replace with "Individuals seeking access to information about themselves contained in this system of records should address written inquiries to the Privacy Act Office, Headquarters, Defense Logistics Agency, ATTN: DGA, 8725 John J. Kingman Road, Suite 1644, Fort Belvoir, VA 22060–6221.

Individual should provide their full name, Social Security Number (SSN), employee number, and/or station number."

CONTESTING RECORD PROCEDURES:

Delete entry and replace with "The DLA rules for accessing records, for contesting contents, and appealing initial agency determinations are contained in 32 CFR part 323, or may be obtained from the Privacy Act Office, Headquarters, Defense Logistics Agency, ATTN: DGA, 875 John J. Kingman Road, Suite 1644, Fort Belvoir, VA 22060–6221."

RECORD SOURCE CATEGORIES:

Delete entry and replace with "Information is provided by the individual, and training and educational institutions."

* * * * *

S600.20

SYSTEM NAME:

DLA Fire and Emergency Services Program Records.

SYSTEM LOCATION:

Defense Supply Center Richmond (DSCR), 8000 Jefferson Davis Highway, Richmond, VA 23297–5000.

Defense Supply Center Columbus (DSCC), 3990 East Broad Street, Columbus, OH 43218–3990.

Defense Distribution Depot Susquehanna (DDSP), 2001 Mission Drive, Building 911, New Cumberland, PA 17070–5000.

Defense Distribution Depot San Joaquin (DDJC), 25600 S. Chrisman Road, Tracy, CA 95304.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Individuals assigned fire and emergency services duties within the Defense Logistics Agency (DLA).

CATEGORIES OF RECORDS IN THE SYSTEM:

Individual's name, Social Security Number (SSN), home address and

telephone number, education and training data, professional certifications, employee number, station number, emergency notification data, and driver's license number and expiration date.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

5 U.S.C. 301, Departmental Regulations; 10 U.S.C. 136, Under Secretary of Defense for Personnel and Readiness; DoD Instruction 6055.6, DoD Fire and Emergency Services Program; and E.O. 9397 (SSN), as amended.

PURPOSE(S):

Records are used to manage the DLA Fire and Emergency Services Program; to provide data concerning professional qualifications, training requirements, and the health and readiness of the DLA Fire and Emergency Services personnel. Records are used for identification, credentialing and interoperability with organizations beyond DoD and DLA. Records are also used for emergency notification in case of an accident or casualty.

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

In addition to those disclosures generally permitted under 5 U.S.C. 552a(b) of the Privacy Act of 1974, these records may specifically be disclosed outside the DoD as a routine use pursuant to 5 U.S.C. 552a(b)(3) as follows:

To Federal and nonfederal schools, academies, and similar institutions for training or certification purposes concerning the professional qualifications, and training requirements of DLA firefighters.

To local fire departments for training or assistance in fire fighting operations.

To local hospitals and medical personnel for emergency treatment in case of accident or casualty.

To the General Services Administration and the U.S. Departments of Interior and Agriculture when responding to forest, acreage, or building fires or emergencies on Federally owned or controlled property.

To the Environmental Protection Agency in situations involving hazardous materials or chemical, biological, radiological, nuclear, and explosives incidents.

To Federal, State, or local disaster relief agencies for the purpose of providing mutual aid.

The DoD 'Blanket Routine Uses' set forth at the beginning of DLA's compilation of systems of records notices apply to this system.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Records may be stored on paper and/or on electronic storage media.

RETRIEVABILITY:

Records are retrieved by individual's name, Social Security Number (SSN), employee number, duty station and/or station number.

SAFEGUARDS:

Records are accessible only to the custodian of the records or by persons responsible for servicing the record system in performance of their official duties. Electronic files are deployed on accredited systems with access restricted to authorized users. Records are stored in locked cabinets or rooms and are controlled by personnel screening and computer software. All individuals granted access to this system of records have received Privacy Act training.

RETENTION AND DISPOSAL:

Disposition pending (until the National Archives and Records Administration has approved the disposition of these records, treat them as permanent).

SYSTEM MANAGER(S) AND ADDRESS:

Chief of Fire and Emergency Services, Defense Supply Center Richmond (DSCR), 8000 Jefferson Davis Highway, Richmond, VA 23297–5000.

Chief of Fire and Emergency Services, Defense Supply Center Columbus (DSCC), 3990 East Broad Street, Columbus, OH 43218–3990.

Chief of Fire and Emergency Services, Defense Distribution Depot Susquehanna (DDSP), 2001 Mission Drive, Building 911, New Cumberland, PA 17070–5000.

Chief of Fire and Emergency Services, Defense Distribution Depot San Joaquin (DDJC), 25600 S. Chrisman Road, Tracy, CA 95304.

NOTIFICATION PROCEDURE:

Individuals seeking to determine whether information about themselves is contained in this system of records should address written inquiries to the Privacy Act Office, Headquarters, Defense Logistics Agency, ATTN: DGA, 8725 John J. Kingman Road, Suite 1644, Fort Belvoir, VA 22060–6221.

Requests should contain the individual's full name, Social Security Number (SSN), employee number, and/or station number.

RECORD ACCESS PROCEDURES:

Individuals seeking access to information about themselves contained in this system of records should address written inquiries to the Privacy Act Office, Headquarters, Defense Logistics Agency, ATTN: DGA, 8725 John J. Kingman Road, Suite 1644, Fort Belvoir, VA 22060–6221.

Individual should provide their full name, Social Security Number (SSN), employee number, and/or station number.

CONTESTING RECORD PROCEDURES:

The DLA rules for accessing records, for contesting contents, and appealing initial agency determinations are contained in 32 CFR part 323, or may be obtained from the Privacy Act Office, Headquarters, Defense Logistics Agency, ATTN: DGA, 875 John J. Kingman Road, Suite 1644, Fort Belvoir, VA 22060–6221.

RECORD SOURCE CATEGORIES:

Information is provided by the individual, and training and educational institutions.

EXEMPTIONS CLAIMED FOR THE SYSTEM:

None.

[FR Doc. 2010–10840 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Office of the Secretary

[Docket ID: DoD–2010–OS–0061]

Privacy Act of 1974; Systems of Records

AGENCY: National Security Agency/Central Security Service, DoD.

ACTION: Notice to amend a system of records.

SUMMARY: The National Security Agency (NSA) is proposing to amend a systems of records notices in its inventory of record systems subject to the Privacy Act of 1974, (5 U.S.C. 552a), as amended.

DATES: This proposed action will be effective without further notice on June 7, 2010 unless comments are received which result in a contrary determination.

ADDRESSES: You may submit comments, identified by docket number and title, by any of the following methods:

* *Federal Rulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.

* *Mail:* Federal Docket Management System Office, 1160 Defense Pentagon, Washington, DC 20301–1160.

Instructions: All submissions received must include the agency name and docket number for this **Federal Register**

document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information.

FOR FURTHER INFORMATION CONTACT: Ms. Anne Hill at (301) 688–6527.

SUPPLEMENTARY INFORMATION: The National Security Agency's systems of notices subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended, have been published in the **Federal Register** and are available from the National Security Agency/Central Security Service, Freedom of Information Act and Privacy Act Office, 9800 Savage Road, Suite 6248, Ft. George G. Meade, MD 20755–6248.

The specific changes to the records system being amended are set forth below followed by the notice, as amended, published in its entirety. The proposed amendments are not within the purview of subsection (r) of the Privacy Act of 1974, (5 U.S.C. 552a), as amended, which requires the submission of a new or altered system report.

Dated: May 4, 2010.

Mitchell S. Bryman,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

GNSA 21

SYSTEM NAME:

NSA/CSS Morale, Welfare, and Recreation (MWR) and Non-appropriated Fund Instrumentality (NAFI) Files (July 6, 2005; 70 FR 38894).

CHANGES:

* * * * *

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

Delete entry and replace with "National Security Agency Act of 1959, Public Law 86–36 (50 U.S.C. 402 note), as amended; DoD Instruction 1015.08, DoD Civilian employee Morale, Welfare, and Recreation (MWR) Activities and Supporting Nonappropriated Fund Instrumentalities; DoD Instruction 1015.10, Military Morale, Welfare, and Recreation (MWR) Programs; NSA/CSS Policy 4–2, NSA/CSS Civilian Morale, Welfare, and Recreation Program; and E.O. 9397, as amended (SSN)."

* * * * *

SYSTEM MANAGER(S) AND ADDRESS:

Delete entry and replace with "Associate Director for Installations and Logistics, National Security Agency/Central Security Service, 9800 Savage Road, Ft. George G. Meade, MD 20755–6000."

NOTIFICATION PROCEDURE:

Delete entry and replace with "Individuals seeking to determine whether information about themselves is contained in this system should address written inquiries to the National Security Agency/Central Security Service, Freedom of Information Act/Privacy Act Office, 9800 Savage Road, Ft. George G. Meade, MD 20755–6000.

Written inquiries should contain the individual's full name, Social Security Number (SSN) and mailing address."

RECORD ACCESS PROCEDURES:

Delete entry and replace with "Individuals seeking access to information about themselves contained in this system should address written inquiries to the National Security Agency/Central Security Service, Freedom of Information Act/Privacy Act Office, 9800 Savage Road, Ft. George G. Meade, MD 20755–6000.

Written inquiries should contain the individual's full name, Social Security Number (SSN) and mailing address."

CONTESTING RECORD PROCEDURES:

Delete entry and replace with "The NSA/CSS rules for contesting contents and appealing initial determinations are published at 32 CFR part 322 or may be obtained from the system manager."

* * * * *

GNSA 21

SYSTEM NAME:

NSA/CSS Morale, Welfare, and Recreation (MWR) and Non-appropriated Fund Instrumentality (NAFI) Files.

SYSTEM LOCATION:

National Security Agency/Central Security Service, Ft. George G. Meade, MD 20755–6000.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Civilian DoD employees, non-appropriated fund instrumentality employees, employees of other Federal agencies or military departments, contractor employees, and dependents of these individuals, and personnel authorized to use DoD-sponsored MWR services and participate in NAFI sponsored activities.

CATEGORIES OF RECORDS IN THE SYSTEM:

Records include information on members, participants, patrons, and other authorized users to include name, address, phone number, Social Security Number (SSN), organization, correspondence; membership applications; special activity applications; accounts receivable records; loan information; dishonored check listings; and investigatory reports involving abuse of facilities.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

National Security Agency Act of 1959, Public Law 86–36 (50 U.S.C. 402 note), as amended; DoD Instruction 1015.08, DoD Civilian employee Morale, Welfare, and Recreation (MWR) Activities and Supporting Nonappropriated Fund Instrumentalities; DoD Instruction 1015.10, Military Morale, Welfare, and Recreation (MWR) Programs; NSA/CSS Policy 4–2, NSA/CSS Civilian Morale, Welfare, and Recreation Program; and E.O. 9397, as amended (SSN).

PURPOSE(S):

To develop MWR programs and NAFI to promote and provide a centrally managed, well-rounded MWR program to help ensure the mental and physical well being of its civilian and military personnel and to provide programs and resources through financial support from both appropriated and non-appropriated funds. Information will be used to maintain records necessary for the administration of MWR programs and NAFI.

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

In addition to those disclosures generally permitted under 5 U.S.C. 552a(b) of the Privacy Act of 1974, these records contained therein may specifically be disclosed outside the DoD as a routine use pursuant to 5 U.S.C. 552a(b)(3) as follows:

The DoD 'Blanket Routine Uses' set forth at the beginning of the NSA/CSS' compilation of systems of records notices apply to this system.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Paper records and on electronic storage media.

RETRIEVABILITY:

By name, organization (or affiliation), Social Security Number (SSN), home address and phone number, and subject matter.

SAFEGUARDS:

The NSA/CSS Fort Meade facility is secured by a series of guarded pedestrian gates and checkpoints. Access to the facility is limited to security cleared personnel and escorted visitors only. Within the facility itself,

access to paper and computer printouts is controlled by limited-access facilities and lockable containers. Access to electronic mediums is controlled by computer password protection.

Access to information is limited to those individuals specifically authorized and granted access by NSA/CSS regulations. For records on the computer system, access is controlled by passwords and limited to authorized personnel only.

RETENTION AND DISPOSAL:

Records are maintained for 6 years and 3 months, and then destroyed by pulping, burning, shredding, or erasure of magnetic media.

SYSTEM MANAGER(S) AND ADDRESS:

Associate Director for Installations and Logistics, National Security Agency/Central Security Service, 9800 Savage Road, Ft. George G. Meade, MD 20755–6000.

NOTIFICATION PROCEDURE:

Individuals seeking to determine whether information about themselves is contained in this system should address written inquiries to the National Security Agency/Central Security Service, Freedom of Information Act/Privacy Act Office, 9800 Savage Road, Ft. George G. Meade, MD 20755–6000.

Written inquiries should contain the individual's full name, Social Security Number (SSN) and mailing address.

RECORD ACCESS PROCEDURES:

Individuals seeking access to information about themselves contained in this system should address written inquiries to the National Security Agency/Central Security Service, Freedom of Information Act/Privacy Act Office, 9800 Savage Road, Ft. George G. Meade, MD 20755–6000.

Written inquiries should contain the individual's full name, Social Security Number (SSN) and mailing address.

CONTESTING RECORD PROCEDURES:

The NSA/CSS rules for contesting contents and appealing initial determinations are published at 32 CFR part 322 or may be obtained from the system manager.

RECORD SOURCE CATEGORIES:

Individual patrons/users of a service, and activity record.

EXEMPTIONS CLAIMED FOR THE SYSTEM:

None.

[FR Doc. 2010–10843 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Intent To Prepare an Environmental Impact Statement for Northwest Aggregates' Previously Authorized Replacement of an Existing Barge Loading Facility in East Passage of Puget Sound on the Southeast Shoreline of Maury Island, King County, WA

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DoD.

ACTION: Notice of intent.

SUMMARY: The U.S. Army Corps of Engineers (Corps) Seattle District is preparing an Environmental Impact Statement (EIS) to analyze the environmental effects of replacing an existing dock and resuming sand and gravel mining operations. The Corps issued a permit to Northwest Aggregates for the dock replacement project on June 2, 2008, under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Construction of the new dock began in December 2008 and approximately 49% of the construction was completed as of January 2009. The Corps has been directed by the U.S. District Court to complete an EIS on the project. The EIS will include additional analysis of potential impacts of the project on the marine environment, including Chinook salmon, Southern Resident Killer whales, and forage fish, additional analysis and evaluation of the no action and off-site alternatives, and additional analysis of cumulative impacts associated with the permit project.

DATES: Scoping meetings for this project will be held on (*see* **SUPPLEMENTARY INFORMATION** section).

ADDRESSES: The scoping meeting locations are (*see* **SUPPLEMENTARY INFORMATION** section).

FOR FURTHER INFORMATION CONTACT: Written comments on the scope of the EIS or requests for information should be addressed to Mrs. Olivia Romano, Project Manager, U.S. Army Corps of Engineers, Seattle Regulatory Branch, 4735 E. Marginal Way South, Seattle, Washington 98134; (206) 764–6960 or via e-mail to *olivia.h.romano@usace.army.mil*.

SUPPLEMENTARY INFORMATION: The EIS process begins with the publication of this Notice of Intent. The scoping period will continue for 30 days after publication of this Notice of Intent and will close on June 7, 2010. During the scoping period the Corps invites Federal agencies, State and local governments, Native American Tribes, and the public to participate in the scoping process either by providing written comments or by attending the public scoping meetings scheduled for at the time and location indicated.

1. May 17 from 6 p.m. to 8:30 p.m., Seattle, Washington. An open house will be held as part of the meeting from 6 p.m. to 7 p.m. Following a presentation on the project the open house will continue from 7:30 p.m. to 8:30 p.m. Located at Federal Center South, 4735 East Marginal Way South, Seattle, WA.

2. May 18 from 6 p.m. to 8:30 p.m. Vashon Island, Washington. An open house will be held as part of the meeting from 6 p.m. to 7 p.m. Following a presentation on the project the open house will continue from 7:30 p.m. to 8:30 p.m. Located at Vashon High School Commons, 20120 Vashon Highway, SW, Vashon Island, WA.

Written comments will be considered in the preparation of the Draft EIS. Comments postmarked or received by e-mail after the specified date will be considered to the extent feasible.

The purpose of the scoping meeting is to assist the Corps in defining issues, public concerns, alternatives, and the depth to which they will be evaluated in the EIS. The Corps has prepared a scoping announcement to familiarize agencies, the public and interested organizations with the Northwest Aggregates dock replacement project and potential environmental issues including completed construction work, the remaining construct work, and the operation of the dock. Copies of the scoping announcement will be available at the public meeting or can be requested by contacting the Corps Seattle District as described above. Corps' representatives will answer scope-related questions and accept comments.

The EIS will be prepared according to the Corps' procedures for implementing the National Environmental Policy Act (NEPA) of 1969, as amended, 42 U.S.C. 4232(2)(c), and consistent with the Corps' policy to facilitate public understanding and review of agency proposals. As part of the EIS process a full range of reasonable alternatives will be evaluated. Development of the Draft EIS will begin after the close of the public scoping period. The Draft EIS is expected to be available for public review in the Fall 2010.

Michelle Walker,

Chief, Regulatory Branch, Seattle District.

[FR Doc. 2010–10802 Filed 5–6–10; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Notice of Intent To Prepare a Draft Environmental Impact Statement for a Permit Application for the Proposed Gregory Canyon Landfill Project, in San Diego County, CA

AGENCY: U.S. Army Corps of Engineers, Los Angeles District, DoD.

ACTION: Notice of Intent (NOI).

SUMMARY: The U.S. Army Corps of Engineers, Los Angeles District (Corps) is examining the environmental consequences associated with the proposed construction, operation, and closure of a new Class III landfill in northern San Diego County, in connection with Gregory Canyon, Ltd.'s application for a Department of the Army permit under Section 404 of the Clean Water Act to construct the proposed Gregory Canyon Landfill and associated facilities, which would discharge fill materials into approximately 2 acres of waters of the U.S. (less than 1 acre would be affected by permanent discharges of fill) in the San Luis Rey River to construct a bridge and in Gregory Canyon to construct the landfill liner, stability berm, and ancillary facilities.

The primary federal environmental concerns are the proposed discharges of fill material into waters of the U.S. and the potential for significant adverse environmental effects resulting from such in-water activities. Therefore, to address these concerns in accordance with the National Environmental Policy Act (NEPA), the Corps is requiring preparation of an Environmental Impact Statement (EIS) prior to consideration of any permit action. The action must comply with the Section 404(b)(1) Guidelines (40 CFR part 230) and not be contrary to the public interest to be granted a Corps permit. The Corps may ultimately make a determination to permit or deny the above project, or permit or deny modified versions of the above project.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action or the scoping of the Draft EIS can be answered by Dr. Spencer MacNeil, Corps Senior Project Manager, at (805) 585–2152. Comments regarding scoping of the Draft EIS shall be addressed to: U.S. Army Corps of Engineers, Los Angeles District, Regulatory Division, Ventura Field Office, ATTN: CESPL–RG–N–2010–00354–SDM, 2151 Alessandro Drive, Suite 110, Ventura, California 93001, or *spencer.d.macneil@usace.army.mil.* Comment letters sent via electronic mail shall include the commenter's physical mailing address and the project title "Gregory Canyon Landfill Project" shall be included in the electronic mail's subject line.

SUPPLEMENTARY INFORMATION:

1. *Project Site and Background Information:* The proposed project is located in northern San Diego County on State Route 76 (SR 76), about three miles east of Interstate 15. The project site encompasses approximately 1,770 acres. There are three large, regional easements that cross the property: SR 76, a San Diego Gas & Electric (SDG&E) transmission corridor, and San Diego Pipelines Nos. 1 and 2 (First San Diego Aqueduct). In addition, the San Luis Rey River traverses the site in an east-west direction. A portion of Gregory Mountain is located on the project site; this mountain is considered culturally sacred by some Native Americans. The Gregory Canyon Landfill Project (proposed project) consists of the construction, operation, and closure of the proposed Gregory Canyon Landfill. The proposed landfill and its associated facilities would be located on the south side of SR 76 and would occupy approximately 308 acres of the site. The majority of the remaining property (a minimum of 1,313 acres) would be dedicated as permanent open space for long-term preservation of sensitive habitat and species.

The property is located adjacent to residential, agricultural, and Native American properties. A portion of the site was previously occupied by two dairies, which have ceased operation.

An Environmental Impact Report (EIR) was prepared for the project and was certified in 2003 and 2007 by the Director of the San Diego County Department of Environmental Health (DEH). Subsequently, in response to a court order for additional information regarding the identified water supply, an Addendum to the certified 2007 EIR was prepared. The 2008 Addendum was adopted by the Director of San Diego County DEH. The Court ruled that the Addendum was the appropriate document and that the issue was adequately addressed. A second Addendum was prepared to analyze a change in the provision of water for the project. This Addendum was adopted by the Director of the San Diego County DEH in January 2010.

2. *Proposed Action:* Gregory Canyon, Ltd., as project applicant, proposes to construct, operate, and close a Class III landfill on the project site. The construction activities would discharge fill materials into approximately 2 acres of waters of the U.S. (less than 1 acre would be affected by permanent discharges of fill) associated with constructing a bridge over the San Luis Rey River and with constructing the landfill liner, stability berm, and ancillary facilities in Gregory Canyon. The proposed landfill project would have a maximum daily intake of 5,000 tons and an annual intake of one million tons. The landfill would accept solid waste disposal for approximately 30 years. The landfill components would occupy approximately 308 acres of an approximately 1,770-acre site. All of the construction associated with the landfill would be located to the south of SR 76.

The landfill footprint, which would be constructed and filled in phases, would be approximately 197 acres (including relocated SDG&E transmission towers, see below) and would be located within Gregory Canyon. The landfill prism would consist of a double composite liner as well as a leachate collection and removal system with a protective cover. At times, periodic construction to open the next landfill cell would occur simultaneously with acceptance of solid waste.

Two borrow/stockpile areas, which would be used to store or excavate material for daily operation of the landfill, would be provided to the west of the landfill footprint. Borrow/Stockpile Area A, which would be about 22 acres in size, would be located adjacent to the western property boundary. A haul road would connect Borrow/Stockpile Area A with the landfill footprint. The haul road would be 20 feet wide and would run along the base of the adjacent hillside with turn-out locations for heavy equipment. Borrow/Stockpile Area B, which would be about 65 acres in size, would be located immediately to the west of the southern portion of the landfill footprint.

The proposed project includes the construction of an access road and bridge that would cross the San Luis Rey River, which runs through the property. The approximately 35.5 foot wide bridge would be approximately 640 feet in length, with five sets of piles. The proposed project includes modifications to SR 76 at the entrance. The modifications would widen the roadway to 52 to 64 feet to provide for an eastbound deceleration lane and a westbound left turn lane and would realign approximately 1,700 linear feet of roadway to the south of the existing alignment. The modifications are expected to improve sight distance and

facilitate truck movements at the access road on SR76.

The access road would lead to the ancillary facilities area just north of the landfill footprint. The ancillary facilities area would include booth and fee scale, an administration building, maintenance building, and a recyclable drop-off area. Two 10,000-gallon leachate- holding tanks, a 20,000-gallon water storage tank, a 20,000-gallon recycled water tank, and a 50 gallon per minute reverse osmosis system would be located in the ancillary facilities area.

In addition, the proposed project would include the relocation of SDG&E transmission towers located on the slope of Gregory Mountain and an option to relocate approximately 3,200 linear feet of San Diego County Water Authority Pipelines 1 and 2, which traverse the property. The proposed project would include the dedication of a minimum of 1,313 acres of the site as permanent open space for long-term preservation of sensitive habitat and species.

Through the EIS process, feasible environmental mitigation measures will be developed to reduce potential environmental impacts. Measures to reduce construction impacts would be implemented through construction contract specifications and permit requirements.

3. *Issues:* There are several potential environmental issues that will be addressed in the Draft EIS. Additional issues may be identified during the scoping process. Issues initially identified for evaluation in the Draft EIS as potentially significant include:

1. Visual impacts from the landform alterations;
2. air quality impacts from construction, operation, increased vehicle emissions;
3. biological impacts to habitat and wildlife;
4. cultural resources (ethnographic resources);
5. hydrogeology, surface hydrology and water quality from disturbance of sediment, operations, and runoff from development;
6. noise from increased traffic associated with operations;
7. traffic and transportation; and
8. cumulative impacts from past, present, and reasonably foreseeable future projects.

4. *Alternatives:* Several alternatives are being considered for the proposed action. The Draft EIS will include a co-equal analysis of the No Action and project alternatives considered. Alternatives were considered through the state environmental review process and an associated EIR that included a no project alternative; two on-site landfill scenarios; an on-site prescriptive design alternative with a single liner; two off-site North San Diego County locations; and alternatives to reduce the need for a landfill. The EIS will likely consider some of these alternatives. The EIS will include and evaluate a No Action Alternative that would not implement any of the proposed project elements and would not involve any discharge of dredged or fill material into waters of the U.S., and therefore, would not require a Corps permit. These alternatives will be further formulated and developed during the scoping process. Additional alternatives that may be developed during scoping will also be considered in the Draft EIS.

5. *Scoping Process:* The Corps will conduct a public scoping meeting for the proposed Gregory Canyon Landfill Project Draft EIS to receive public comment and to assess public concerns regarding the appropriate scope and preparation of the Draft EIS. Participation in the public meeting by federal, state, and local agencies and other interested organizations and persons is encouraged. The meeting will be held on June 3, 2010 beginning at 6:00 PM (PST) at the City of San Marcos Senior Center (Horizon Room), 111 Richmar Avenue, San Marcos, CA 92069. Comments on the proposed action, alternatives, or any additional concerns should be submitted in writing. Written comment letters will be accepted until June 18, 2010.

The Corps also anticipates formally consulting with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act and with the State Historic Preservation Officer under Section 106 of the National Historic Preservation Act.

6. *Availability of the Draft EIS:* The Draft EIS is expected to be published and circulated by mid-2011, and a public meeting will be held after its publication.

Dated: April 29, 2010.

Mark D. Cohen,

Deputy Chief, Regulatory Division, Corps of Engineers.

[FR Doc. 2010–10679 Filed 5–6–10; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF DEFENSE

Department of the Air Force

[Docket ID: USAF–2010–0015]

Privacy Act of 1974; System of Records

AGENCY: Department of the Air Force, DoD.

ACTION: Notice to add a system of records.

SUMMARY: The Department of the Air Force proposes to add a system of records to its inventory of record systems subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended.

DATES: The proposed action will be effective on June 7, 2010 unless comments are received that would result in a contrary determination.

ADDRESSES: You may submit comments, identified by docket number and title, by any of the following methods:

- *Federal Rulemaking Portal: http://www.regulations.gov*. Follow the instructions for submitting comments.
- *Mail:* Federal Docket Management System Office, 1160 Defense Pentagon, Washington, DC 20301–1160.

Instructions: All submissions received must include the agency name and docket number for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information.

FOR FURTHER INFORMATION CONTACT: Mr. Charles J. Shedrick, 703–696–6488.

SUPPLEMENTARY INFORMATION: The Department of the Air Force's notices for systems of records subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended, have been published in the **Federal Register** and are available from the Department of the Air Force Privacy Office, Air Force Privacy Act Office, Office of Warfighting Integration and Chief Information officer, ATTN: SAF/XCPPI, 1800 Air Force Pentagon, Washington DC 20330–1800.

The proposed systems report, as required by 5 U.S.C. 552a(r) of the Privacy Act, was submitted on April 27, 2010, to the House Committee on Oversight and Government Reform, the Senate Committee on Homeland Security and Governmental Affairs, and the Office of Management and Budget (OMB) pursuant to paragraph 4c of Appendix I to OMB Circular No. A–130, "Federal Agency Responsibilities for Maintaining Records About Individuals," dated February 8, 1996 (February 20, 1996; 61 FR 6427).

Dated: May 4, 2010.

Mitchell S. Bryman,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

F031 AFMC C

SYSTEM NAME:

Automated Installation Entry Control System/Visitor Center Enrollment System.

SYSTEM LOCATION:

Barnes Air National Guard Base, 104th Security Forces Squadron Attn: AIECS POC, 175 Falcon Drive, Building 31, MA 01085–1482.

MacDill Air Force Base, 6th Security Forces Squadron, Attn: AIECS POC, 2505 SOCOM Memorial Hwy., Building 203, FL 33621–1011.

Test Site C–3, Eglin Air Force Base, 46th Range Support Squadron (RANSS), Attn: AIECS POC, 308 West D Avenue, Suite 203, FL 32542–5418.

CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:

Active Duty, National Guard, and Reserve Personnel; government employees, contractors, retirees, dependents, visitors, and foreign personnel assigned to military installations.

CATEGORIES OF RECORDS IN THE SYSTEM:

Badge and vehicle control records that at a minimum include: Name, Social Security Number (SSN), Electronic Data Interchange Personal Identifier (EDIPI), home address, telephone number, citizenship, grade or rank, date of birth, place of birth, gender, employment information, military address, license plate number, driver's license number, vehicle make, model, year, color, driver's identification credential barcode data, and suspension, revocation, and debarment status.

AUTHORITY FOR MAINTENANCE OF THE SYSTEM:

10 U.S.C. 8013, Secretary of the Air Force, Powers and Duties; Department of Defense 5200.08–R Physical Security Program; Department of Defense Air Force Instruction (AFI) 31–203, Security Forces Management Information System (SFMIS); and Directive Type Memorandum 09–012, Interim Policy Guidance for DoD Physical Access Control; and E.O. 9397 (SSN), as amended.

PURPOSE(S):

The Automated Installation Entry Control System (AIECS) is a law enforcement tool designed to be installed at military installation vehicle entry gates. The system scans information off of DoD issued credentials and system-produced visitor passes presented to a lane-side barcode scanner in order to enhance security and vehicle throughput.

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USE:

In addition to those disclosures generally permitted under 5 U.S.C. 552A(b) of the Privacy Act of 1974, these records contained therein may be specifically disclosed outside the Department of Defense as a routine use pursuant to 5 U.S.C. 552a(b)(3) as follows:

The DoD 'Blanket Routine Uses' published at the beginning of the Air Force's compilation of systems of records notices apply to this system.

POLICIES AND PRACTICES FOR STORING, RETRIEVING, ACCESSING, RETAINING, AND DISPOSING OF RECORDS IN THE SYSTEM:

STORAGE:

Electronic storage media.

RETRIEVABILITY:

Data is retrieved by querying a driver's name, Social Security Number (SSN), Electronic Data Interchange Personal Identifier (EDIPI), or driver's identification credential barcode.

SAFEGUARDS:

Records are accessed by persons responsible for servicing the system in performance of their official duties. Individuals are properly screened and cleared for need-to-know. Records are stored in locked cabinets, locked rooms, or buildings with controlled entry. Computer records are controlled by computer system software.

RETENTION AND DISPOSAL:

Computer records are destroyed by erasing, deleting, or overwriting. Personnel records are retained indefinitely in line with law enforcement purposes. Audit records are retained for a period of three years, after which they are deleted from the system.

SYSTEM MANAGER(S) AND ADDRESS:

AIECS Program Manager, 642d ELSS, 642d Electronic Systems Squadron, 45 Arnold St., Bldg. 1600, Hanscom AFB, MA 01731–1600.

Barnes ANGB, 104th Security Forces Squadron, Attn: AIECS POC, 104th SFS, 175 Falcon Drive, Building 31, Barnes ANGB, Westfield, MA 01085–1482.

MacDill AFB, 6th SFS, Attn: AIECS POC, 6th SFS2505 SOCOM Memorial Hwy., Building 203, MacDill AFB, FL 33621–1011.

Test Site C–3 Eglin AFB, 46th RANSS, Attn: AIECS POC, Test Site C–3 308 West D Avenue, Suite 203, Eglin AFB, FL 32542–5418.

NOTIFICATION PROCEDURES:

Individuals seeking to determine whether information about themselves is contained in this system of records should address inquiries to their local Base Security Forces office.

Requests must contain full name, Social Security Number (SSN), and current mailing address.

Barnes ANGB, 104th SFS, Attn: AIECS POC, 104th SFS/SFM175 Falcon Drive, Building 31, Barnes ANGB, Westfield, MA 01085–1482.

MacDill AFB, 6th SFS, Attn: AIECS POC, 6th SFS/SFO 2505 SOCOM Memorial Hwy., Building 203, MacDill AFB, FL 33621–1011.

Test Site C–3 Eglin AFB, 46th RANSS, Attn: AIECS POC, Test Site C–3308 West D Avenue, Suite 203, Eglin AFB, FL 32542–5418.

RECORD ACCESS PROCEDURES:

Individuals seeking to access information about themselves contained in this system of records should address written inquiries to their local Base Security Forces office.

Requests must contain full name, Social Security Number (SSN), and current mailing address.

Barnes ANGB, 104th SFS, Attn: AIECS POC, 104th SFS/SFM175 Falcon Drive, Building 31, Barnes ANGB, Westfield, MA 01085–1482.

MacDill AFB, 6th SFS, Attn: AIECS POC, 6th SFS/SFO 2505 SOCOM Memorial Hwy., Building 203, MacDill AFB, FL 33621–1011.

Test Site C–3 Eglin AFB, 46th RANSS, Attn: AIECS POC, Test Site C–3308 West D Avenue, Suite 203, Eglin AFB, FL 32542–5418.

CONTESTING RECORD PROCEDURES:

The Air Force rules for accessing records, and for contesting contents and appealing initial agency determinations are published in Air Force Instruction 33–332; 32 CFR part 806b; or may be obtained from the system manager.

RECORD SOURCE CATEGORIES:

Information obtained from individuals and from Defense Enrollment Eligibility Reporting System (DEERS) and Security Forces Management Information System (SFMIS).

EXEMPTIONS CLAIMED FOR THE SYSTEM:

None.

[FR Doc. 2010–10850 Filed 5–6–10; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF EDUCATION

Notice Extending the Deadline Date for Transmittal of Applications and the Deadline Date for Intergovernmental Review for the Migrant Education Program (MEP) Consortium Incentive Grants Program for Fiscal Year (FY) 2010

AGENCY: Office of Elementary and Secondary Education, Department of Education.

ACTION: Notice Extending the Deadline Date for Transmittal of Applications and the Deadline Date for Intergovernmental Review for the Migrant Education Program (MEP) Consortium Incentive Grants Program for Fiscal Year (FY) 2010.

Catalog of Federal Domestic Assistance (CFDA) Number: 84.144F.

SUMMARY: On April 1, 2010, we published in the **Federal Register** (75 FR 16446) a notice inviting applications for new awards for FY 2010 for the MEP Consortium Incentive Grants program. That notice specified a deadline date of May 7, 2010, for the submission of applications. Since publication, however, we have learned that certain State educational agencies need additional time to receive approval from their State legislatures to apply for the grant. Therefore, in order to give applicants adequate time to receive that approval to apply and to submit their application packages, we are changing the deadline for the submission of applications to June 4, 2010. As a result of this extension of the deadline for submissions of applications, we are also extending the deadline for intergovernmental review to August 4, 2010. Applicants must refer to the April 1, 2010 Application Notice for all other requirements concerning this program.

DATES: *Deadline for Transmittal of MEP consortium Incentive Grants Program Applications:* June 4, 2010.

Deadline for Intergovernmental Review: August 4, 2010.

FOR FURTHER INFORMATION CONTACT: Michelle Moreno, U.S. Department of Education, Office of Migrant Education, 400 Maryland Avenue, SW., room 3E257, Washington, DC 20202–6135. Telephone: (202) 401–2928, or by e-mail: *michelle.moreno@ed.gov*.

If you use a telecommunications device for the deaf (TDD), call the Federal Relay Service (FRS), toll free, at 1–800–877–8339.

SUPPLEMENTARY INFORMATION: *Accessible Format:* Individuals with disabilities can obtain this document in an accessible format (e.g., braille, large print, audiotape, or computer diskette) on request to the program contact person listed under **FOR FURTHER INFORMATION CONTACT** in this notice.

Electronic Access to This Document: You can view this document, as well as all other documents of this Department published in the **Federal Register,** in text or Adobe Portable Document Format (PDF) on the Internet at the following site: *http://www.ed.gov/news/fedregister.* To use PDF you must have Adobe Acrobat Reader, which is available free at this site.

You may also view this document in text at the following site: *http://www.ed.gov/about/offices/list/oese/ome/index.html.*

Note: The official version of this document is the document published in the **Federal Register.** Free Internet access to the official edition of the **Federal Register** and the Code of Federal Regulations is available on GPO Access at: *http://www.gpoaccess.gov/nara/index.html.*

Program Authority: 20 U.S.C. 6398(d).

Dated: May 4, 2010.

Thelma Meléndez de Santa Ana,

Assistant Secretary for Elementary and Secondary Education.

[FR Doc. 2010–10870 Filed 5–6–10; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF ENERGY

Energy Information Administration

Agency Information Collection Activities: Proposed Collection; Comment Request

AGENCY: Energy Information Administration (EIA), Department of Energy (DOE).

ACTION: Agency Information Collection Activities: Proposed Collection; Comment Request.

SUMMARY: The EIA is soliciting comments on the proposed revisions and three-year extension to the following Petroleum Supply Forms: EIA–800, "Weekly Refinery and Fractionator Report," EIA–802, "Weekly Product Pipeline Report," EIA–803, "Weekly Crude Oil Stocks Report," EIA–804, "Weekly Imports Report," EIA–805, "Weekly Terminal Blenders Report," EIA–809, "Weekly Oxygenate Report," EIA–810, "Monthly Refinery Report," EIA–812, "Monthly Product Pipeline Report," EIA–813, "Monthly Crude Oil Report," EIA–814, "Monthly Imports Report," EIA–815, "Monthly Terminal and Blender Report," EIA–816, "Monthly Natural Gas Liquids Report," EIA–817, "Monthly Tanker and Barge Movement Report," EIA–819, "Monthly Oxygenate Report," and EIA–820, "Annual Refinery Report."

DATES: Comments must be filed by July 6, 2010. If you anticipate difficulty in submitting comments within that period, contact the person listed below as soon as possible.

ADDRESSES: Send comments to Sylvia Norris. To ensure receipt of the comments by the due date, submission by FAX (202–586–1076) or e-mail (*sylvia.norris@eia.doe.gov*) is recommended. The mailing address is Petroleum Division, EI–42, Forrestal Building, U.S. Department of Energy, 1000 Independence Ave., SW., Washington, DC 20585. Alternatively, Sylvia Norris may be contacted by telephone at 202–586–6106.

FOR FURTHER INFORMATION CONTACT: Requests for additional information or copies of any forms and instructions should be directed to Sylvia Norris at the address listed above. The proposed forms and changes in definitions and instructions are also available on the Internet at: *http://www.eia.doe.gov/oil_gas/petroleum/survey_forms/pet_survey_forms.html.*

SUPPLEMENTARY INFORMATION:

I. Background
II. Current Actions
III. Request for Comments

I. Background

The Federal Energy Administration Act of 1974 (15 U.S.C. 761 *et seq.*) and the DOE Organization Act (42 U.S.C. 7101 *et seq.*) require the EIA to carry out a centralized, comprehensive, and unified energy information program. This program collects, evaluates, assembles, analyzes, and disseminates information on energy resource reserves, production, demand, technology, and related economic and statistical information. This information is used to assess the adequacy of energy resources to meet near and longer term domestic demands and to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment.

The EIA, as part of its effort to comply with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501, *et seq.*), provides the general public and other Federal agencies with opportunities to comment on collections of energy information conducted by or in conjunction with the EIA. Also, the EIA will later seek approval for this collection by the Office of Management and Budget (OMB) under Section 3507(a) of the Paperwork Reduction Act of 1995.

The weekly petroleum supply surveys (Forms EIA–800, EIA–802, EIA–803, EIA–804, EIA–805 and EIA–809) are designed to highlight information on petroleum refinery operations, inventory levels, and imports of selected petroleum products in a timely manner. The information appears in the publications listed below and is also available electronically through the Internet at *http://www.eia.doe.gov/*.

Publications: Internet only publications are the *Weekly Petroleum Status Report, Short-Term Energy Outlook,* and *This Week in Petroleum.*

The monthly petroleum supply surveys (Forms EIA–810, EIA–812, EIA–813, EIA–814, EIA–815, EIA–816, EIA–817, and EIA–819) are designed to provide statistically reliable and comprehensive information not available from other sources to EIA, other Federal agencies, and the private sector for use in forecasting, policy making, planning, and analysis activities. The information appears in the publications listed below and is also available electronically through the Internet at *http://www.eia.doe.gov/*.

Publications: Internet only publications are the *Petroleum Supply Monthly, Petroleum Supply Annual,* and *Short-Term Energy Outlook.* Hardcopy and Internet publications are the *Monthly Energy Review* (DOE/EIA–0035), the *Annual Energy Review* (DOE/EIA–0384), and the *Annual Energy Outlook* (DOE/EIA–0383).

The annual petroleum supply survey (Form EIA–820) provides data on capacities, fuels consumed, natural gas consumed as hydrogen feedstock, crude oil receipts by method of transportation, and storage capacity of operating and idle petroleum refineries (including new refineries under construction), refineries shutdown with useable storage capacity, and refineries shutdown during the previous year. The information appears in the *Refinery Capacity Report* available electronically through the Internet at *http://www.eia.doe.gov/*.

Please refer to the proposed forms and instructions for more information about the purpose, who must report, when to report, where to submit, the elements to be reported, detailed instructions, provisions for confidentiality, and uses (including possible nonstatistical uses) of the information. For instructions on obtaining materials, *see* the **FOR FURTHER INFORMATION CONTACT** section.

II. Current Actions

The EIA proposes the following changes: For the Form EIA–801 (Weekly Bulk Terminal Report)—Discontinue collection of this report. All bulk terminal and blender reporting will be reported by site on Form EIA–805 (Weekly Bulk Terminal and Blender Report).

For the Form EIA–805 (Weekly Bulk Terminal and Blender Report)—Collect inventories for natural gas plant liquids and liquefied refinery gases, propane (including propylene), propylene (nonfuel use), fuel ethanol, finished motor gasoline (reformulated blended with fuel ethanol, reformulated other, conventional blended with fuel ethanol (Ed55 and lower, greater than Ed55), and conventional other), motor gasoline blending components (RBOB, CBOB, GTAB and all other), kerosene-type jet fuel, kerosene, distillate fuel oil (15 ppm sulfur and under, greater than 15 ppm to 500 ppm sulfur (incl), greater than 500 ppm sulfur), residual fuel oil and asphalt and road oil. Collect inputs and production for fuel ethanol, jet fuel, distillate fuel oil (15 ppm sulfur and under, greater than 15 ppm to 500 ppm sulfur (incl), greater than 500 ppm sulfur), and residual fuel oil.

For the form EIA–820 (Annual Refinery Report)—Discontinue collection of storage capacity on an annual basis. This information is now being collected semi-annually (March and September) on Form EIA–810, "Monthly Refinery Report."

III. Request for Comments

Prospective respondents and other interested parties should comment on the actions discussed in item II. The following guidelines are provided to assist in the preparation of comments. Please indicate to which form(s) your comments apply.

As a Potential Respondent to the Request for Information

A. Is the proposed collection of information necessary for the proper performance of the functions of the agency and does the information have practical utility?

B. What actions could be taken to help ensure and maximize the quality, objectivity, utility, and integrity of the information to be collected?

C. Are the instructions and definitions clear and sufficient? If not, which instructions need clarification?

D. Can the information be submitted by the respondent by the due date?

E. Public reporting burden for this collection is estimated to average:

Estimated hours per response: EIA–800, "Weekly Refinery and Fractionator Report,"—1.58 hours; EIA–802, "Weekly Product Pipeline Report,"—0.95 hours; EIA–803, "Weekly Crude Oil Stocks Report,"—0.50 hours; EIA–804, "Weekly Imports Report,"—1.75 hours; EIA–805, "Weekly Terminal Blenders Report,"—2.30 hours; EIA–809, "Weekly Oxygenate Report,"—1.00 hours; EIA–810, "Monthly Refinery Report,"—6.00 hours; EIA–812, "Monthly Product Pipeline Report,"—4.30 hours; EIA–813, "Monthly Crude Oil Report,"—2.50 hours; EIA–814, "Monthly Imports Report,"—2.55 hours; EIA–815, "Monthly Terminal Blenders Report,"—5.00 hours; EIA–816, "Monthly Natural Gas Liquids Report,"—0.95 hours; EIA–817, "Monthly Tanker and Barge Movement Report,"—2.25 hours; EIA–819, "Monthly Oxygenate Report,"—1.75 hours; and EIA–820, "Annual Refinery Report"—2.00 hours. The estimated burden includes the total time necessary to provide the requested information. In your opinion, how accurate is this estimate?

F. The agency estimates that the only cost to a respondent is for the time it will take to complete the collection. Will a respondent incur any start-up costs for reporting, or any recurring annual costs for operation, maintenance, and purchase of services associated with the information collection?

G. What additional actions could be taken to minimize the burden of this collection of information? Such actions may involve the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

H. Does any other Federal, State, or local agency collect similar information? If so, specify the agency, the data element(s), and the methods of collection.

As a Potential User of the Information To Be Collected

A. Is the proposed collection of information necessary for the proper performance of the functions of the agency and does the information have practical utility?

B. What actions could be taken to help ensure and maximize the quality, objectivity, utility, and integrity of the information disseminated?

C. Is the information useful at the levels of detail to be collected?

D. For what purpose(s) would the information be used? Be specific.

E. Are there alternate sources for the information and are they useful? If so, what are their weaknesses and/or strengths?

Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval of the forms. They also will become a matter of public record.

Statutory Authority: Section 13(b) of the Federal Energy Administration Act of 1974, Pub. L. 93–275, codified at 15 U.S.C. 772(b).

Issued in Washington, DC, on April 15, 2010.

Stephanie Brown,

Director, Statistics and Methods Group, Energy Information Administration.

[FR Doc. 2010–10831 Filed 5–6–10; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #1

April 29, 2010.

Take notice that the Commission received the following electric corporate filings:

Docket Numbers: EC10–61–000.
Applicants: AER NY-Gen, LLC, AG-Energy, LP, Eagle Creek Hydro Power, LLC, Eagle Creek Water Resources, LLC, Eagle Creek Land Resources, LLC, Eagle Creek Ogdensburg (LP), LLC, Eagle Creek Ogdensburg (GP), LLC, Hudson M3, LLC.
Description: Application for Authorization for Disposition of Jurisdictional Facilities, Request for Confidential Treatment, and Request for Expedited Consideration of AG-Energy, L.P., *et. al.*
Filed Date: 04/28/2010.
Accession Number: 20100428–5189.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 19, 2010.

Docket Numbers: EC10–62–000.
Applicants: Meadow Lake Wind Farm II LLC.
Description: Application for authorization for disposition of jurisdictional facilities and request for expedited action of Meadow Lake Wind Farm II LLC.
Filed Date: 04/28/2010.
Accession Number: 20100428–5218.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 19, 2010.

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER01–1099–014; ER02–1406–015; ER99–2928–011.
Applicants: Cleco Power LLC; Acadia Power Partners, LLC; Cleco Evangeline LLC.
Description: Cleco Power LLC *et. al.* submits amendment to their notice of non-material change in status and include the information requested by Commission Staff as Exhibit I.
Filed Date: 04/28/2010.
Accession Number: 20100429–0039.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 19, 2010.

Docket Numbers: ER08–1113–007.
Applicants: California Independent System Operator Corporation.
Description: California Independent System Operator Corporation submits 4/1/2010 Order on Compliance filing on the proceeding.
Filed Date: 04/28/2010.
Accession Number: 20100428–0217.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 19, 2010.

Docket Numbers: ER10–842–001.
Applicants: Energy Plus Holdings LLC.
Description: Energy Plus Holdings LLC submits substitute FERC Electric Tariff Volume 1, which adds information to the footer of the tariff.
Filed Date: 04/28/2010.
Accession Number: 20100428–0213.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 12, 2010.

Docket Numbers: ER10–1114–000.
Applicants: Illinois Power Company.
Description: Illinois Power Company submits tariff filing per 35.12: Illinois Power General Tariff, to be effective 4/29/2010.
Filed Date: 04/29/2010.
Accession Number: 20100429–5000.
Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Docket Numbers: ER10–1115–000.
Applicants: PECO Energy Company.
Description: PECO Energy Co submits the Transmission Interconnection Agreement with Public Service Electric and Gas Co.
Filed Date: 04/28/2010.
Accession Number: 20100429–0204.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 19, 2010.

Docket Numbers: ER10–1116–000.
Applicants: PECO Energy Company.
Description: Public Service Electric and Gas Company submits Notices of Cancellation of two agreements on file with FERC *etc.*
Filed Date: 04/28/2010.
Accession Number: 20100429–0203.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 19, 2010.

Docket Numbers: ER10–1117–000.
Applicants: Evergreen Wind Power V, LLC.
Description: Evergreeen Wind Power V, LLC *et al.* submits a Shared Facilities and Sublease Agreement, as amended between Evergreen Wind Power V and Stetson Wind II.
Filed Date: 04/28/2010.
Accession Number: 20100429–0202.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 19, 2010.

Docket Numbers: ER10–1118–000.
Applicants: Southwest Power Pool, Inc.
Description: Southwest Power Pool, Inc. submits an executed Meter Agent Services Agreement with the Municipal Energy Agency of Nebraska.
Filed Date: 04/28/2010.
Accession Number: 20100429–0201.
Comment Date: 5 p.m. Eastern Time on Wednesday, May 19, 2010.

Docket Numbers: ER10–1119–000.
Applicants: Central Illinois Public Service Company.
Description: Central Illinois Public Service Company submits tariff filing per 35.12: Central Illinois Public Service Company General Tariff to be effective 4/30/2010.
Filed Date: 04/29/2010.
Accession Number: 20100429–5041.
Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Docket Numbers: ER10–1120–000.
Applicants: Competitive Energy.
Description: Competitive Energy submits tariff filing per 35.12: MBR Filing to be effective 8/1/2001.
Filed Date: 04/29/2010.
Accession Number: 20100429–5049.
Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Docket Numbers: ER10–1121–000.
Applicants: Beaver Ridge Wind, LLC.
Description: Beaver Ridge Wind, LLC submits tariff filing per 35.12: Market Based Rate Authorization to be effective 7/1/2008.
Filed Date: 04/29/2010.
Accession Number: 20100429–5050.
Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Docket Numbers: ER10–1122–000.
Applicants: Hannaford Energy LLC.
Description: Hannaford Energy LLC submits tariff filing per 35.12: Market Rate Baseline to be effective 3/8/2010.
Filed Date: 04/29/2010.
Accession Number: 20100429–5053.
Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Docket Numbers: ER10–1123–000.
Applicants: Union Electric Company.
Description: Union Electric Company submits tariff filing per 35.12: Union Electric General Tariff to be effective 4/30/2010.
Filed Date: 04/29/2010.
Accession Number: 20100429–5091.
Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Docket Numbers: ER10–1124–000.
Applicants: Central Illinois Light Company.
Description: Central Illinois Light Company submits tariff filing per 35.12: Central Illinois Light Company General Tariff to be effective 4/30/2010.
Filed Date: 04/29/2010.
Accession Number: 20100429–5123.
Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Docket Numbers: ER10–1128–000.
Applicants: Commonwealth Edison Company.

Description: Commonwealth Edison Company submits tariff filing per 35.12: PSRT Baseline Filing to be effective 4/29/2010.

Filed Date: 04/29/2010.

Accession Number: 20100429–5134.

Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Take notice that the Commission received the following electric securities filings:

Docket Numbers: ES10–37–000.

Applicants: Old Dominion Electric Cooperative, Inc.

Description: Application of Old Dominion Electric Cooperative for Authorization to Issue Long-Term Debt and Request for Exemption from Competitive Bidding Requirements.

Filed Date: 04/29/2010.

Accession Number: 20100429–5024.

Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Docket Numbers: ES10–38–000.

Applicants: KCP&L Greater Missouri Operations Company.

Description: Application KCP&L Greater Missouri Operations Company for Authorization of Issuance of Long-Term Debt Securities Under Section 204 of the Federal Power Act.

Filed Date: 04/29/2010.

Accession Number: 20100429–5136.

Comment Date: 5 p.m. Eastern Time on Thursday, May 20, 2010.

Any person desiring to intervene or to protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214) on or before 5 p.m. Eastern time on the specified comment date. It is not necessary to separately intervene again in a subdocket related to a compliance filing if you have previously intervened in the same docket. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant. In reference to filings initiating a new proceeding, interventions or protests submitted on or before the comment deadline need not be served on persons other than the Applicant.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 14 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First St.,NE., Washington, DC 20426.

The filings in the above proceedings are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive e-mail notification when a document is added to a subscribed dockets(s). For assistance with any FERC Online service, please e-mail *FERCOnlineSupport@ferc.gov.* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2010–10804 Filed 5–6–10; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

[Case No. CAC–025]

Energy Conservation Program for Commercial Equipment: Decision and Order Granting a Waiver to Daikin AC (Americas), Inc. (Daikin) From the Department of Energy Commercial Package Air Conditioner and Heat Pump Test Procedures

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Decision and order.

SUMMARY: This notice publishes the U.S. Department of Energy's (DOE) decision and order in Case No. CAC–025, which grants a waiver to Daikin from the existing DOE test procedure applicable to commercial package central air conditioners and heat pumps. The waiver is specific to the Daikin variable speed and variable refrigerant volume VRV–III–C (commercial) multi-split heat pumps and heat recovery systems. As a condition of this waiver, Daikin must use the alternate test procedure set forth in this notice to test and rate its VRV–III–C multi-split products.

DATES: This Decision and Order is effective May 7, 2010.

FOR FURTHER INFORMATION CONTACT: Dr. Michael G. Raymond, U.S. Department of Energy, Building Technologies Program, Mail Stop EE–2J, 1000 Independence Avenue, SW., Washington, DC 20585–0121. *Telephone:* (202) 586–9611. *E-mail: Michael.Raymond@ee.doe.gov.*

Elizabeth Kohl, U.S. Department of Energy, Office of the General Counsel, Mail Stop GC–71, 1000 Independence Avenue, SW., Washington, DC 20585–0103. *Telephone:* (202) 586–7796. *E-mail: Elizabeth.Kohl@hq.doe.gov.*

SUPPLEMENTARY INFORMATION: In accordance with 10 CFR 431.401(f)(4), DOE gives notice that it issues the decision and order set forth below. In this decision and order, DOE grants Daikin a waiver from the existing DOE commercial package air conditioner and heat pump test procedures for its VRV–III–C multi-split products. This waiver requires Daikin use the alternate test procedure provided in this notice to test and rate the specified models from its VRV–III–C multi-split product line. The current test procedure is the Air-Conditioning and Refrigeration Institute (ARI) Standard 340/360–2004, "Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment" (incorporated by reference at 10 CFR 431.95(b)(2)).

Today's decision prohibits Daikin from making representations concerning the energy efficiency of these products unless the product has been tested consistent with the provisions and restrictions in the alternate test procedure set forth in the decision and order below, and the representations fairly disclose the test results. (42 U.S.C. 6314(d)). Distributors, retailers, and private labelers are held to the same standard when making representations regarding the energy efficiency of these products. (42 U.S.C. 6293(c)).

Issued in Washington, DC, on April 30, 2010.

Cathy Zoi,

Assistant Secretary, Energy Efficiency and Renewable Energy.

Decision and Order

In the Matter of: Daikin AC (Americas), Inc. (Daikin) (Case No. CAC–025).

Background

Title III of the Energy Policy and Conservation Act (EPCA) sets forth a variety of provisions concerning energy efficiency, including Part A of Title III, which establishes the "Energy Conservation Program for Consumer Products Other Than Automobiles." (42 U.S.C. 6291–6309) Part A–1 of Title III

provides for a similar energy efficiency program titled "Certain Industrial Equipment," which includes large and small commercial air-conditioning equipment, package boilers, storage water heaters, and other types of commercial equipment. (42 U.S.C. 6311–6317) EPCA specifically includes definitions, test procedures, labeling provisions, and energy conservation standards for covered equipment. It also provides DOE the authority to require information and reports from manufacturers. (42 U.S.C. 6311–6317) With respect to test procedures, the statute generally authorizes DOE to prescribe test procedures that are reasonably designed to produce test results that reflect energy efficiency, energy use, and estimated annual operating costs, and that are not unduly burdensome to conduct. (42 U.S.C. 6314(a)(2))

Today's notice involves commercial package air-conditioning and heating equipment under Part A–1. EPCA provides that for such equipment, "the test procedures shall be those generally accepted industry testing procedures or rating procedures developed or recognized by the Air-Conditioning and Refrigeration Institute or by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, as referenced in ASHRAE/IES Standard 90.1 and in effect on June 30, 1992." (42 U.S.C. 6314(a)(4)(A)) Under 42 U.S.C. 6314(a)(4)(B), the Secretary of Energy (the Secretary) must amend the test procedure for a covered commercial product if the applicable industry test procedure is amended, unless the Secretary determines, by rule and based on clear and convincing evidence, that such a modified test procedure does not meet the statutory criteria set forth in 42 U.S.C. 6314(a)(2) and (3).

On December 8, 2006, DOE published a final rule adopting test procedures for commercial package air-conditioning and heating equipment, effective January 8, 2007. 71 FR 71340. DOE adopted Air-Conditioning and Refrigeration Institute (ARI) Standard 210/240–2003 for small commercial package air-cooled air-conditioning and heating equipment with capacities <65,000 British thermal units per hour (Btu/h), and ARI Standard 340/360–2004 for large and very large commercial package air-cooled air-conditioning and heating equipment with capacities ≥ 65,000 Btu/h and <760,000 Btu/h, respectively. *Id.* at 71371. Pursuant to the final rule, DOE's regulations at 10 CFR 431.95(b)(1)–(2) incorporate by reference these two ARI standards, and 10 CFR 431.96 directs manufacturers of commercial package air-conditioning and heating equipment to use the appropriate procedure when measuring the energy efficiency of those products. The cooling capacities of Daikin's VRV–III–C commercial multi-split products, which have capacities between 72,000 Btu/hr and 192,000 Btu/hr, fall in the range covered by ARI Standard 340/360–2004.

In addition, DOE's regulations for covered equipment permit a person to seek a waiver for a particular basic model from the test procedure requirements for covered commercial equipment if (1) that basic model contains one or more design characteristics which prevent testing according to the prescribed test procedures, or (2) the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data. 10 CFR 431.401(a)(1). Petitioner must include in its waiver petition any alternate test procedures known to the petitioner to evaluate characteristics of the basic model in a manner representative of its energy consumption. 10 CFR 431.401(b)(1)(iii). The Assistant Secretary for Energy Efficiency and Renewable Energy (the Assistant Secretary) may grant a waiver subject to conditions, including adherence to alternate test procedures. 10 CFR 431.401(f)(4). Waivers remain in effect pursuant to the provisions of 10 CFR 431.401(g).

The waiver process also allows any interested person who has submitted a petition for waiver to file an application for interim waiver from the applicable test procedure requirements. 10 CFR 431.401(a)(2). An interim waiver may be granted if the Assistant Secretary determines that the applicant will experience economic hardship if the application for interim waiver is denied; if it appears likely that the petition for waiver will be granted; and/or if the Assistant Secretary determines that it would be desirable for public policy reasons to grant immediate relief pending a determination on the petition for waiver. 10 CFR 431.401(e)(3). An interim waiver remains in effect for 180 days or until DOE issues its determination on the petition for waiver, whichever occurs first. It may be extended by DOE for an additional 180 days. 10 CFR 431.401(e)(4).

On September 9, 2009, Daikin filed a petition for waiver and an application for interim waiver from the test procedures applicable to small and large commercial package air-cooled air-conditioning and heating equipment. The applicable test procedure is ARI 340/360–2004, specified in Tables 1 and 2 of 10 CFR 431.96. Daikin asserted that the two primary factors that prevent testing of multi-split variable speed products, regardless of manufacturer, are the same factors stated in the waivers that DOE granted to Mitsubishi Electric & Electronics USA, Inc. (Mitsubishi) for a similar line of commercial multi-split air-conditioning systems:

- Testing laboratories cannot test products with so many indoor units; and
- There are too many possible combinations of indoor and outdoor units to test. Mitsubishi (72 FR 17528, April 9, 2007); Samsung (72 FR 71387, Dec. 17, 2007); Fujitsu (72 FR 71383, Dec. 17, 2007); Daikin (73 FR 39680, July 10, 2008); Daikin (74 FR 15955, April 8, 2009); Sanyo (74 FR 16193, April 9, 2009); Daikin (74 FR 16373, April 10, 2009); and LG (74 FR 66330, December 15, 2009).

On December 15, 2009, DOE published Daikin's petition for waiver in the **Federal Register,** seeking public comment pursuant to 431.3401(b)(1)(iv), and granted the application for an interim waiver. 74 FR 66324. DOE received one comment on the Daikin petition; discussion of and DOE's response to this comment are set forth below.

In a similar case, DOE published a petition for waiver from Mitsubishi Electric and Electronics USA, Inc. (MEUS), for products very similar to Daikin's multi-split products. 71 FR 14858 (March 24, 2006). In the March 24, 2006 **Federal Register** notice, DOE also published and requested comment on an alternate test procedure for the MEUS products at issue. DOE stated that if it specified an alternate test procedure for MEUS in the subsequent decision and order, DOE would consider applying the same procedure to similar waivers for residential and commercial central air conditioners and heat pumps, including such products for which waivers had previously been granted. *Id.* at 14861. Comments were published along with the MEUS decision and order in the **Federal Register** on April 9, 2007. 72 FR 17528 (April 9, 2007). Most of the comments were favorable. Though one commenter indicated that a waiver was unnecessary, the commenter did not present a satisfactory way to test the products. *Id.* at 17529. Generally, commenters agreed that an alternate test procedure is necessary while a final test procedure for these types of products is being developed. *Id.* The MEUS decision and order included the

alternate test procedure adopted by DOE. *Id.*

Assertions and Determinations

Daikin's Petition for Waiver

Daikin seeks a waiver from the DOE test procedures for this product class on the grounds that its VRV–III–C multi-split heat pump and heat recovery systems contain design characteristics that prevent them from being tested using the current DOE test procedures. As stated above, Daikin asserts that there are two primary factors that prevent testing of multi-split variable speed products, regardless of manufacturer: Testing laboratories cannot test products with so many indoor units; there are too many possible combinations of indoor and outdoor units to test.

The VRV–III–C systems have operational characteristics similar to other commercial multi-split products manufactured by Mitsubishi, Samsung, Sanyo, Fujitsu and LG, all of which have been granted waivers. The Daikin VRV–III–C system can be connected to the complete range of Daikin ceiling mounted, concealed, ducted, corner, cassette, wall-mounted and floor-mounted, and other indoor fan coil units. Each of these units has nine different standard indoor static pressure ratings. Additional pressure ratings are available. There are over 1,000,000 possible combinations of the VRV–III–C products. Consequently, Daikin requests that DOE grant a waiver from the applicable test procedures for its VRV–III–C product designs until a suitable test method can be prescribed. DOE believes that the Daikin VRV–III–C equipment and equipment for which waivers have previously been granted are alike with respect to the factors that make them eligible for test procedure waivers. DOE therefore grants Daikin a VRV–III–C multi-split product waiver similar to the multi-split product waivers already issued to other manufacturers.

Previously, in addressing MEUS's R410A CITY MULTI VRFZ products, which are similar to the Daikin products at issue here, DOE stated:

To provide a test procedure from which manufacturers can make valid representations, the Department is considering setting an alternate test procedure for MEUS in the subsequent decision and order. Furthermore, if DOE specifies an alternate test procedure for MEUS, DOE is considering applying the alternate test procedure to similar waivers for residential and commercial central air conditioners and heat pumps. Such cases include Samsung's petition for its DVM products (70 FR 9629, February 28, 2005), Fujitsu's petition for its Airstage variable refrigerant flow (VRF) products (70 FR 5980, February 4, 2005), and MEUS's petition for its R22 CITY MULTI VRFZ products. (69 FR 52660, August 27, 2004).

71 FR 14861 (March 24, 2006).

In granting the petitions for waiver from MEUS, DOE specified an alternate test procedure that MEUS could use to test, and make valid energy efficiency representations for, its R410A CITY MULTI products and its R22 multi-split products. This alternate test procedure was published in the **Federal Register** on April 9, 2007 and on December 15, 2009. 72 FR 17528; 74 FR 66311. While Daikin did not include an alternate test procedure in its petition for waiver, DOE believes that the same alternate test procedure specified in the MEUS decision could be used to test the Daikin products at issue here.

DOE understands that existing testing facilities have a limited ability to test multiple indoor units at one time. It also understands it is impractical to test some variable refrigerant flow zoned systems because of the number of possible combinations of indoor and outdoor units. DOE further notes that after the waiver granted MEUS's R22 multi-split products, AHRI formed a committee to develop a testing protocol for variable refrigerant flow systems. The committee developed AHRI Standard 1230–2009: "Performance Rating of Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment." AHRI has adopted the standard.

Carrier Corporation (Carrier) commented that DOE should deny Daikin's petition for waiver and repeal all the other commercial multi-split waivers because of the availability of AHRI 1230–2009. However, AHRI 1230–2009, which is substantially the same as DOE's alternate test procedure with respect to the testing of these Daikin products, is not a part of DOE's test procedure. In addition, AHRI 1230–2009 has not yet been adopted by ASHRAE 90.1.

DOE issues today's decision and order granting Daikin a test procedure waiver for its commercial VRV–III–C multi-split heat pumps. As a condition of this waiver, Daikin must use the alternate test procedure described below. This alternate test procedure is the same in all relevant particulars as the procedure specified in DOE's decision and orders granting the MEUS waivers.

Alternate Test Procedure

The alternate test procedure permits Daikin to designate a tested combination for each model of outdoor unit. The indoor units designated as part of the tested combination must meet specific requirements. For example, the tested combination must have between two to eight indoor units so it can be tested in available test facilities. The tested combination was originally defined in the MEUS waivers to consist of one outdoor unit matched with between two and five indoor units. The maximum number of indoor units in a tested combination is increased in this Daikin waiver from five to eight because these larger-capacity products can accommodate more indoor units. The tested combination must be tested according to the applicable DOE test procedure, as modified by the provisions of the alternate test procedure as set forth below.

The alternate DOE test procedure also allows Daikin to represent the product's energy efficiency. These representations must fairly disclose the test results. The DOE test procedure, as modified by the alternate test procedure set forth in this decision and order, provides for efficiency rating of a non-tested combination in one of two ways: (1) At an energy efficiency level determined using a DOE-approved alternative rating method; or (2) at the efficiency level of the tested combination utilizing the same outdoor unit.

As in the MEUS waivers, DOE believes that allowing Daikin to make energy efficiency representations for non-tested combinations by adopting the alternative test procedure is reasonable because the outdoor unit is the principal efficiency driver. The current DOE test procedure for commercial products tends to rate these products conservatively because it does not account for their multi-zoning feature. The multi-zoning feature enables these products to cool only those portions of the building that require cooling. Products with a multi-zoning feature would be expected to use less energy than units controlled by a single thermostat, which cool the entire home or commercial building regardless of whether only portions need cooling. The multi-zoning feature would not be properly evaluated by the current test procedure, which requires full-load testing. Full load testing requires the entire building to be cooled. Products using a multi-zoning feature and subjected to full load testing would be at a disadvantage because they are optimized for highest efficiency when operating with less than full loads. The alternate test procedure will provide an appropriate basis for assessing the energy efficiency of such products.

With regard to the laboratory testing of commercial products, some of the difficulties associated with the existing

test procedure are avoided by the alternate test procedure's requirements for choosing the indoor units to be used in the manufacturer-specified tested combination. For example, in addition to limiting the number of indoor units, another requirement is that all the indoor units must be subjected to the same minimum external static pressure. This requirement enables the test lab to manifold the outlets from each indoor unit into a common plenum that supplies air to a single airflow measuring apparatus. This eliminates situations in which some of the indoor units are ducted and some are non-ducted. Without this requirement, the laboratory must evaluate the capacity of a subgroup of indoor coils separately and then sum the separate capacities to obtain the overall system capacity. Measuring capacity in this way would require that the test laboratory be equipped with multiple airflow measuring apparatuses. It is unlikely that any test laboratory would be equipped with the necessary number of such apparatuses. Alternatively, the test laboratory could connect its one airflow measuring apparatus to one or more common indoor units until the contribution of each indoor unit had been measured, which would be so time-consuming as to be impractical.

For the reasons discussed above, DOE believes Daikin's VRV–III–C multi-split products cannot be tested using the procedure prescribed in 10 CFR 431.96 (ARI Standard 340/360–2004) and incorporated by reference in DOE's regulations at 10 CFR 431.95(b)(2). After careful consideration, DOE has decided to prescribe the alternate test procedure first developed for the MEUS waiver for Daikin's commercial multi-split products. The alternate test procedure for the Daikin products must include the modifications described above.

Consultations With Other Agencies

DOE consulted with the Federal Trade Commission (FTC) staff concerning the Daikin petition for waiver. The FTC staff did not have any objections to issuing a waiver to Daikin.

Conclusion

After careful consideration of all the materials submitted by Daikin, the absence of any comments, and consultation with the FTC staff, it is ordered that:

(1) The petition for waiver filed by Daikin Electronics, Inc., (Daikin) (Case No. CAC–025) is hereby granted as set forth in the paragraphs below.

(2) Daikin shall not be required to test or rate its VRV–III–C multi-split air conditioner and heat pump models listed below on the basis of the test procedure cited in 10 CFR 431.96, specifically, ARI Standard 340/360–2004 (incorporated by reference in 10 CFR 431.95(b)(2)), but shall be required to test and rate such products according to the alternate test procedure as set forth in paragraph (3).

Type	Size	Model number	Combination	
			8–Ton	16–Ton
Condensing Unit	6–Ton	RTSQ72PTJU		1
	8–Ton	RTSQ96PTJU	1	
	10–Ton	RTSQ120PTJU		1
2nd Stage Function Unit	Up to 16–Ton	BTSQ192PTJU	1	1
Outdoor Piping Kit		BHFP30A56		1

(3) *Alternate test procedure.*

(A) Daikin is required to test the products listed in paragraph (2) above according to the test procedure for central air conditioners and heat pumps prescribed by DOE at 10 CFR Part 431 (ARI 340/360–2004, (incorporated by reference in 10 CFR 431.95(b)(2)), except that Daikin shall test a tested combination selected in accordance with the provisions of subparagraph (B) of this paragraph. For every other system combination using the same outdoor unit as the tested combination, Daikin shall make representations concerning the VRV–III–C products covered in this waiver according to the provisions of subparagraph (C) below.

(B) *Tested combination.* The term tested combination means a sample basic model comprised of units that are production units, or are representative of production units, of the basic model being tested. For the purposes of this waiver, the tested combination shall have the following features:

(i) The basic model of a variable refrigerant flow system used as a tested combination shall consist of an outdoor unit that is matched with between two and eight indoor units. For multi-split systems, each of these indoor units shall be designed for individual operation.

(ii) The indoor units shall:

(a) Represent the highest sales model family, or another indoor model family if the highest sales model family does not provide sufficient capacity (see b);

(b) Together, have a nominal cooling capacity that is between 95 percent and 105 percent of the nominal cooling capacity of the outdoor unit;

(c) Not, individually, have a nominal cooling capacity greater than 50 percent of the nominal cooling capacity of the outdoor unit;

(d) Operate at fan speeds that are consistent with the manufacturer's specifications; and

(e) Be subject to the same minimum external static pressure requirement.

(C) *Representations.* In making representations about the energy efficiency of its VRV–III–C multi-split products for compliance, marketing, or other purposes, Daikin must fairly disclose the results of testing under the DOE test procedure in a manner consistent with the provisions outlined below:

(i) For VRV–III–C multi-split combinations tested in accordance with this alternate test procedure, Daikin may make representations based on these test results.

(ii) For VRV–III–C multi-split combinations that are not tested, Daikin may make representations based on the testing results for the tested combination and that are consistent with either of the two following methods:

(a) Representation of non-tested combinations according to an alternative rating method (ARM) approved by DOE; or

(b) Representation of non-tested combinations at the same energy efficiency level as the tested combination with the same outdoor unit.

(4) This waiver shall remain in effect from the date this order is issued, consistent with the provisions of 10 CFR 431.401(g).

(5) This waiver is issued on the condition that the statements, representations, and documentary materials provided by the petitioner are valid. DOE may be revoke or modify the waiver at any time if it determines the factual basis underlying the petition for waiver is incorrect, or the results from the alternate test procedure are

unrepresentative of the basic models' true energy consumption characteristics.

Issued in Washington, DC, on April 30, 2010.

Cathy Zoi,
Assistant Secretary, Energy Efficiency and Renewable Energy.

[FR Doc. 2010–10813 Filed 5–6–10; 8:45 am]

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DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

[Docket Number: EERE–BT–2006–WAV–0140]

Energy Conservation Program for Consumer Products: Decision and Order Denying a Waiver to PB Heat, LLC From the Department of Energy Residential Furnace and Boiler Test Procedures

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy (DOE).

ACTION: Decision and Order.

SUMMARY: This notice publishes DOE's Decision and Order in Case No. WAV–0140, which denies a waiver to PB Heat, LLC (PB) from the existing DOE residential furnace and boiler test procedure. This Decision and Order pertains to PB's PO–50, PO–60, PO–63, and PO–73 models of oil-fired boilers. DOE previously published the PB Petition for Waiver and solicited comments, data, and information regarding the petition, which requested permission to publish a Low Water Temperature Seasonal Efficiency (LWTSE) value, conducted under an alternative industry test procedure, in addition to the mandatory Annual Fuel Utilization Efficiency (AFUE) value required under DOE's energy conservation standards. PB's petition suggested that testing and reporting of the AFUE value alone is not representative of its basic models' true energy consumption characteristics. DOE denies PB's Petition for Waiver for the reasons set forth below. Because a waiver is not appropriate, DOE cannot prescribe an alternative test procedure. However, the Decision and Order clarifies that it is permissible for a manufacturer to conduct LWTSE testing and to present such results in product literature. It is noted that the Energy Guide label used for certification and consumer information purposes can only present information generated under the DOE test procedure, as required under applicable Federal Trade Commission (FTC) regulations. When making such supplemental statements in the product literature, manufacturers must continue to conduct, report, and fairly disclose the AFUE test results generated under the DOE test procedures, and to use those AFUE results when making representations as to the basic model's energy efficiency. Supplemental statements regarding LWTSE must fairly disclose the results of such testing and may not mislead the consumer about the relevance of the required AFUE value. For example, DOE suggests any manufacturer that wishes to show the LWTSE values in addition to the AFUE value should make clear the differences between the two tests, including the different operating characteristics and conditions, for consumers.

DATES: This Decision and Order is effective May 7, 2010.

FOR FURTHER INFORMATION CONTACT: Mr. Mohammed Khan, U.S. Department of Energy, Building Technologies Program, EE–2J, 1000 Independence Avenue, SW., Washington, DC 20585–0121. Telephone: (202) 586–7892. E-mail: *Mohammed.Khan@ee.doe.gov.*

Ms. Francine Pinto or Mr. Eric Stas, U.S. Department of Energy, Office of the General Counsel, GC–71, 1000 Independence Avenue, SW., Washington, DC 20585–0121. Telephone: (202) 586–9507. E-mail: *Francine.Pinto@hq.doe.gov* or *Eric.Stas@hq.doe.gov.*

For access to the docket to read this notice, the Petition for Waiver, background documents, or comments received, please call Ms. Brenda Edwards at (202) 586–2945 for information regarding visiting the Resource Room of the Building Technologies Program. The Resource Room is accessible at the U.S. Department of Energy, 950 L'Enfant Plaza, SW., Suite 600, Washington, DC, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION: In accordance with 10 CFR 430.27(l), DOE gives notice of the issuance of its Decision and Order as set forth below. In this Decision and Order, DOE denies PB's request for a waiver from the existing DOE residential furnace and boiler test procedure for its PO–50, PO–60, PO–63, and PO–73 models of oil-fired boilers. DOE denies the waiver because: (1) The PB units can and do operate at the higher water temperatures specified in the DOE test procedure; (2) there is no indication that the existing test procedure generates inaccurate results at the specified temperatures; and (3) the PB units meet the AFUE level required under the energy conservation standard. Accordingly, DOE has determined that the applicable test procedure is representative of the energy consumption characteristics of the PB basic models at the specified conditions (*i.e.,* water temperatures) and that the DOE test procedures for these residential products will allow PB to test and rate its above-referenced line of oil-fired boilers.

DOE clarifies that it is permissible for a manufacturer to conduct LWTSE testing and present the results in product literature (other than supplementation of the certification label, which can only present information generated under the DOE test procedure, as required under applicable FTC regulations). When making such supplemental statements in product literature, manufacturers must continue to conduct, report, and fairly disclose the AFUE test results generated under the DOE test procedures (10 CFR 430.62(a)(4)(viii)), and to use AFUE results when making representations as to the basic model's energy efficiency (42 U.S.C. 6293(c)(1)). Supplemental statements regarding LWTSE must fairly disclose the results of such testing and may not mislead the consumer about the relevance of the required AFUE value. For example, DOE suggests any manufacturer that wishes to show the LWTSE values in addition to the AFUE value should make clear the differences between the two tests, including the different operating characteristics and conditions, for consumers.

Issued in Washington, DC, April 30, 2010.

Cathy Zoi,

Assistant Secretary, Energy Efficiency and Renewable Energy.

Decision and Order

In the Matter of: PB Heat, LLC (PB) (Case No. WAV–0140).

Authority

Title III of the Energy Policy and Conservation Act of 1975 (EPCA), as amended, sets forth a variety of provisions concerning energy efficiency, including Part A [1] of Title III, which establishes the "Energy Conservation Program for Consumer Products Other Than Automobiles." (42 U.S.C. 6291–6309) Similarly, Part A–1 [2] of Title III of EPCA, 42 U.S.C. 6311–6317, provides for an energy efficiency program titled,

[1] This part was originally titled Part B. It was redesignated Part A in the United States Code for editorial reasons.

[2] This part was originally titled Part C. It was redesignated Part A–1 in the United States Code for editorial reasons.

"Energy Efficiency Program for Certain Commercial and Industrial Equipment." (42 U.S.C. 6311–6317)

In general, Part A of Title III also provides for test procedures, labeling, and energy conservation standards for a variety of covered consumer products, including residential furnaces and boilers, and it authorizes DOE to require information and reports from manufacturers. With respect to test procedures, the statute generally authorizes the Secretary of Energy (the Secretary) to prescribe test procedures that are reasonably designed to produce results which reflect energy efficiency, energy use, and estimated annual operating costs, and that are not unduly burdensome to conduct. (42 U.S.C. 6293(b)(3)) The statute further provides that no manufacturer, distributor, retailer, or private labeler may make any representation in writing (including on a label) or in any broadcast advertisement with respect to the energy use or efficiency (or water use) of a covered product to which a DOE test procedure is applicable, unless such product has been tested in accordance with such test procedure and such representation fairly discloses the results of such testing. (42 U.S.C. 6293(c)(1))

In relevant part, EPCA requires that DOE prescribe standardized test procedures to measure the energy consumption of residential furnaces and boilers in terms of the AFUE metric. (42 U.S.C. 6291(22)(A)) DOE adopted test procedures for residential furnaces and boilers which are codified at 10 CFR 430.23(n) and at 10 CFR 430, subpart B, appendix N ("Uniform Test Method For Measuring the Energy Consumption of Furnaces and Boilers"). The DOE test procedure incorporates by reference provisions of the American National Standards Institute (ANSI)/American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) Standard 103–1993, "Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers." The test procedure prescribes a standardized method for measuring the energy consumption of various types of furnaces and boilers. Further, the test procedure measurements can be used in determining model-specific energy consumption information to assist consumers in making purchasing decisions.

DOE's regulations set forth under 10 CFR 430.27 contain provisions that enable a person to seek a waiver from the test procedure requirements for a covered consumer product under the following circumstances. Any interested person may submit a petition for waiver upon the grounds that the basic model contains a design characteristic which either prevents testing of the basic model according to the prescribed test procedures, or the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data. 10 CFR 430.27(a)(1).

Furthermore, the regulations authorize the Assistant Secretary for Energy Efficiency and Renewable Energy (Assistant Secretary) to grant an Interim Waiver from test procedure requirements applicable to a particular basic model of consumer product, if it is determined that the applicant will experience economic hardship if the Application for Interim Waiver is denied, if it appears likely that the Petition for Waiver will be granted, and/or the Assistant Secretary determines that it would be desirable for public policy reasons to grant immediate relief pending a determination on the Petition for Waiver. 10 CFR 430.27(g). An Interim Waiver will remain in effect for 180 days or until DOE issues its determination on the Petition for Waiver, whichever occurs first. Further, an Interim Waiver may be extended for an additional 180 days. 10 CFR 430.27(h).

Assertions and Determinations

PB submitted a Petition for Waiver from the temperature requirements listed in ASHRAE Standard 103–1993, with errata of October 24, 1996, which are incorporated into appendix N to subpart B of 10 CFR Part 430. The Petition for Waiver is based on the grounds that "'the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics'" [as to provide materially inaccurate comparative data]. 71 FR 46460, 46463 (August 14, 2006). In its petition, PB requested that in addition to the mandatory reporting of AFUE, it be allowed to also provide an LWTSE efficiency measure for its oil-fired boilers based upon testing under the procedures in Appendix F of ASHRAE Standard 103–2003 (Public Review Draft).[3] *Id.* at 46463–64.

1. PB Petition for Waiver

On March 27, 2006, PB filed a petition requesting that it be permitted to publish an LWTSE value in conjunction with the AFUE value that is the result of testing under 10 CFR part 430, subpart B, appendix N (*i.e.,* the test procedures for residential furnaces and boilers). At specific issue in the PB Petition are its PO–50, PO–60, PO–63 and PO–73 models of oil-fired boilers. PB stated that the AFUE value from the prescribed test procedure may result in an evaluation of the basic model that is unrepresentative of its true energy consumption characteristics. PB did not request to rely on the LWTSE metric in lieu of the AFUE metric, but instead requested permission to publish both values for its residential boilers. DOE's current test procedure does not provide for LWTSE testing, which represents a variant of AFUE under different operating conditions (*i.e.,* lower return water temperatures).

DOE understands that residential boilers are typically used either with baseboard convector or radiant floor heating systems that circulate water in a closed-loop fashion. Originating at the boiler, heated water is pumped to the convectors or radiant floor coils. As the water passes through the convectors or floor coils, heat is extracted, and the water is cooled. The heated water exiting the boiler is termed "supply water," and the cooled water entering the boiler is termed, "return water." For any given system, the return water temperature is directly related to the supply water temperature, which can be set at the boiler. Also, the return water temperature is a function of a house's heating load and the effectiveness of either the convector or radiant floor coil system. Different heating systems and heating control systems may provide different water temperatures. For example, supply and return water temperatures are typically lower for a radiant floor coil system than a convector system. Nevertheless, to uniformly test and compare the AFUE of different residential boiler heating systems, the procedure in 10 CFR part 430, subpart B, appendix N specifies the use of standardized supply and return water temperatures for measuring the AFUE. As part of the petition, PB asserted that the specified temperatures do not suitably match the expected performance characteristics of the

[3] The Review Draft is currently part of ASHRAE Standard 103–2007 as an informative appendix. ASHRAE Standard 103–2007 states, "This appendix is not part of the standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal to ASHRAE or ANSI." However, for ease of discussion, this document will continue to refer to ASHRAE Standard 103–2003, as specified in PB's original petition.

subject boiler units, and consequently, the prescribed test procedures under 10 CFR 430.23(n)(2) and in 10 CFR part 430, subpart B, appendix N, evaluate the subject boiler models in a manner that is unrepresentative of their true energy consumption characteristics in the field.

PB stated that if a boiler is used with radiant floor heating systems, the return and supply water temperatures are far lower than those seen with baseboard convector systems. Similarly, PB stated that if a boiler is used with baseboard convector heating systems, in combination with outdoor reset controls, the supply water temperatures can be lower than that specified in the DOE test procedure for some fraction of the heating season. In its petition, PB also asserted that because the boilers in question are supplied with an outdoor reset control from the manufacturer, the boilers installed with either radiant floor heating systems or baseboard convector heating systems are capable of achieving condensing conditions, and increased efficiency and reduced energy use, during warmer periods of the heating season.

In particular, PB asserted that its oil-fired boiler models PO–50, PO–60, PO–63, and PO–73 achieve fully-condensing conditions at return water temperatures that are below the 120 degrees Fahrenheit (EF) return water temperature required under the test procedure at 10 CFR 430.23(n)(2) and 10 CFR 430, subpart B, appendix N. According to PB, these oil-fired boilers are designed to operate in low-temperature applications, and are supplied with an outdoor reset control that can allow the boiler to operate with lower return water temperatures for much of the heating season.

In contrast, the DOE test procedure prescribed for boilers, under 10 CFR 430.23(n) and 10 CFR part 430, subpart B, appendix N, requires a return water temperature of 120 °F. PB asserted that the DOE test procedure will not reflect the efficiency that its boilers are capable of achieving due to the variations in the return water temperature. Instead, PB argued that the procedure described in ASHRAE Standard 103–2003, which uses a nominal return water temperature of 90 °F and a nominal supply water temperature of 110 °F, would better represent the seasonal efficiency of its boilers. PB believes that a waiver permitting publication of LWTSE would allow customers making purchasing decisions to "receive the greatest seasonal efficiency, save money on fuel costs and apply for the Energy Tax Credit that is part of the Federal Energy Bill of 2005." 71 FR 46460, 46464 (August 14, 2006).

2. Factors To Consider in Granting or Evaluating a Petition

DOE understands that PB is seeking a waiver of the test procedure requirements for return water temperature under 10 CFR 430.23(n)(2), because the petitioner asserts that the test procedure may evaluate its boiler models PO–50, PO–60, PO–63, and PO–73 in a manner so unrepresentative of their true energy consumption characteristics as to provide materially inaccurate comparative data. Also, DOE understands that PB seeks to use an alternative test procedure (*i.e.,* draft ASHRAE Standard 103–2003), which specifies lower supply and return water temperatures than required in DOE's test procedure and a different seasonal efficiency metric. In addition, PB requested permission to publish an LWTSE in addition to AFUE for its residential boilers.

In light of the above, DOE considered the potential impacts of testing condensing boilers under lower water temperatures, as suggested by PB. In its notice publishing PB's Petition for Waiver, DOE expressed concern that the reliability of the approach suggested by PB in fact depends upon different seasonal and heating conditions that can vary from house to house, such as heating load profile that is a function of geographic location, temperature of the return water necessary for condensation, and the performance of a particular house's baseboard convectors or radiant floor heating system. DOE also tentatively concluded that appendix F of the draft ASHRAE Standard 103–2003 (which specifically states it is intended for radiant floor heating systems) does not take into account how often a boiler will operate in the condensing mode with a baseboard convector system, even with an outdoor reset control. Thus, it may not accurately reflect "annualized" efficiency, which could cause confusion to consumers making a purchasing decision. Further, DOE understands from the PB petition that outdoor reset controls are "supplied" with its boilers. However, it is unclear whether such controls are an integral part of the boiler itself or a separate mechanism for installation in the field. If these control mechanisms are field-installed, DOE cannot be certain that a boiler would be equipped with the intended outdoor controls, which ultimately impact the annual energy use of the unit. It is DOE's understanding that the outdoor temperature reset does not replace the safety mechanisms in place for residential boilers, which prevent them from operating at temperatures well above the DOE test procedure conditions. Finally, DOE questioned whether granting a waiver to PB could result in LTWSE ratings for its oil-fired boiler models PO–50, PO–60, PO–63, and PO–73 that do not enable uniform comparison with the ratings of other oil-fired boilers. 71 FR 46460, 46461 (August 14, 2006).

Discussion of Comments

DOE announced in the **Federal Register** the PB Petition for Waiver, the potential use of draft ASHRAE Standard 103–2003, appendix F as an alternative test procedure for residential oil-fired furnaces and boilers, a calculation methodology for LWTSE, and a request for public comments. 71 FR 46460 (August 14, 2006).

In particular, DOE requested comments on the following questions:

- Does the DOE test procedure provide results that are unrepresentative of the PB PO–50, PO–60, PO–63, and PO–73 models of oil-fired boilers' energy consumption so as to provide materially inaccurate comparative data in all installations?
- Were PB to be granted a waiver, would it lead to a proliferation of petitions for waiver for other oil-fired boilers?
- Is the DOE test procedure appropriate for boilers used with baseboard convector heating systems?
- Are there other metrics that can be used to assess the performance of low-water-temperature boilers used with baseboard heating systems?
- Is it appropriate for PB to use the proposed alternate test procedures for ratings and representations, and compliance with energy efficiency standards, building codes, and regulatory requirements?
- Should the Department prescribe for manufacturers the LWTSE for low-water-temperature boilers?

Id. at 46462.

In response, DOE received comments from seven interested parties. The comments appear in Docket No. EERE–BT–2006–WAV–0140. (See the **FOR FURTHER INFORMATION CONTACT** section in this notice for further information about access to the docket.) The following discussion identifies each interested party and summarizes its relevant comments.

(1) Bradford White Corporation

Bradford White Corporation (BWC) generally opposed the Petition for Waiver and commented that lowering the supply water temperature (140 °F) and the return water temperature (120 °F) specified in ASHRAE Standard 103–1993 to 110 °F and 90 °F, respectively,

as PB requests, could increase the rated AFUE for all other boilers, especially condensing types. Further, BWC stated that the condensing products on today's market, including those with outdoor temperature reset controls, are currently rated according to the existing test procedures. In response to the above questions, BWC opined that the current test procedure (10 CFR 430.23(n)(2)) "does not provide materially inaccurate comparative data." (BWC, 9 at p.1) Instead, BWC suggested that it is designed to select a single set of operating conditions that a boiler may see in service and measure efficiency at that point. This single operating test point allows consumers to compare data across available models and manufacturers. BWC asserted that the current test procedure is appropriate for boilers used with baseboard convector systems, and that creating other ratings would confuse the market and consumers by creating a matrix of boiler types, system types, operating temperatures, and so forth. (BWC, 9 at p.2)

(2) National Oilheat Research Alliance

National Oilheat Research Alliance (NORA) generally favored the PB Petition for Waiver and provided several assertions to substantiate its position. First, the oil heating industry has objected to the AFUE rating procedure because it fails to recognize the benefits that controls and electronics may have on overall system efficiency. Second, NORA stated that the current test procedure for AFUE does not serve the interests of consumers because it does not allow the measurement of an oilheating boiler when it is fully condensing. Third, NORA argued that the operating system controls, including use of an outside reset feature, can adjust boiler water temperatures to meet particular heating loads, thereby improving efficiency over a range of weather conditions. (NORA, 8 at p.1,2)

(3) ECR International, Inc.

ECR International, Inc. (ECRI) strongly urged DOE to deny the PB Petition for Waiver. In general, ECRI did not object to the supplemental use of LWTSE for marketing and informational purposes. However, ECRI asserted that the AFUE test results under DOE's test conditions must be clearly distinguished from the optional LWTSE metrics to prevent consumer confusion. Notwithstanding the above, ECRI objected to the PB Petition for Waiver for the following reasons. According to ECRI, AFUE provides a common standard by which a consumer can make a logical comparison between boiler models and manufacturers. However, AFUE can only be used for relative comparisons between boilers and not absolute expectations of fuel consumption, because the actual efficiency of a boiler depends on many factors that vary from house to house and the current test procedure requires a steady state condition for return water temperature. As an example, ECRI states that the performance of a unit configured with an outdoor reset feature and indirect domestic hot water heating will be different from a system without such features and that return water temperatures vary in any one demand cycle. (ECR, 6 at p.1)

In response to the above questions raised by DOE, ECRI offered the following comments. First, ECRI generally stated that AFUE and LWTSE metrics are not comparable. ECRI opined that the LWTSE metric would provide a higher efficiency value using the same test method due to differences in operating temperatures. Second, if DOE grants PB a waiver, ECRI will apply for and expect to receive a waiver for its products (both gas and oil types), and the result would be an increase of one to three percentage points of efficiency. Third, the current test procedure is appropriate for boilers used in baseboard applications, because AFUE enables comparisons between various boiler types. Fourth, the current use of AFUE allows for comparisons of low-water-temperature boilers. Fifth, it is not appropriate to use the LWTSE rating for compliance with energy efficiency standards, because reducing the water temperature would reduce the validity of the testing protocol. Overall, ECRI asserted that DOE should not substitute AFUE with LWTSE, and instead, ECRI recommended using LWTSE as a supplement to an AFUE rating to provide consumers with additional information on condition that the information is not confusing to consumers. (ECRI, 6 at p.2,3)

(4) Burnham Hydronics

In general, Burnham Hydronics (BH) agreed with PB that the current test procedure underestimates boiler efficiency in low-temperature applications, but it stated that all condensing boilers are disadvantaged in this way, so there should be no waiver. Further, BH opined that if a waiver were granted, there would not be a proliferation of waivers from the two manufacturers of oil-fired boilers, but there would be a proliferation of waivers from the more than twenty manufacturers of gas-fired boilers. BH stated its belief that the current test procedure overestimates the efficiency of boilers that are used in baseboard heating systems, and underestimates the efficiency of boilers used in condensing systems. BH asserted that there are no other metrics that can be used to measure the performance of low-water-temperature boilers used with baseboard heating systems, and that it is not appropriate to use a test procedure for LWTSE to meet established energy efficiency standards. As a minimum, BH reasoned that the current test procedure puts all condensing boiler manufacturers on a level playing field. Lastly, BH commented that DOE could prescribe LWTSE for low-water-temperature boilers, but only through the rulemaking process. (BH, 3 at p.1,2)

(5) Brookhaven National Laboratory

Brookhaven National Laboratory (BNL) commented that the current AFUE test procedure for boilers specifies supply and return water temperatures at 140 °F and 120 °F, respectively. This return water temperature is specified both for condensing and non-condensing boilers. At this return water temperature, BNL stated that a gas-fired boiler can condense, but an oil-fired boiler will not. Furthermore, due to the lower water vapor content and lower latent heat loss, an oil-fired boiler will achieve higher efficiency than a gas-fired boiler under non-condensing conditions with the same excess air and flue gas temperature. (BNL, 10 at p. 1)

BNL stated its understanding that actual boiler temperatures can vary considerably in the field, and that the temperature in a particular system can be affected by controls, including outdoor reset controls. According to BNL, studies have shown that outdoor reset controls can enable condensing oil-fired boilers to operate in a condensing mode for most of the heating season, even when used with baseboard radiators. (BNL, 10 at p. 1)

In response to DOE's request for comments on other metrics that can be considered for low-water-temperature boilers used with baseboard heating systems, BNL addressed controls that provide variable water temperature. BNL stated that the ASHRAE Special Products Committee 155 is developing a test method for commercial boilers that includes the effects of controls and variable water temperatures, which would result in an "Application Seasonal Efficiency" where controls, oversize features, and multiple boiler options can be selected to evaluate performance in a particular building. In addition, BNL commented that the method for "Determination of Boiler Performance for Low Water

Temperature Applications," defined an appendix to the public review draft ASHRAE Standard 103, "Method of Testing Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers," was developed only for information and in particular for low temperature applications, such as radiant floor heating. BNL stated that this optional methodology uses supply and return water temperatures that are low enough to allow for condensing both in oil- and gas-fired boilers, but because this methodology uses a fixed-temperature water supply, it does not apply to a system with a variable temperature water supply. (BNL, 10 at p. 1, 2)

(6) Quincy Hydronic Technology, Inc.

Quincy Hydronic Technology, Inc. (QHT) strongly opposed granting a waiver to PB, arguing that it would be unfair to manufacturers that produce high-efficiency boilers which meet the required AFUE levels. Moreover, QHT objected to the AFUE rating system generally and asserted that it is not only flawed, but penalizes high-efficiency products. QHT cited examples of its B–10 boilers, wall-mounting gas boilers, and flexible cast iron boilers that essentially reduce fuel consumption and are more efficient because of innovative designs, but such benefits cannot be demonstrated through the AFUE test procedure. QHT indicated that, based on homeowner feedback, AFUE ratings fail consumers when making purchasing decisions. QHT opined that if PB were to receive a waiver, then DOE should expect requests for waivers from many manufacturers. QHT argued that DOE should revise the current test procedure so that it better reflects the performance boilers can achieve in actual field use and to make AFUE more meaningful. (QHT, 5 at p. 1, 2)

(7) LAARS Heating Systems Company

LAARS Heating Systems Company (LHSC) opposed granting a waiver to PB for its line of PO models of oil-fired boilers. According to LHSC, the change that PB requests for inlet and outlet temperatures from the levels currently specified in ASHRAE Standard 103–1993 (*i.e.,* from 120 °F/140 °F to 90 °F/110 °F) would increase the rated AFUE for these products, as it would for most other gas-fired and oil-fired boilers, and in particular condensing boilers. Further, if a new test procedure methodology is provided by waiver for only the PB products, then consumers would not be able to make reliable comparisons of AFUE ratings with the product lines of other manufacturers. Accordingly, LHSC argued that any change in the current test procedure should be industry-wide. (LHSC, 11 at p. 1)

In response to DOE's questions, LHSC commented that the current test procedure is not materially inaccurate, but it is designed for a single set of operating conditions and measures efficiency at that point, to enable consumers to compare data across available products. Also, LHSC reasoned that the test procedure is appropriate for boilers used with baseboard convector systems that are typically designed for 180 °F supply/160 °F return temperatures, which would result in slightly different installed operating efficiencies than rated AFUE. LHSC observed that existing standards, codes, and other regulatory requirements rely on the current test procedures for AFUE, so providing a unique set of testing requirements through waiver would give PB an unfair competitive advantage in meeting such requirements. In addition, AFUE is the only metric for measuring boiler performance, regardless of boiler or type of heating system that uses gas-fired or oil-fired boilers, and introducing other ratings would cause confusion in the marketplace. LHSC opined that using the alternative test procedure for ratings and representations, as proposed by PB, would artificially raise the ratings for products made by PB over the boiler products of other manufacturers that test for AFUE under the current test procedures. Nevertheless, LHSC asserted that DOE should review and seek comments on potential changes to ASHRAE Standard 103 and consider adoption of appropriate amendments to the test procedure suitable for implementation on an industry-wide basis. (LHSC, 11 at p. 2)

Response to Comments and DOE Determination

Regarding the responses received to the above questions raised by DOE and other issues presented by commenters, DOE offers the following discussion.

First, DOE asked whether the currently-prescribed test procedures may evaluate the PO-series basic model of oil-fired boiler manufactured by PB in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate data. Interested parties commented that although the current test procedure measures efficiency at a single operating point under steady-state conditions, it nevertheless underestimates boiler efficiency in low-temperature applications, and in some cases penalizes high-efficiency designs. Two interested parties objected to the current test procedure because it does not consider the benefits that electronic controls (such as an outdoor temperature reset feature that can adjust boiler output temperature to meet a particular heating need) may have on overall system efficiency, nor does the current test procedure allow for measuring boiler efficiency when it is fully condensing.

DOE generally divides products for standard-setting purposes into product classes by type of energy used, capacity, or other performance-related feature affecting energy efficiency. (42 U.S.C. 6295(q)(1)) In the case of residential boilers, DOE has established product classes based on fuel type, including gas-fired and oil-fired units. 10 CFR 430.32(e)(2).

DOE understands that the current test procedure, at 10 CFR 430.23(n)(2) and 10 CFR part 430, subpart B, appendix N, measures AFUE at steady-state operating conditions under certain supply and return water temperatures. The test procedure for all oil-fired boilers, regardless of manufacturer and across the entire range of efficiencies, was developed to provide a reasonable interpretation to the consumer of the annual fuel utilization efficiency. In order to do this, DOE requires testing at specific incoming and exiting water temperatures to provide a fair comparison for boilers offered for sale and to minimize testing burden on manufacturers. This enables consumers to make comparisons among various gas-fired or oil-fired boilers all operating under the same operating test condition.

While DOE acknowledges that there are certain design features that could enhance efficiency which may not be captured by the current test procedure and statutory metric, one option would be for DOE to consider test procedure revisions in the future, which consider variations to the water temperatures experienced by different systems. PB did not provide any data supplementing their claims to show how the AFUE is impacted by varying water temperatures. In addition, PB also did not provide any data which would give DOE an indication of the proportion of time that the boiler spends operating at various water temperatures throughout the year. (Note: DOE realizes such data would be location and installation dependent.) Given that the statutory metric is AFUE, the current test procedure adequately measures that metric.

When asked if there would be a proliferation of petitions for waiver if PB were granted a waiver, interested parties that commented on this issue

predicted that there would be some petitions for waiver from manufacturers of oil-fired boilers, and more so from manufacturers of gas-fired boilers. In light of the above comments, DOE understands that there would likely be many petitions for waiver from the prescribed test procedures under 10 CFR 430.23(n)(2). However, such considerations do not affect whether PB's Petition for Waiver should be granted on its merits.

DOE believes that an alternative test procedure that is based on the informative appendix F of draft ASHRAE Standard 103–2003 could provide consumers with additional information about system efficiency under various operating conditions in the field, such as those used in radiant heating applications. However, as mentioned in comments by BNL, the procedure provided in appendix F does not address fully the more complicated issue of variable temperature controls.

DOE asked about the appropriateness of its test procedure as it relates to boilers used with baseboard systems. Interested parties generally commented that the current test procedure is appropriate for boilers used with baseboard convector heating systems. It does not provide materially inaccurate comparative data, but is designed around a single set of operating conditions, thereby enabling consumers to compare data and make valid comparisons between products. DOE asked whether there are other metrics that can be used to assess the performance of low-water-temperature boilers used with baseboard heating systems. Interested parties generally commented that the current test procedure is appropriate, because it allows relative comparisons between low-temperature boilers, and that creating other ratings could cause confusion in the marketplace. DOE agrees that the current test procedure allows for an effective means for relative comparisons because the test establishes a single-point operating condition for all boilers regardless of how the boilers are used in actual field installations. For the same reason however, DOE is sensitive to the fact that the test procedure cannot capture the variance in performance of boilers which might be capable of different ratings when tested at other operating conditions (or tested with certain controls). By requiring testing under a specific set of operating conditions, DOE's test procedure allows for reasonable representations to be made of the efficiency, irrespective of efficiency at other conditions or manufacturer.

In response to DOE's request for comments on whether it would be appropriate for PB to use an alternative test procedure for its ratings, representations, and compliance with energy efficiency standards, building codes, and other regulatory requirements, interested parties generally opined that it would not be appropriate to use a test procedure that measures LWTSE to meet established energy efficiency standards or regulations that are based on AFUE. Further, because such regulations rely on the current test procedures for AFUE, commenters argued that providing a unique set of testing requirements would give one manufacturer an unfair competitive advantage in meeting such requirements. Further, DOE understands that the variance in operating conditions, which impact the efficiency of the boiler, are not manufacturer-specific or model-specific. If DOE were to consider any changes, it would do so in a separate proceeding. DOE agrees that using LWTSE would be inappropriate because AFUE is the established metric, and, in addition, not deviating from the current AFUE metric and test procedure would maintain a method for consistent and equivalent comparisons of all boilers.

As to whether DOE should prescribe a test procedure and establish levels for LWTSE, DOE did not receive specific comments on the technical merits of PB's requested alternative test procedure as a proposed amendment to 10 CFR part 430, subpart B, appendix N—Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers. 71 FR 46460, 46461 (August 14, 2006). Instead, interested parties commented that if DOE prescribes a test procedure and standard for LWTSE, it should be through the rulemaking process, include the opportunity for public comments, and be applied on an industry-wide basis. Two interested parties generally addressed the test method defined in appendix F of the public review draft ASHRAE Standard 103, and one interested party said that the method of test was developed for low-water-temperature applications, such as radiant floor heating systems, but for information purposes only. (BNL, 10 at p.2) The other interested party asserted that DOE should seek comments on changes to ASHRAE Standard 103, and make appropriate changes to the DOE test procedures. (LHSC, 11 at p.2) DOE believes the most appropriate approach presently is to not propose an amendment prescribing the alternative test procedure and establishing standard levels based on LWTSE. However, DOE is sensitive to the potential issue of its current test procedure possibly underrating the efficiency of some boilers used in condensing modes/systems. Accordingly, DOE is receptive to any comments and suggestions for workable solutions during any future DOE activity aimed at revising the test procedure. DOE believes that a full understanding of the issue and identification of the appropriate approaches to remedying issues can only be accomplished through a rulemaking process.

DOE appreciates all of the comments it received, which have helped DOE reach a more fully informed decision regarding the PB Petition. DOE recognizes the concern raised by some commenters that the current DOE test procedure may not equally estimate the performance of condensing boilers and non-condensing boilers, and some commenters believe that the LWTSE test procedure would better characterize the efficiency of condensing boilers. DOE believes, however, that the LWTSE test procedure, which specifies lower fixed test temperatures only, may not be comprehensive enough to either capture or sufficiently represent the performance of condensing systems equipped with certain controls (*i.e.,* temperature reset controls) that vary system operating temperatures. A revised test procedure that both accommodates lower water temperatures and captures the potential benefits of control strategies may be required to wholly and accurately characterize the spectrum of available boiler products and operating conditions. Even though DOE understands that there could be a variety of operating conditions experienced in the field, PB has not shown that the current AFUE test cannot be applied to these models. In addition, the test procedures are to provide reasonable efficiency ratings across the range of covered oil-fired boilers, and DOE was not provided details as to why DOE's test procedure does not accurately capture the energy efficiency of the range of products currently sold.

In light of the above, DOE has determined the following in response to the PB Petition for Waiver. Pursuant to 42 U.S.C. 6291(22)(A), the "efficiency descriptor" for furnaces (of which boilers are one type) is annual fuel utilization efficiency. Because the efficiency metric for those products are set by statute, DOE does not have authority to substitute other metrics to rate the efficiency of residential furnaces and boilers. The DOE test

procedure prescribed at 10 CFR 430.23(n) and contained in 10 CFR part 430, subpart B, appendix N require AFUE testing of boilers with an inlet water temperature of 140 °F and an outlet water temperature of 120 °F. DOE could, however, consider modifications to the test conditions in the AFUE test as part of a separate rulemaking proceeding if DOE had data showing different test conditions were more appropriate.

Even though PB's Petition for Waiver requested permission to report information supplemental to AFUE rather than to only report different data expected to be more representative than AFUE, PB asserted that the DOE test procedure generates results that are so unrepresentative of the true energy consumption characteristics of its basic models as to provide materially inaccurate comparative data.

After subsequent inquiry concerning PB's assertion and in light of the above, DOE has determined that the PB boilers in question can and do operate at the higher water temperatures specified in the DOE test procedure. PB did not state that its units are incapable of operating at higher water temperatures; DOE understands the units are neither shipped with an add-on component nor equipped with an integral part that precludes operation at higher water temperatures. As stated earlier in this Decision and Order, system water temperatures are a function of many factors unrelated to the unit itself and can range significantly. In the absence of outdoor temperature reset, the incoming water temperatures can vary greatly depending on heating load, installation, and other factors. Thus, because the PB boilers can operate at the temperatures specified in the existing DOE test procedures, it is appropriate to test at those temperatures when rating the unit's AFUE. Testing in this manner provides a steady-state test condition that generates results that can be compared across a range of products and manufacturers. PB has provided no evidence to suggest that the existing test procedure generates results that are either inaccurate or are not representative when testing is conducted at the higher temperatures specified in the test procedure. Therefore, a waiver is not appropriate, which in turn provides no basis for granting an alternative test procedure.

The PB Petition for Waiver has raised a legitimate issue of whether the DOE test procedure would benefit from amendments to test and rate the performance of boilers at lower water input and output temperatures, as well as the efficiency effects of various controls for those products. PB has suggested that results generated at lower water temperature conditions would be more typical of the specified models' performance, although it did not state that its products would be unable to be tested using DOE's test procedure or to meet the energy conservation standard when testing is conducted at the higher water temperatures specified in the existing DOE test procedure for residential boilers. However, given their potential complexity, DOE believes that such issues should be addressed in the context of a rulemaking with the opportunity for public notice and comment. The results of such rulemaking would apply on an industry-wide basis, thereby resulting in no advantage or disadvantage to any particular manufacturer. DOE may consider potential amendments to the test procedure regarding testing the energy efficiency of condensing boilers at lower water temperatures as part of a future rulemaking.

In the meantime, DOE points out that PB and similarly situated manufacturers may make supplemental statements regarding the energy efficiency of their boilers (*e.g.,* on marketing materials, Web sites), provided that they continue to disclose the AFUE result generated using the DOE test procedure. Such supplemental results must not mislead the consumer and must be clearly distinguished from the AFUE results. With that said, DOE notes that it has examined ASHRAE Standard 103–2003 (Public Review Draft) and believes it to be generally adequate for the supplemental testing purposes envisioned by PB, provided that the significance of LWTSE results are explained and clearly differentiated from AFUE results, so as to prevent consumer confusion in the marketplace. Since LWTSE test conditions promote condensing operation, DOE would caution, in the interest of consumer safety, that units tested accordingly, and advertised with a LWTSE, be appropriately designed or equipped to contend with potential corrosion issues which are typically associated with condensates produced from low-temperature flue gases. Accordingly, nothing currently prevents PB (or any other manufacturer) from reporting low-water-temperature test results for the boilers in question, along with the required AFUE results in marketing or other informative materials for consumers. DOE suggests any manufacturer that wishes to show the LWTSE values in addition to the AFUE values clearly distinguish the differences between the two tests, including the different operating characteristics, for consumers. DOE notes, however, that such supplemental information could not be placed on the product's Energy Guide label, because the FTC's regulations limit such information to results generated under the DOE test procedure.

Consultations With Other Agencies

DOE consulted with the FTC staff concerning the PB Petition for Waiver. The FTC staff did not have any objections to the decision to deny a waiver to PB.

Conclusion

After careful consideration of all the materials submitted by PB and consultation with the FTC staff, for the reasons above, it is ordered that:

(1) The "Petition for Waiver" filed by PB Heat, LLC (PB) (Case No. WAV–0140) is hereby denied for the reasons discussed above; and

(2) PB shall be required to test or rate the AFUE of its residential PO–50, PO–60, PO–63, and PO–73 oil-fired boilers on the basis of the current test procedure contained in 10 CFR 430.23(n) and 10 CFR part 430, subpart B, appendix N.

PB may conduct LWTSE testing and report the results in product literature (other than supplementation of the certification label), provided that the AFUE test results generated under the DOE test procedure continue to be disclosed and that the LWTSE results provide reasonable, clear, and distinguishable representations of those results to the consumer.

Issued in Washington, DC, on April 30, 2010.

Cathy Zoi,
Assistant Secretary,
Energy Efficiency and Renewable Energy.

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DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER10–1089–000]

EquiPower Resources Management, LLC; Supplemental Notice That Initial Market-Based Rate Filing Includes Request for Blanket Section 204 Authorization

April 29, 2010.

This is a supplemental notice in the above-referenced proceeding of EquiPower Resources Management, LLC's application for market-based rate authority, with an accompanying rate

tariff, noting that such application includes a request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability.

Any person desiring to intervene or to protest should file with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant.

Notice is hereby given that the deadline for filing protests with regard to the applicant's request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability, is May 19, 2010.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 14 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First St., NE., Washington, DC 20426.

The filings in the above-referenced proceeding are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive e-mail notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please e-mail *FERCOnlineSupport@ferc.gov.* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2010–10803 Filed 5–6–10; 8:45 am]

BILLING CODE 6717–01–P

FEDERAL ENERGY REGULATORY COMMISSION

[Docket No. ER10–1110–000]

Mint Energy LLC; Supplemental Notice That Initial Market-Based Rate Filing Includes Request for Blanket Section 204 Authorization

April 29, 2010.

This is a supplemental notice in the above-referenced proceeding of Mint Energy LLC's application for market-based rate authority, with an accompanying rate tariff, noting that such application includes a request for blanket authorization, under 18 CFR Part 34, of future issuances of securities and assumptions of liability.

Any person desiring to intervene or to protest should file with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant.

Notice is hereby given that the deadline for filing protests with regard to the applicant's request for blanket authorization, under 18 CFR Part 34, of future issuances of securities and assumptions of liability, is May 19, 2010.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 14 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First St., NE., Washington, DC 20426.

The filings in the above-referenced proceeding are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive e-mail notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please e-mail *FERCOnlineSupport@ferc.gov.* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2010–10806 Filed 5–6–10; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER10–1109–000]

Eagle Creek Hydro Power, LLC; Supplemental Notice That Initial Market-Based Rate Filing Includes Request for Blanket Section 204 Authorization

April 29, 2010.

This is a supplemental notice in the above-referenced proceeding of Eagle Creek Hydro Power, LLC's application for market-based rate authority, with an accompanying rate tariff, noting that such application includes a request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability.

Any person desiring to intervene or to protest should file with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant.

Notice is hereby given that the deadline for filing protests with regard to the applicant's request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability, is May 19, 2010.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 14 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First St., NE., Washington, DC 20426.

The filings in the above-referenced proceeding are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive e-mail notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please e-mail *FERCOnlineSupport@ferc.gov* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2010–10805 Filed 5–6–10; 8:45 am]

BILLING CODE 6717–01–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OECA–2005–0062; ER–FRL–8990–3]

Agency Information Collection Activities; Proposed Collection; Comment Request; Procedures for Implementing the National Environmental Policy Act and Assessing the Environmental Effects Abroad of EPA Actions (Renewal); EPA ICR No. 2243.06, OMB Control No. 2020–0033

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (PRA) (44 U.S.C. 3501 *et seq.*), this document announces that EPA is planning to submit a request to renew an existing approved Information Collection Request (ICR) to the Office of Management and Budget (OMB). This ICR is scheduled to expire on August 31, 2010. Before submitting the ICR to OMB for review and approval, EPA is soliciting comments on specific aspects of the proposed information collection as described below.

DATES: Comments must be submitted on or before Tuesday, July 6, 2010.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–OECA–2005–0062, by one of the following methods:

- *http://www.regulations.gov:* Follow the on-line instructions for submitting comments.
- *E-mail: trice.jessica@epa.gov.*
- *Fax:* 202–564–0072.
- *Mail:* Enforcement and Compliance Docket, Environmental Protection Agency, Mailcode: 28221T, 1200 Pennsylvania Ave., NW., Washington, DC 20460.
- *Hand Delivery:* EPA Headquarters West Building, Room 3334, located at 1301 Constitution Ave., NW., Washington, DC 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA–HQ–OECA–2005–0062. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *http://www.regulations.gov* or e-mail. The *http://www.regulations.gov* Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *http://www.regulations.gov* your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at *http://www.epa.gov/epahome/dockets.htm.*

FOR FURTHER INFORMATION CONTACT: Jessica Trice, Office of Federal Activities, Mail Code 2252A, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (202) 564–6646; fax number: (202) 564–0072; e-mail address: *trice.jessica@epa.gov.*

SUPPLEMENTARY INFORMATION:

How can I access the docket and/or submit comments?

EPA has established a public docket for this ICR under Docket ID No. EPA–HQ–OECA–2005–0062, which is available for online viewing at *http://www.regulations.gov,* or in person viewing at the Enforcement and Compliance Docket in the EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The EPA/DC Public Reading Room is open from 8 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is 202–566–1744, and the telephone number for the Enforcement and Compliance Docket is 202–566–1752.

Use *http://www.regulations.gov* to obtain a copy of the draft collection of information, submit or view public comments, access the index listing of the contents of the docket, and to access those documents in the public docket that are available electronically. Once in the system, select "search," then key in the docket ID number identified in this document.

What information is EPA particularly interested in?

Pursuant to section 3506(c)(2)(A) of the PRA, EPA specifically solicits comments and information to enable it to:

(i) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the Agency, including whether the information will have practical utility;

(ii) evaluate the accuracy of the Agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(iii) enhance the quality, utility, and clarity of the information to be collected; and

(iv) minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses. In particular, EPA is requesting comments from very small businesses (those that employ less than 25) on examples of specific additional efforts that EPA could make to reduce the paperwork burden for very small businesses affected by this collection.

What should I consider when I prepare my comments for EPA?

You may find the following suggestions helpful for preparing your comments:

1. Explain your views as clearly as possible and provide specific examples.
2. Describe any assumptions that you used.
3. Provide copies of any technical information and/or data you used that support your views.
4. If you estimate potential burden or costs, explain how you arrived at the estimate that you provide.
5. Offer alternative ways to improve the collection activity.
6. Make sure to submit your comments by the deadline identified under **DATES.**
7. To ensure proper receipt by EPA, be sure to identify the docket ID number assigned to this action in the subject line on the first page of your response. You may also provide the name, date, and Federal Register citation.

What information collection activity or ICR does this apply to?

Affected entities: Entities potentially affected by this action are certain grant or permit applicants who must submit environmental information documentation to EPA for their projects to comply with NEPA or Executive Order 12114. The applicant burden for any EPA action subject to NEPA and/or Executive Order 12114 that is based on an applicant proposal, including Wastewater Treatment Construction Grants Program facilities, STAG actions subject to NEPA and new source NPDES permits issued by EPA, is addressed in this ICR. EPA's Executive Order 12114 implementing procedures further the purpose of NEPA and provide that EPA may be guided by the CEQ Regulations to the extent they are applicable. Therefore, when EPA conducts an environmental assessment pursuant to its Executive Order 12114 procedures, the Agency generally follows the CEQ Regulations and the procedures in EPA's NEPA implementing regulations.

Title: Agency Information Collection Activities; Proposed Collection; Comment Request; Procedures for Implementing the National Environmental Policy Act and Assessing the Environmental Effects Abroad of EPA Actions (Renewal).

ICR numbers: EPA ICR No. 2243.06, OMB Control No. 2020–0033.

ICR status: This ICR is currently scheduled to expire on August 31, 2010. An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information, unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in title 40 of the CFR, after appearing in the **Federal Register** when approved, are listed in 40 CFR part 9, are displayed either by publication in the **Federal Register** or by other appropriate means, such as on the related collection instrument or form, if applicable. The display of OMB control numbers in certain EPA regulations is consolidated in 40 CFR part 9.

Abstract: The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321–4347 establishes the Federal government's national policy for protection of the environment. The Council on Environmental Quality Regulations (CEQ Regulations) at 40 CFR parts 1500 through 1508 establish procedures implementing the national policy. The CEQ Regulations (40 CFR 1505.1) require Federal agencies to adopt and, as needed, revise their own implementing procedures to supplement the CEQ Regulations and to ensure their decision-making processes are consistent with NEPA.

Those subject to the final NEPA rule include EPA officials who must comply with NEPA, and certain grant or permit applicants who must submit environmental information documentation to EPA for their proposed projects. The final NEPA regulations consolidate and standardize the environmental review process applicable to all EPA actions subject to NEPA, including those actions now specifically addressed in the regulations and other actions subject to NEPA but not specifically addressed in the regulations (*e.g.,* certain grants awarded for special projects authorized by Congress through the Agency's annual Appropriations Act).

Compliance with the final NEPA regulations is the responsibility of EPA's Responsible Officials. For applicant-proposed actions, certain procedures apply to applicants (that is grantees and permit applicants) who must submit environmental information to EPA as part of the environmental review process. The EPA Responsible Official is responsible for the environmental review process, including any categorical exclusion determination or the scope, accuracy, and contents of a final environmental assessment (EA) or environmental impact statement (EIS) and any supporting documents.

The applicant contributes by submitting environmental information to EPA as part of the environmental review process. For actions subject to NEPA, the Responsible Official may determine that the proposed action does not individually or cumulatively have a significant effect on the human environment and may, therefore, be categorically excluded from further NEPA review. If the proposed action is not categorically excluded, the Responsible Official may prepare an EA in order to determine whether to prepare an EIS or a finding of no significant impact (FONSI). If necessary, the Responsible Official must prepare an EIS if the proposed action will have a significant effect on the human environment. For applicant-proposed actions, the applicant may submit information to the Responsible Official regarding the applicability of a categorical exclusion and request a determination by the Responsible Official. Unless the applicant-proposed action is categorically excluded, the Responsible Official may gather the information and prepare the NEPA documents without assistance from the applicant, or have the applicant prepare an environmental information document (EID) or a draft EA and supporting documents or implement a third-party contract agreement with the applicant.

EPA is collecting information from certain applicants as part of the process of complying with either NEPA or Executive Order 12114. EPA's NEPA regulations apply to the actions of EPA that are subject to NEPA in order to ensure that environmental information is available to the Agency's decision-makers and the public before decisions are made and before actions are taken. The Part 6 regulations also include EPA's procedures implementing Executive Order 12114. These procedures ensure that environmental information is available to the Agency's decision-makers and other appropriate Federal agencies and officials for actions subject to Executive Order 12114.

Whether the NEPA documents are based on environmental information developed by the Responsible Official or submitted by the applicant, the NEPA review and resulting documents generally rely on the use of existing data and information, including data and information from other federal agencies, state or local governments, or federally-recognized Indian tribes with jurisdiction by law or special expertise. Whether the NEPA documents are prepared by the Responsible Official or based on environmental information submitted by the applicant, the quality of the information provided by an applicant must be sufficient to enable the Responsible Official to make a decision. This is accomplished under EPA's NEPA implementing procedures through: (1) Early coordination and

cooperation with Federal agencies, State and local governments, and federally-recognized Indian tribes with jurisdiction by law or special expertise (see final rule § 6.202); and (2) the public participation process associated with actions other than those categorically excluded (see final rule § 6.203). When the environmental information is provided by the applicant, the Responsible Official is responsible for the statements, analyses, and conclusions of the EA or EIS and any supporting documents. The information compiled is a one-time submission in narrative text format (see final rule §§ 6.205 and 6.207) rather than computerized compilations of data and information. There are no forms, checklists, or ongoing reporting, recordkeeping or file-maintenance requirements for applicants. EPA maintains file records for each action.

The information submitted by applicants would be consistent with the guidelines of the Office of Management and Budget (OMB) in 5 CFR 1320.6. There are no schedule requirements or requirements on the number of copies of the documentation to be submitted or requirements for ongoing reporting or recordkeeping or to conduct statistical surveys.

Burden Statement: The annual public reporting and recordkeeping burden for this collection of information is estimated to average 123 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements which have subsequently changed; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

For purposes of this ICR, the total annual public reporting and recordkeeping burden for this collection of information is estimated at 38,472 hours and $3,503,245 for contractor hours and costs, direct labor hours and costs, and O&M costs. This burden reflects the annual submission of documentation for an anticipated 312 applicant-proposed project that may be documented with a CE, or an EA/FONSI, or an EIS/ROD. For any specific project, only one of these levels of documentation is generally prepared.

The ICR provides a detailed explanation of the Agency's estimate, which is only briefly summarized here:

Estimated total number of potential respondents: 312.

Frequency of response: On occasion.

Estimated total average number of responses for each respondent: 1.

Estimated total annual burden hours: 38,472 hours.

Estimated total annual costs: $3,503,245.

Are there changes in the estimates from the last approval?

There is a decrease of 9,675 hours in the total estimated respondent burden compared with that identified in the ICR currently approved by OMB. This decrease reflects the increasing number of projects that are documented with a categorical exclusion (CE) rather than an environmental assessment (EA). Under the current ICR, approximately 60% of the annual 300 grant projects were documented with a CE, and 40% with an EA. However, we estimate that out of the 300 annual grant projects, 75% will be documented with a CE and 25% will be documented with an EA. Annually, then, the burden would shift to 10,125 hours and $3,825 for CE documentation, and 19,500 hours and $3,000 for EA documentation. With the current ICR, the total annual burden is 48,147 hours and $8,673.34. Under the renewal ICR, the total annual burden is 38,472 hours and $7,638.34. The renewal ICR reduces the total annual burden by 9,675 hours and $1,035. This reflects EPA's respondents anticipated during the 3-year ICR renewal period and the level of environmental documentation EPA anticipates the respondents will submit.

What is the next step in the process for this ICR?

EPA will consider the comments received and amend the ICR as appropriate. The final ICR package will then be submitted to OMB for review and approval pursuant to 5 CFR 1320.12. At that time, EPA will issue another **Federal Register** notice pursuant to 5 CFR 1320.5(a)(1)(iv) to announce the submission of the ICR to OMB and the opportunity to submit additional comments to OMB. If you have any questions about this ICR or the approval process, please contact the technical person listed under **FOR FURTHER INFORMATION CONTACT.**

Dated: April 30, 2010.

Susan E. Bromm,

Director, Office of Federal Activities.

[FR Doc. 2010–10868 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–8990–2]

Environmental Impacts Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–1399 or *http://www.epa.gov/compliance/nepa/.*

Weekly receipt of Environmental Impact Statements

Filed 04/26/2010 through 04/30/2010

Pursuant to 40 CFR 1506.9.

Notice

In accordance with Section 309(a) of the Clean Air Act, EPA is required to make its comments on EISs issued by other Federal agencies public. Historically, EPA has met this mandate by publishing weekly notices of availability of EPA comments, which includes a brief summary of EPA's comment letters, in the **Federal Register.** Since February 2008, EPA has been including its comment letters on EISs on its Web site at: *http://www.epa.gov/compliance/nepa/eisdata.html.* Including the entire EIS comment letters on the Web site satisfies the Section 309(a) requirement to make EPA's comments on EISs available to the public. Accordingly, after March 31, 2010, EPA will discontinue the publication of this notice of availability of EPA comments in the **Federal Register.**

EIS No. 20100157, Draft EIS, USFS, NV, Mountain City, Ruby Mountains, and Jarbidge Ranger Districts, Combined Travel Management Project, Implementation, Humboldt-Toiyabe National Forest, Elko and White Pine Counties, NV, Comment Period Ends: 06/21/2010, Contact: James Winfrey, 775–355–5308.

EIS No. 20100158, Final EIS, USFS, CA, Sierra National Forest Travel Management Plan, To Prohibit Motorized Vehicle Travel Off Designated National Forest Transportation System (NFIS) Roads, Trails and Area, Fresno, Mariposa, Madera Counties, CA, Wait Period Ends: 06/07/2010, Contact: Judith Tapia, 559–297–0706 Ext. 4938.

EIS No. 20100159, Draft EIS, NOAA, WA, Clark Springs Water Supply Habitat Conservation Plan,

Application for Incidental Take Permits, City of Kent, Maple Valley, King County, WA, Comment Period Ends: 06/28/2010, Contact: Kelly Peterson, 253–856–5547.

EIS No. 20100160, Draft EIS, FHWA, TN, Pellissippi Parkway Extension (TN–162) Project, From TN–33 (Old Knoxville Highway) to US–321/TN–73/Larmar Alexander Parkway, Blount County, TN, Comment Period Ends: 06/21/2010, Contact: Charles J. O'Neill, 615–781–5770.

EIS No. 20100161, Final EIS, BLM, ID, Pocatello Resource Management Plan, To Provide Direction for Managing Public Lands in the Idaho Falls Districts, Pocatello Field Office (PFO), Implementation, Several Counties, ID, Wait Period Ends: 06/07/2010, Contact: Terry Lee Smith, 208–478–6347.

EIS No. 20100162, Draft EIS, USN, ME, Brunswick Naval Air Station, Disposal and Reuse, Implementation, Brunswick, ME, Comment Period Ends: 06/28/2010, Contact: Thomas H. Stephan, 215–897–4916.

EIS No. 20100163, Final EIS, BOP, 00, District of Columbia—III Project, Proposal for Contractor-Owned/Operated Facility to House Felons and Criminal Aliens, Possible Sites: Winton Site, Hertford County, NC and Princess Anne Site, Somerset County, MD, Wait Period Ends: 06/07/2010, Contact: Richard A. Cohen, 202–514–6470.

EIS No. 20100164, Draft EIS, BLM, 00, Southern California Edison's Eldorado-Ivanpah Transmission Line Project, Construction and Operation, Right-of-Way Application, Clark County, NV and San Bernardino County, CA, Comment Period Ends: 06/21/2010, Contact: Tom Hurshman, 970–240–5345.

EIS No. 20100165, Draft EIS, USFS, CA, Two Bit Vegetation Management Project, To Provide a Programmed Flow of Timber Products and to Sustain Diverse, Fire Resilient Ecosystems in Keeping with Historic Conditions, Happy Camp Ranger District, Klamath National Forest, Siskiyou County, CA, Comment Period Ends: 06/21/2010, Contact: John Allen, 530–493–1741.

EIS No. 20100166, Final EIS, USA, NM, Fort Bliss Army Growth and Force Structure Realignment Project, Implementing Land Use Changes and Improving Training Infrastructure to Support the Growth the Army (GTA) Stationing Decision, El Paso Country, TX and Dona Ana and Otero Counties, NM, Wait Period Ends: 06/07/2010, Contact: Jennifer Shore, 703–602–4238.

EIS No. 20100167, Final EIS, FHWA, AR, Conway Western Arterial Loop Construction, from South and West Sides of Conway, Faulkner County, AR, Wait Period Ends: 06/07/2010, Contact: Randal J. Looney, 501–324–6430.

Dated: May 4, 2010.

Robert W. Hargrove,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2010–10861 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9148–6; Docket ID No. EPA–HQ–ORD–2007–0664]

Integrated Risk Information System (IRIS); Announcement of Availability of Literature Searches for IRIS Assessments

AGENCY: Environmental Protection Agency.

ACTION: Notice; Announcement of availability of literature searches for IRIS assessments; request for information.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is announcing the availability of literature searches for four IRIS assessments and requesting scientific information on health effects that may result from exposure to these chemical substances. EPA's IRIS is a human health assessment program that evaluates quantitative and qualitative risk information on effects that may result from exposure to specific chemical substances found in the environment.

DATES: EPA will accept information related to the specific substances included herein as well as any other compounds being assessed by the IRIS Program. Please submit any information in accordance with the instructions provided below.

ADDRESSES: Please submit relevant scientific information identified by docket ID number EPA–HQ–ORD–2007–0664, online at *www.regulations.gov* (EPA's preferred method); by e-mail to *ord.docket@epa.gov;* mailed to Office of Environmental Information (OEI) Docket (Mail Code: 2822T), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460–0001; or by hand delivery or courier to EPA Docket Center, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC, between 8:30 a.m. and 4:30 p.m. Monday through Friday, excluding legal holidays. Information on a disk or CD–ROM should be formatted in Word or as an ASCII file, avoiding the use of special characters and any form of encryption, and may be mailed to the mailing address above.

FOR FURTHER INFORMATION CONTACT: For information on the IRIS program, contact Dr. Abdel-Razak Kadry, IRIS Program Director, National Center for Environmental Assessment, (mail code: 8601D), Office of Research and Development, U.S. Environmental Protection Agency, Washington, DC 20460; telephone: (703) 347–8545, facsimile: (703) 347–8689; or e-mail: *kadry.abdel@epa.gov.*

For general questions about access to IRIS, or the content of IRIS, please call the IRIS Hotline at (202) 566–1676 or send electronic mail inquiries to *hotline.iris@epa.gov.*

SUPPLEMENTARY INFORMATION:

Background

EPA's IRIS is a human health assessment program that evaluates quantitative and qualitative risk information on effects that may result from exposure to specific chemical substances found in the environment. Through the IRIS Program, EPA provides the highest quality science-based human health assessments to support the Agency's regulatory activities. The IRIS database contains information for more than 540 chemical substances that can be used to support the first two steps (hazard identification and dose-response evaluation) of the risk assessment process. When supported by available data, IRIS provides oral reference doses (RfDs) and inhalation reference concentrations (RfCs) for chronic noncancer health effects and cancer assessments. Combined with specific exposure information, government and private entities use IRIS to help characterize public health risks of chemical substances in a site-specific situation and thereby support risk management decisions designed to protect public health.

This data call-in is a new step in the IRIS process. As literature searches are completed, the results will be posted on the IRIS Web site (*http://www.epa.gov/iris*). The public is invited to review the literature search results and submit additional information to EPA.

Request for Public Involvement in IRIS Assessments

EPA is soliciting public involvement in assessments on the IRIS agenda, including new assessments starting in 2010. While EPA conducts a thorough literature search for each chemical

substance, there may be unpublished studies or other primary technical sources that are not available through the open literature. EPA would appreciate receiving scientific information from the public during the information gathering stage for the assessments listed in this notice or any other assessments on the IRIS agenda. Interested persons may provide scientific analyses, studies, and other pertinent scientific information. While EPA is primarily soliciting information on new assessments, the public may submit information on any chemical substance at any time.

This notice provides (1) a list of new IRIS assessments for which literature searches have recently become available; and (2) instructions to the public for submitting scientific information to EPA pertinent to the development of assessments.

EPA is announcing the availability of additional literature searches on the IRIS web site (*http://www.epa.gov/iris*). The public is invited to review the literature search results and submit additional information to EPA. Literature searches are now available for diisobutyl phthalate (DIBP) (84–69–5), diisononyl phthalate (DINP) (28553–12–0, 68515–48–0, 71549–78–5 and 14103–61–8), dipentyl phthalate (DPP) (131–18–0), and polychlorinated biphenyls (noncancer) (various) at *http://www.epa.gov/iris* under "IRIS Agenda and Literature Searches." Additional literature searches will be posted as they are completed. Availability will be announced in the **Federal Register**. Instructions on how to submit information are provided below under General Information.

General Information

Submit your comments, identified by Docket ID No. EPA–HQ–ORD–2007–0664 by one of the following methods:

- *http://www.regulations.gov:* Follow the on-line instructions for submitting comments.
- *E-mail: ORD.Docket@epa.gov.*
- *Fax:* 202–566–1753.
- *Mail:* Office of Environmental Information (OEI) Docket, (Mail Code: 2822T), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460. The phone number is 202–566–1752.
- *Hand Delivery:* The OEI Docket is located in the EPA Headquarters Docket Center, EPA West Building, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The EPA Docket Center's Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is 202–566–1744. Such deliveries are only accepted during the docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information. If you provide information by mail or hand delivery, please submit one unbound original with pages numbered consecutively, and three copies of the comments. For attachments, provide an index, number pages consecutively with the main text, and submit an unbound original and three copies.

Instructions: Direct your comments to Docket ID No. EPA–HQ–ORD–2007–0664. It is EPA's policy to include all comments it receives in the public docket without change and to make the comments available online at *http://www.regulations.gov*, including any personal information provided, unless a comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *http://www.regulations.gov* or e-mail. The *http://www.regulations.gov* Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *http://www.regulations.gov*, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at *http://www.epa.gov/epahome/dockets.htm.*

Docket: All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at the OEI Docket in the EPA Headquarters Docket Center.

Dated: April 30, 2010.

Rebecca Clark,

Director, National Center for Environmental Assessment.

[FR Doc. 2010–10855 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

National Advisory Council for Environmental Policy and Technology

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of meeting.

SUMMARY: Under the Federal Advisory Committee Act, Public Law 92463, EPA gives notice of a meeting of the National Advisory Council for Environmental Policy and Technology (NACEPT). NACEPT provides advice to the EPA Administrator on a broad range of environmental policy, technology, and management issues. NACEPT is a committee of individuals who represent diverse interests from academia, industry, non-governmental organizations, and local, state, and tribal governments. The purpose of this meeting is to discuss the Council's FY 20l0–FY 2012 agenda, which includes vulnerable populations and workforce issues. A copy of the agenda for the meeting will be posted at *http://www.epa.gov//ocem/nacept/cal-nacept.htm.*

DATES: NACEPT will hold a two-day meeting on Tuesday, May 25, 2010, from 8:30 a.m. to 6 p.m. and Wednesday, May 26, 2010, from 8:30 a.m. to 2 p.m.

ADDRESSES: The meeting will be held at the Sheraton Crystal City Hotel, 1800 Jefferson Davis Highway, Arlington, VA 22202. The meeting is open to the public, with limited seating on a first-come, first-served basis.

FOR FURTHER INFORMATION CONTACT: Sonia Altieri, designated Federal officer, *altieri.sonia@epa.gov,* (202) 564–0243, U.S. EPA, Office of Cooperative Environmental Management (1601M), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

SUPPLEMENTARY INFORMATION: Requests to make oral comments or to provide written comments to the Council should be sent to Sonia Altieri, designated Federal officer, at the contact information above. All requests must be submitted no later than May 17, 2010.

Meeting Access: For information on access or services for individuals with disabilities, please contact Sonia Altieri at 202–564–0243 or *altieri.sonia@epa.gov.* To request accommodation of a disability, please contact Sonia Altieri, preferably at least 10 days prior to the meeting, to give EPA as much time as possible to process your request.

Dated: April 29, 2010.

Sonia Altieri,

Designated Federal Officer.

[FR Doc. 2010–10538 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–M

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9145–7]

Notice of a Project Waiver of Section 1605 (Buy American Requirement) of the American Recovery and Reinvestment Act of 2009 (ARRA) to the City of Coldwater, MI (Coldwater)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA is hereby granting a project waiver of the Buy American requirements of ARRA section 1605 under the authority of section 1605(b)(2) [manufactured goods are not produced in the United States of a satisfactory quality] to Coldwater, Michigan for the purchase of high-speed, high-efficiency magnetic bearing turbo-compressors that will be used in the city's sludge treatment process. This is a project-specific waiver and it only applies to the use of the specified product for the ARRA funded project being proposed. Any other ARRA project that may wish to use the same product must apply for a separate waiver based on project-specific circumstances. These turbo-compressors, which are supplied by ABS USA of Meriden, Connecticut, are manufactured in Sweden, and meet Coldwater's performance specifications and requirements. The Acting Regional Administrator is making this determination based on the review and recommendations of EPA Region 5's Water Division. Coldwater has provided sufficient documentation to support its request. The Assistant Administrator of the Office of Administration and Resources Management has concurred on this decision to make an exception to Section 1605 of ARRA. This action permits the purchase of high-speed, high-efficiency magnetic bearing turbo-compressors for Coldwater's activated sludge project that may otherwise be prohibited under Section 1605(a) of the ARRA.

DATES: *Effective Date:* March 26, 2010.

FOR FURTHER INFORMATION CONTACT: Andrew Lausted, SRF Program Manager (312) 886–0189, or Puja Lakhani, Office of Regional Counsel, (312) 353–3190, U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL 60604.

SUPPLEMENTARY INFORMATION: In accordance with ARRA Section 1605(c) and pursuant to Section 1605(b)(2) of Public Law 111–5, Buy American requirements, EPA hereby provides notice that it is granting a project waiver to Coldwater, Michigan for the acquisition of high-speed, high-efficiency magnetic bearing turbo-compressors that are manufactured in Sweden.

Section 1605 of the ARRA requires that none of the appropriated funds may be used for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States, or unless a waiver is provided to the recipient by the head of the appropriate agency, here EPA. A waiver may be provided if EPA determines that (1) Applying these requirements would be inconsistent with the public interest; (2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron, steel, and the relevant manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

The ARRA-funded project will provide improved aeration for Coldwater's activated sludge treatment process, allowing the Wastewater Treatment Plant (WWTP) to meet the stringent ammonia-nitrogen effluent discharge limits required for this facility placed into effect in May 2007. Following a study of the cause for these ammonia-nitrogen effluent discharge excursions, it was determined the WWTP's current organic treatment process was not capable of handling the maximum day and peak ammonia-nitrogen loading occurrences experienced by the facility. The existing multistage centrifugal aeration blowers cannot be turned down sufficiently to adequately meet the low and average aeration requirements on the WWTP. These blowers also have insufficient capacity to meet the peak aeration requirements alone, and need supplemental aeration blowers to meet these demands. Relative to conventional technologies and equipment, the high-speed, high-efficiency turbocompressors offer more turndown potential and the ability for the WWTP to meet the low, average, and peak aeration requirements in combination with the existing aeration blowers. The selected equipment can operate at 38% of its rated capacity, providing exceptional turndown. Coldwater selected the magnetic bearing technology because of its ability to avoid overheating and its track record of providing long-standing reliable service—key advantages over the competing airfoil bearing technology. Further, as Coldwater initiated its evaluation of the equipment for selection and design phases well before the enactment of ARRA, the decision to do was clearly not an attempt to avoid application of the Buy American provisions of ARRA. Coldwater's submissions clearly articulated functional reasons that justified their technical specifications and requirements.

The April 28, 2009 EPA HQ Memorandum, "Implementation of Buy American provisions of Public Law 111–5, the 'American Recovery and Reinvestment Act of 2009'," defines *reasonably available quantity* as "the quantity of iron, steel, or relevant manufactured good is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design."

The applicant met the requirements specified for the availability inquiry as appropriate to the circumstances by conducting an extensive investigation into all possible sources for high-speed, high-efficiency turbo-compressors. Based on the investigation, five companies manufacture these machines, but only two (ABS and one other company) used magnetic bearings. Moreover, both of the companies that use magnetic bearings manufacture their machines overseas. Therefore, Coldwater believed that there was no domestic product of satisfactory quality available.

EPA's national contractor prepared a technical assessment report dated December 24, 2009, based on the submitted waiver request. The report determined that the waiver request submittal was complete, that adequate technical information was provided, and that there were no significant weaknesses in the justification provided. Therefore, based on the information provided to EPA and to the best of our knowledge at this time, the high-speed, high-efficiency magnetic bearing turbo-compressors necessary for this project are not manufactured in the

United States, and no other U.S. manufactured product can meet Coldwater's project performance specifications and requirements.

The purpose of the ARRA is to stimulate economic recovery in part by funding current infrastructure construction, not to delay projects that are "shovel ready" by requiring communities such as Coldwater to revise their standards and specifications and to start the bidding process again. The imposition of ARRA Buy American requirements on such projects otherwise eligible for ARRA State Revolving Fund assistance would result in unreasonable delay and thus displace the "shovel ready" status for this project. To further delay project implementation is in direct conflict with a fundamental economic purpose of the ARRA, which is to create or retain jobs.

The State and Tribal Programs Branch has reviewed this waiver request and has determined that the supporting documentation provided by Coldwater is sufficient to meet the criteria listed under Section 1605(b) of the ARRA and in the April 28, 2009, "Implementation of Buy American provisions of Public Law 111–5, the 'American Recovery and Reinvestment Act of 2009' Memorandum": Iron, steel, and the manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality. The basis for this project waiver is the authorization provided in section 1605(b)(2) of the ARRA. Due to the lack of production of this item in the United States in sufficient and reasonably available quantities and of a satisfactory quality in order to meet Coldwater's project performance specifications and requirements, a waiver from the Buy American requirement is justified.

The March 31, 2009, Delegation of Authority Memorandum provided Regional Administrators with the authority to issue exceptions to Section 1605 of the ARRA within the geographic boundaries of their respective regions and with respect to requests by individual grant recipients. Having established both a proper basis to specify the particular good required for this project, and that this manufactured good was not available from a producer in the United States, Coldwater is hereby granted a waiver from the Buy American requirements of Section 1605(a) of Public Law 111–5 for the purchase of high-speed, high efficiency magnetic bearing turbo-compressors using ARRA funds as specified in the community's request of December 21, 2009. This supplementary information constitutes the detailed written justification required by Section 1605(c) for waivers "based on a finding under subsection (b)."

Authority: Pub. L. 111–5, section 1605.

Dated: March 26, 2010.

Walter W. Kovalick,

Acting Regional Administrator, Region 5.

[FR Doc. 2010–10916 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9145–5]

Notice of a Project Waiver of Section 1605 (Buy American Requirement) of the American Recovery and Reinvestment Act of 2009 (ARRA) to the City of Faribault, MN (Faribault)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA is hereby granting a project waiver of the Buy American requirements of ARRA Section 1605 under the authority of Section 1605(b)(2) [manufactured goods are not produced in the United States of a satisfactory quality] to Faribault for the purchase of high-speed, high-efficiency magnetic bearing turbo-compressors to be used in the city's sludge treatment process. This is a project-specific waiver and only applies to the use of the specified product for the ARRA funded project being proposed. Any other ARRA project that may wish to use the same product must apply for a separate waiver based on project-specific circumstances. These turbo-compressors, which are supplied by ABS USA of Meriden, Connecticut, are manufactured in Finland, and meet Faribault's performance specifications and requirements. The Acting Regional Administrator is making this determination based on the review and recommendations of EPA Region 5's Water Division. Faribault has provided sufficient documentation to support its request. The Assistant Administrator of the Office of Administration and Resources Management has concurred on this decision to make an exception to Section 1605 of ARRA. This action permits the purchase of high-speed, high-efficiency magnetic bearing turbo-compressors for Faribault's activated sludge project that may otherwise be prohibited under Section 1605(a) of the ARRA.

DATES: *Effective Date:* January 13, 2010.

FOR FURTHER INFORMATION CONTACT: Andrew Lausted, SRF Program Manager (312) 886–0189, or Puja Lakhani, Regional Counsel, (312) 353–3190, U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL 60604.

SUPPLEMENTARY INFORMATION: In accordance with ARRA Section 1605(c) and pursuant to Section 1605(b)(2) of Public Law 111–5, Buy American requirements, EPA hereby provides notice that it is granting a project waiver to Faribault for the acquisition of high-speed, high-efficiency magnetic bearing turbo-compressors that are manufactured in Finland.

Section 1605 of the ARRA requires that none of the appropriated funds may be used for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States, or unless a waiver is provided to the recipient by the head of the appropriate agency, here EPA. A waiver may be provided if EPA determines that (1) applying these requirements would be inconsistent with the public interest; (2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron, steel, and the relevant manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

These manufactured goods will provide aeration for Faribault's activated sludge treatment process. The city selected the magnetic bearing technology because of its ability to avoid overheating and its track record of providing long-standing reliable service—key advantages over the competing airfoil bearing technology. Also, the project specifications required a 322 horsepower capacity turbo-compressor. Faribault's submissions clearly articulated functional reasons that justified their technical specifications and requirements.

The April 28, 2009 EPA HQ Memorandum, "Implementation of Buy American Provisions of Public Law 111–5, the 'American Recovery and Reinvestment Act of 2009,'" defines *reasonably available quantity* as "the quantity of iron, steel, or relevant manufactured good is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design."

The applicant met the procedures specified for the availability inquiry as appropriate to the circumstances by conducting an extensive investigation into all possible sources for high-speed,

high-efficiency turbo-compressors. Five companies were found to manufacture these machines, but only two (ABS and one other company) used magnetic bearings. This other company was presented in Faribault's submission as a U.S. firm that had bid on the project, but had never manufactured a turbo-compressor the size of the 322-hp models required for the project. Because of this, Faribault believed that there was no domestic product of satisfactory quality available.

EPA's national contractor prepared a technical assessment report dated August 14, 2009, based on the submitted waiver request. The report determined that the waiver request submittal was complete, that adequate technical information was provided, and that there were no significant weaknesses in the justification provided. In the report's examination of this submittal, it originally appeared that the U.S. firm might be able to meet the bid specifications for the turbocompressor, *i.e.,* could potentially be "available." This report did indicate some uncertainty as to the characteristics and quality of the turbocompressor that could be made available by the U.S. firm. After substantial further inquiry, EPA determined that while a turbo-compressor of characteristics and quality responsive to Faribault's specifications might be available from this U.S. firm, such a turbo-compressor was not in fact made in the U.S. by this firm, but was manufactured abroad. This conclusion confirmed the waiver applicant's claim that there are no comparable domestic products that can meet the specific power and performance needs of the project Therefore, based on the information provided to EPA and to the best of our knowledge at this time, the high-speed, high-efficiency magnetic bearing turbo-compressors necessary for this project are not manufactured in the United States, and no other U.S. manufactured product can meet Faribault's project performance specifications and requirements.

The purpose of the ARRA is to stimulate economic recovery in part by funding current infrastructure construction, not to delay projects that are "shovel ready" by requiring communities such as Faribault to revise their standards and specifications and to start the bidding process again. The imposition of ARRA Buy American requirements on such projects otherwise eligible for ARRA State Revolving Fund assistance would result in unreasonable delay and thus displace the "shovel ready" status for this project. To further delay project implementation is in direct conflict with a fundamental economic purpose of the ARRA, which is to create or retain jobs.

The State and Tribal Programs Branch has reviewed this waiver request and has determined that the supporting documentation provided by Faribault is sufficient to meet the criteria listed under Section 1605(b) of the ARRA and in the April 28, 2009, "Implementation of Buy American provisions of Public Law 111–5, the 'American Recovery and Reinvestment Act of 2009' Memorandum": Iron, steel, and the manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality. The basis for this project waiver is the authorization provided in Section 1605(b)(2) of the ARRA. Due to the lack of production of this product in the United States in sufficient and reasonably available quantities and of a satisfactory quality in order to meet Faribault's project performance specifications and requirements, a waiver from the Buy American requirement is justified.

The March 31, 2009, Delegation of Authority Memorandum provided Regional Administrators with the authority to issue exceptions to Section 1605 of the ARRA within the geographic boundaries of their respective regions and with respect to requests by individual grant recipients. Having established both a proper basis to specify the particular good required for this project, and that this manufactured good was not available from a producer in the United States, Faribault is hereby granted a waiver from the Buy American requirements of Section 1605(a) of Public Law 111–5 for the purchase of high-speed, high efficiency magnetic bearing turbo-compressors using ARRA funds as specified in the community's request of August 3, 2009. This supplementary information constitutes the detailed written justification required by Section 1605(c) for waivers "based on a finding under subsection (b)."

Authority: Pub. L. 111–5, section 1605.

Dated: January 13, 2010.

Walter W. Kovalick,

Acting Regional Administrator, Region 3.

[FR Doc. 2010–10908 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9145–6]

Notice of a Project Waiver of Section 1605 (Buy American Requirement) of the American Recovery and Reinvestment Act of 2009 (ARRA) to the City of Auburn, IN (Auburn)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA is hereby granting a project waiver of the Buy American requirements of ARRA Section 1605 under the authority of Section 1605(b)(2) [manufactured goods are not produced in the United States of a satisfactory quality] to Auburn, Indiana, for the purchase of three high-speed, high-efficiency magnetic bearing turbo-compressors that will be used in the city's sludge treatment process. This is a project-specific waiver and it only applies to the use of the specified product for the ARRA funded project being proposed. Any other ARRA project that may wish to use the same product must apply for a separate waiver based on project-specific circumstances. These turbo-compressors, which are supplied by ABS USA of Meriden, Connecticut, are manufactured in Sweden, and meet Auburn's performance specifications and requirements. The Acting Regional Administrator is making this determination based on the review and recommendations of EPA Region 5's Water Division. Auburn has provided sufficient documentation to support its request. The Assistant Administrator of the Office of Administration and Resources Management has concurred on this decision to make an exception to Section 1605 of ARRA. This action permits the purchase of high-speed, high-efficiency magnetic bearing turbo-compressors for Auburn's activated sludge project that may otherwise be prohibited under Section 1605(a) of the ARRA.

DATES: *Effective Date:* March 25, 2010.

FOR FURTHER INFORMATION CONTACT: Andrew Lausted, SRF Program Manager (312) 886–0189, or Puja Lakhani, Office of Regional Counsel, (312) 353–3190, U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL 60604.

SUPPLEMENTARY INFORMATION: In accordance with ARRA Section 1605(c) and pursuant to Section 1605(b)(2) of Public Law 111–5, Buy American requirements, EPA hereby provides notice that it is granting a project waiver to Auburn, Indiana, for the acquisition

of high-speed, high-efficiency magnetic bearing turbo-compressors that are manufactured in Sweden.

Section 1605 of the ARRA requires that none of the appropriated funds may be used for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States, or unless a waiver is provided to the recipient by the head of the appropriate agency, here EPA. A waiver may be provided if EPA determines that (1) applying these requirements would be inconsistent with the public interest; (2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron, steel, and the relevant manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

These manufactured goods will provide aeration for Auburn's activated sludge treatment process. The city selected the magnetic bearing technology because of its ability to avoid overheating and its track record of providing long-standing reliable service—key advantages over the competing airfoil bearing technology. Auburn's submissions clearly articulated functional reasons that justified their technical specifications and requirements.

The April 28, 2009 EPA HQ Memorandum, "Implementation of Buy American provisions of Public Law 111–5, the 'American Recovery and Reinvestment Act of 2009'," defines *reasonably available quantity* as "the quantity of iron, steel, or relevant manufactured good is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design."

The applicant met the requirements specified for the availability inquiry as appropriate to the circumstances by conducting an extensive investigation into all possible sources for high-speed, high-efficiency turbo-compressors. Based on the investigation, five companies were found to manufacture these machines, but only two (ABS and one other company) used magnetic bearings. Moreover, both of the companies that use magnetic bearings manufacture their machines overseas. Auburn believes that since ABS has multiple municipal wastewater treatment plant installations in the Midwest and that its competitor has none, that the ABS turbo-compressor technology has been proven and would perform reliably in this specific application. Therefore, Auburn contends that there is no domestic product of satisfactory quality available.

EPA's national contractor prepared a technical assessment report dated January 27, 2010, based on the submitted waiver request. The report determined that the waiver request submittal was complete, that adequate technical information was provided, and that there were no significant weaknesses in the justification provided. Therefore, based on the information provided to EPA and to the best of our knowledge at this time, the high-speed, high-efficiency magnetic bearing turbo-compressors necessary for this project are not manufactured in the United States, and no other U.S. manufactured product can meet Auburn's project performance specifications and requirements.

The purpose of the ARRA is to stimulate economic recovery in part by funding current infrastructure construction, not to delay projects that are "shovel ready" by requiring communities such as Auburn to revise their standards and specifications and to start the bidding process again. The imposition of ARRA Buy American requirements on such projects otherwise eligible for ARRA State Revolving Fund assistance would result in unreasonable delay and thus displace the "shovel ready" status for this project. To further delay project implementation is in direct conflict with a fundamental economic purpose of the ARRA, which is to create or retain jobs.

The State and Tribal Programs Branch has reviewed this waiver request and has determined that the supporting documentation provided by Auburn is sufficient to meet the criteria listed under Section 1605(b) of the ARRA and in the April 28, 2009, "Implementation of Buy American provisions of Public Law 111–5, the 'American Recovery and Reinvestment Act of 2009' Memorandum": Iron, steel, and the manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality. The basis for this project waiver is the authorization provided in Section 1605(b)(2) of the ARRA. Due to the lack of production of this item in the United States in sufficient and reasonably available quantities and of a satisfactory quality in order to meet Auburn's project performance specifications and requirements, a waiver from the Buy American requirement is justified.

The March 31, 2009, Delegation of Authority Memorandum provided Regional Administrators with the authority to issue exceptions to Section 1605 of the ARRA within the geographic boundaries of their respective regions and with respect to requests by individual grant recipients. Having established both a proper basis to specify the particular good required for this project, and that this manufactured good was not available from a producer in the United States, Auburn is hereby granted a waiver from the Buy American requirements of Section 1605(a) of Public Law 111–5 for the purchase of high-speed, high efficiency magnetic bearing turbo-compressors using ARRA funds as specified in the community's request of December 21, 2009. This supplementary information constitutes the detailed written justification required by Section 1605(c) for waivers "based on a finding under subsection (b)."

Authority: Pub. L. 111–5, section 1605.

Dated: March 25, 2010.

Walter W. Kovalick,

Acting Regional Administrator, Region 5.

[FR Doc. 2010–10918 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9145–4]

Notice of a Project Waiver of Section 1605 (Buy American Requirement) of the American Recovery and Reinvestment Act of 2009 (ARRA) to Warren County, OH (Warren County)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA is hereby granting a project waiver of the Buy American requirements of ARRA Section 1605 under the authority of Section 1605(b)(2) [manufactured goods are not produced in the United States of a satisfactory quality] to Warren County for the purchase of a Trojan UV 4000 Plus medium-pressure, high-intensity ultraviolet disinfection system to treat effluent from the Lower Little Miami River Wastewater Treatment Plant. This is a project-specific waiver and only applies to the use of the specified product for the ARRA funded project being proposed. Any other ARRA project that may wish to use the same product must apply for a separate waiver based on project-specific circumstances. This disinfection system, which is supplied by Trojan Technologies of London, Ontario, is manufactured in Canada and meets

Warren County's performance specifications and requirements. The Acting Regional Administrator is making this determination based on the review and recommendations of EPA Region 5's Water Division. Warren County has provided sufficient documentation to support its request. The Assistant Administrator of the Office of Administration and Resources Management has concurred on this decision to make an exception to Section 1605 of ARRA. This action permits the purchase of a Trojan UV 4000 Plus medium-pressure, high-intensity ultraviolet disinfection system for the Lower Little Miami River Wastewater Treatment Plant that may otherwise be prohibited under Section 1605(a) of the ARRA.

DATES: *Effective Date:* January 26, 2010.

FOR FURTHER INFORMATION CONTACT: Andrew Lausted, SRF Program Manager (312) 886–0189, or Puja Lakhani, Office of Regional Counsel, (312) 353–3190, U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL 60604.

SUPPLEMENTARY INFORMATION: In accordance with ARRA section 1605(c) and pursuant to section 1605(b)(2) of Public Law 111–5, the Buy American requirements, EPA hereby provides notice that it is granting a project waiver to Warren County for the acquisition of a Trojan 4000 Plus medium-pressure, high-intensity ultraviolet disinfection system that is manufactured in Canada.

Section 1605 of the ARRA requires that none of the appropriated funds may be used for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States, or unless a waiver is provided to the recipient by the head of the appropriate agency, here EPA. A waiver may be provided if EPA determines that (1) Applying these requirements would be inconsistent with the public interest; (2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron, steel, and the relevant manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

These manufactured goods will provide wastewater effluent disinfection for Warren County's Lower Little Miami River Wastewater Treatment Plant. Early in the design process, the County decided to use a UV system that utilizes a medium pressure UV lamp. Warren County's plant is relatively large and a medium pressure UV system uses many fewer UV lamps than a low pressure system, and consequently has reduced operation and maintenance costs and requires a much smaller building to house the UV system.

While there are two companies that manufacture medium pressure UV systems that are marketed in the United States for use in wastewater disinfection, each manufacturer implements the technology differently which generally requires a completely different facility layout. Based on cost and technical concerns, the County decided in 2008—prior to the enactment of ARRA—to finalize plant design using the Trojan 4000 Plus medium-pressure, high intensity ultraviolet disinfection system with an open-channel configuration that will meet the capacity requirements of the project.

The April 28, 2009 EPA HQ Memorandum, "Implementation of Buy American provisions of Public Law 111–5, the 'American Recovery and Reinvestment Act of 2009'," defines *reasonably available quantity* as "the quantity of iron, steel, or relevant manufactured good is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design."

Here, the applicant met the requirements specified for the availability inquiry by conducting an extensive investigation into all possible sources for medium-pressure, high intensity ultraviolet disinfection systems that can meet the capacity requirements of the project. The one potential alternative to the Trojan 4000 Plus system, an American-manufactured, medium-pressure ultraviolet disinfection system for wastewater, was a closed-vessel, in-pipe system rather than an open-channel system. Use of this alternative would require a substantial and costly redesign of the disinfection facility from the project specifications as finalized in 2008. Based on the information provided to EPA and to the best of our knowledge at this time, because the Trojan 4000 Plus is the only system that can meet the design specification for an open-channel medium-pressure high-intensity UV disinfection system, EPA believes that there is no domestic product of satisfactory quality available to meet this justified specification.

The purpose of the ARRA is to stimulate economic recovery in part by funding current infrastructure construction, and not to delay projects that are "shovel ready" by requiring communities such as Warren County to revise substantially their project design and specifications, start the bidding process again, and potentially choose a more costly, less efficient project. In this situation, the imposition of ARRA Buy American requirements on a project otherwise eligible for ARRA State Revolving Fund assistance would result in unreasonable delay and thus displace the "shovel ready" status for this project. To further delay project implementation is in direct conflict with a fundamental economic purpose of the ARRA, which is to create or retain jobs.

Based on the submitted waiver request, EPA's national contractor prepared a technical assessment report dated November 3, 2009. The report determined that the waiver request submittal was complete, that adequate technical information was provided, and that there were no significant weaknesses in the justification that was provided. The report confirmed the waiver applicant's claim that there are no comparable domestic products that can meet the design specifications for the project. Therefore, based on the information provided to EPA and to the best of our knowledge at this time, the medium-pressure, high-intensity open-channel configuration ultraviolet disinfection system necessary for this project is not manufactured in the United States, and no other U.S. manufactured product can meet Warren County's project performance specifications and requirements.

The State and Tribal Programs Branch has reviewed this waiver request and has determined that the supporting documentation provided by Warren County is sufficient to meet the criteria listed under Section 1605(b) of the ARRA and in the April 28, 2009, "Implementation of Buy American provisions of Public Law 111–5, the 'American Recovery and Reinvestment Act of 2009' Memorandum": Iron, steel, and the manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality. The basis for this project waiver is the authorization provided in Section 1605(b)(2) of the ARRA. Due to the lack of production of this item in the United States in sufficient and reasonably available quantities and of a satisfactory quality to meet Warren County's project performance specifications and requirements, a waiver from the Buy American requirement is justified.

The March 31, 2009, Delegation of Authority Memorandum provided Regional Administrators with the authority to issue exceptions to Section 1605 of the ARRA within the geographic boundaries of their respective regions and with respect to requests by

individual grant recipients. Having established both a proper basis to specify the particular good required for this project, and that this manufactured good was not available from a producer in the United States, Warren County is hereby granted a waiver from the Buy American requirements of Section 1605(a) of Public Law 111–5 for the purchase of a Trojan 4000 Plus medium-pressure, high-intensity ultraviolet disinfection system using ARRA funds as specified in the community's request of October 29, 2009. This

SUPPLEMENTARY INFORMATION constitutes the detailed written justification required by Section 1605(c) for waivers "based on a finding under subsection (b)."

Authority: Pub. L. 111–5, section 1605.

Dated: January 26, 2010.

Walter W. Kovalick,

Acting Regional Administrator, Region 5.

[FR Doc. 2010–10911 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9146–9]

Notice of a Project Waiver of Section 1605 (Buy American Requirement) of the American Recovery and Reinvestment Act of 2009 (ARRA) to the Albuquerque Bernalillo County Water Utility Authority, New Mexico

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The Regional Administrator of EPA Region 6 is hereby granting a project waiver of the Buy American requirements of ARRA Section 1605 under the authority of Section 1605(b)(2) [manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality] to the Albuquerque Bernalillo County Water Utility Authority ("ABCWUA") for the purchase of three hundred acoustic leak detection sensors/loggers ("loggers") and one fully programmable radio transceiver. The loggers and radio transceiver under consideration are manufactured by Gutermann, Inc., and no United States manufacturer produces an alternative that meets the ABCWUA's technical specifications. This is a project specific waiver and only applies to the use of the specified product for the ARRA funded project being proposed. Any other ARRA project that may wish to use the same product must apply for a separate waiver based on the specific project circumstances. The Regional Administrator is making this determination based on the review and recommendations of the EPA Region 6, Water Quality Protection Division. The ABCWUA has provided sufficient documentation to support its request.

The Assistant Administrator of the EPA's Office of Administration and Resources Management has concurred on this decision to make an exception to Section 1605 of ARRA. This action permits the purchase of three hundred loggers and one radio transceiver containing goods not manufactured in America, for the proposed project being implemented by the ABCWUA.

DATES: *Effective Date:* April 28, 2010.

FOR FURTHER INFORMATION CONTACT: Nasim Jahan, Buy American Coordinator, (214) 665–7522, SRF & Projects Section, Water Quality Protection Division, U.S. EPA Region 6, 1445 Ross Avenue, Dallas, Texas 75202–2733.

SUPPLEMENTARY INFORMATION: In accordance with ARRA Section 1605(c) and 1605(b)(2), EPA hereby provides notice that it is granting a project waiver of the requirements of Section 1605(a) of Public Law 111–5, Buy American requirements to the ABCWUA for the acquisition of three hundred loggers and one radio transceiver (Model: Gutermann Zonescan 820). The ABCWUA has been unable to find an American made logger manufacturer to meet its specific requirements of cross correlation functionality for pinpointing leaks throughout its water distribution system.

Section 1605 of the ARRA requires that none of the appropriated funds may be used for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States unless a waiver is provided to the recipient by EPA. A waiver may be provided if EPA determines that (1) applying these requirements would be inconsistent with public interest; (2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron, steel, and the relevant manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

The ABCWUA is implementing a comprehensive asset management program, and leak detection is critical to better management of its water system assets. The ABCWUA desires to quickly and efficiently locate leaks in its wastewater distribution system and seeks ARRA funding to purchase loggers that can easily be deployed on the water distribution system, that are non-invasive, and are designed to detect noise generated from vibrations of water escaping from pipes. Efficient leak detection provides timely data on the types of leak and potential cause. It helps the utility authority in identifying high priority assets needing rehabilitation/replacement, which can effectively reduce the chances of catastrophic failure.

Accordingly, the ABCWUA on January 22, 2010 concluded an ARRA assistance agreement with the State of New Mexico to a fund a project to procure and deploy leak detection equipment for its distribution system. The bid documents for the project include the specifications for loggers and one radio transceiver having cross correlation functionality for exactly pinpointing leaks throughout the water distribution system. The ABCWUA had received four bids for this project on January 20, 2010, and upon identifying Gutermann as the only bidder to provide a data logger that included this cross-correlation functionality, submitted a timely waiver request to EPA on February 5, 2010.

The ABCWUA is requesting a waiver for the use of three hundred loggers and one programmable radio transceiver (Model: Gutermann Zonescan 820) on the basis that there are no domestic manufacturers of the loggers that will meet the ABCWUA product specifications.

The ABCWUA authority received four bids for the acoustic leak detection equipment project. Among the four bidders, the bid submitted by Gutermann was the only leak detection logger that met ABCWUA's specifications. Specifically, the logger was required to have the feature of cross correlation functionality for pinpointing leaks. Gutermann's Zonescan 820 loggers automatically perform leak noise correlation for pinpointing the leak location. In addition, automatic multi-correlation provides precise positions between all loggers in the same project area. As this feature maximizes the efficiency and effectiveness of the crucial functions of enabling the ABCWUA to conserve and prevent contamination of scarce water supplies that have already been treated to comply with National Primary Drinking Water Regulations, EPA finds that the ABCWUA's specification of this feature is justified.

Although there are loggers that are manufactured in the United States, the

research conducted by Cadmus, the EPA Office of Water's national contractor, was unable to identify any domestically available loggers which meet the specifications and quality described in the project plans and designs. The contractor contacted four companies that manufacture loggers in the U.S. but none of these companies could provide loggers that offer integrated cross correlation functionality between loggers.

Additional research conducted by EPA Region 6 appeared to confirm that there are no domestic logger manufacturers that would meet the ABCWUA's technical specifications.

EPA's national contractor prepared a technical assessment report dated February 10, 2010 based on the waiver request submittal. The report determined that the waiver request submittal was complete, that adequate technical information was provided, and that there were no significant weaknesses in the justification provided. The report confirmed the waiver applicant's claim that there are no American-made loggers available for use in the water distribution system. Therefore, EPA Region 6 concludes that the loggers meet the "specifications in project plans and design."

The April 28, 2009 EPA HQ Memorandum, Implementation of Buy American provisions of P.L. 111–5, the "American Recovery and Reinvestment Act of 2009", defines reasonably available quantity as "the quantity of iron, steel, or relevant manufactured good is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design." The ABCWUA has incorporated specific technical design requirements for installation of loggers in its water distribution system. Therefore, it meets the requirements of the "satisfactory quality" criterion for requesting a waiver from the Buy American provisions of Public Law 111–5.

The purpose of the ARRA is to stimulate economic recovery in part by funding current infrastructure construction, not to delay projects that are "shovel ready" by requiring utilities, such as the ABCWUA, to revise their standards and specifications, institute a new bidding process, and potentially choose a more costly, less efficient project. The imposition of ARRA Buy American requirements on such projects otherwise eligible for State Revolving Fund assistance would result in unreasonable delay and thus displace the "shovel ready" status for this project. To further delay construction is in direct conflict with a fundamental economic purpose of the ARRA, which is to create or retain jobs.

The Region 6 Water Quality Protection Division has reviewed this waiver request, and to the best of my knowledge at the time of review, has determined that the supporting documentation provided by the ABCWUA is sufficient to meet the criteria listed under ARRA, Section 1605(b), Office of Management and Budget (OMB) regulations at 2 CFR 176.60–176.170, and in the April 28, 2009, "Implementation of Buy American provisions of Public Law 111–5, the "American Recovery and Reinvestment Act of 2009" Memorandum:" Iron, steel, and the manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality. The basis for this project waiver is the authorization provided in ARRA, Section 1605(b)(2). Due to the lack of production of this product in the United States in sufficient and reasonably available quantities and of a satisfactory quality in order to meet the ABCWUA's technical specifications, a waiver from the Buy American requirement is justified.

EPA headquarters' March 31, 2009 Delegation of Authority Memorandum provided Regional Administrators with the authority to issue exceptions to Section 1605 of ARRA within the geographic boundaries of their respective regions and with respect to requests by individual grant recipients. Having established both a proper basis to specify the particular good required for this project, and that this manufactured good was not available from a producer in the United States, the ABCWUA is hereby granted a waiver from the Buy American requirements of ARRA, Section 1605(a) of Public Law 111–5 for the purchase of three hundred loggers and one radio transceiver, using ARRA funds, as specified in the ABCWUA's request of February 5, 2010. This supplementary information constitutes the detailed written justification required by ARRA, Section 1605(c), for waivers "based on a finding under subsection (b)."

Authority: Public Law 111–5, section 1605.

Dated: April 28, 2010.

Al Armendariz,

Regional Administrator, Region 6.

[FR Doc. 2010–10839 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-New England Region I—EPA–R01–OW–2010–0316; FRL–9147–1]

Massachusetts Marine Sanitation Device Standard—Receipt of Petition

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice—Receipt of Petition.

SUMMARY: Notice is hereby given that a petition has been received from the Commonwealth of Massachusetts requesting a determination by the Regional Administrator, U.S. Environmental Protection Agency, that adequate facilities for the safe and sanitary removal and treatment of sewage from all vessels are reasonably available for the waters of Pleasant Bay/Chatham Harbor, MA.

DATES: Comments must be submitted by June 7, 2010.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–R01–OW–2010–0316, by one of the following methods: *http://www.regulations.gov,* Follow the on-line instructions for submitting comments.

- *E-mail: rodney.ann@epa.gov.*
- *Fax:* (617) 918–0538.

Mail and hand delivery: U.S. Environmental Protection Agency—New England Region, Five Post Office Square, Suite 100, OEP06–1, Boston, MA 02109–3912. Deliveries are only accepted during the Regional Office's normal hours of operation (8 a.m.–5 p.m., Monday through Friday, excluding legal holidays), and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA–R01–OW–2010–0316. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *http://www.regulations.gov,* or e-mail. The *http://www.regulations.gov* Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *http://www.regulations.gov* your e-mail

address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copy-righted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at the U.S. Environmental Protection Agency—New England Region, Five Post Office Square, Suite 100, OEP06–01, Boston, MA 02109–3912. Such deliveries are only accepted during the Regional Office's normal hours of operation, and special arrangements should be made for deliveries of boxed information. The Regional Office is open from 8 a.m.–5 p.m., Monday through Friday, excluding legal holidays. The telephone number is (617) 918–1538.

FOR FURTHER INFORMATION CONTACT: Ann Rodney, U.S. Environmental Protection Agency—New England Region, Five Post Office Square, Suite 100, OEP06–01, Boston, MA 02109–3912. Telephone: (617) 918–1538, Fax number: (617) 918–0538; e-mail address: *rodney.ann@epa.gov.*

SUPPLEMENTARY INFORMATION: Notice is hereby given that a petition has been received from the Commonwealth of Massachusetts requesting a determination by the Regional Administrator, U.S. Environmental Protection Agency, pursuant to Section 312(f)(3) of Public Law 92–500 as amended by Public Law 95–217 and Public Law 100–4, that adequate facilities for the safe and sanitary removal and treatment of sewage from all vessels are reasonably available for Pleasant Bay/Chatham Harbor, MA.

The proposed boundary of the Pleasant Bay/Chatham Harbor NDA includes all of the 17 sub-embayments within the area with the following water boundaries:

Waterbody/general area	From latitude	From longitude	To latitude	To longitude
Bounded on the west by mainland Chatham, Harwich, Brewster and Orleans; bounded on the east by Nauset Beach (North Beach) and North Beach Island. A line drawn cross the mouth of the North inlet across from Minister's Point:	41°42′19.43″ N	69°55′44.76″ W	41°42′13.31″ N	69°55′45.11″ W
From West of a line across the mouth of the South Inlet:	41°40′41.51″ N	69°56′3.47″ W	41°39′56.52″ N	69°56′30.48″ W

The boundaries were chosen based on easy line-of-sight locations and generally represent all navigational waters. The area includes the municipal waters of Chatham, Harwich, Brewster and Orleans.

Boating is one of the most popular recreational uses of Pleasant Bay/Chatham Harbor. There are three private marinas, four boating clubs and approximately 30 public landings/access points in the proposed area. Massachusetts has certified that there are three pumpout facilities within the proposed area available to the boating public. A list of the facilities, locations, contact information, hours of operation, and water depth is provided at the end of this petition.

Massachusetts has provided documentation indicating that the total vessel population is estimated to be 2,160 in the proposed area. It is estimated that 124 of the total vessel population may have a Marine Sanitation Device (MSD) of some type. Over 90 percent of the boats in the proposed area are 25 feet and under.

The proposed area is roughly 9,000 acres and is a state designated Area of Critical Environment Concern (ACEC). The islands of Pochet, Sampson, Hog, and Little Sipson are held in trust and subject to conservation restrictions and Strong Island is owned by the town of Chatham and the Chatham Conservation Foundation. Tern Island is owned by the Massachusetts Audubon Society. The Nauset Barrier Beach is within the boundaries of the Cape Cod National Seashore. There are 36 finfish species and an abundance of quahogs, softshell clams, razor clams and scallops. This area is a popular destination for boaters due to its natural environmental diversity and would benefit from a No Discharge Area.

PUMPOUT FACILITIES WITHIN PROPOSED NO DISCHARGE AREA

PLEASANT BAY/CHATHAM HARBOR				
Name	Location	Contact info.	Hours	Mean low water depth
Harbormaster	Round Cove Harwich	508–430–7532 VHF 60	On demand	N/A
Harbormaster	Ryder's Cove Chatham	508–945–1067 or 508–945–5185 VHF 66.	M–F 8 am–5 pm, Sat. 9 am–1 pm.	3 ft
Nauset Marine East	37 Barley Neck Road, East Orleans.	508–255–3045 VHF 9	On demand	3 ft

Dated: April 27, 2010.

H. Curtis Spalding,

Regional Administrator, New England Region.

[FR Doc. 2010–10841 Filed 5–6–10; 8:45 am]

BILLING CODE 6560–50–P

FEDERAL COMMUNICATIONS COMMISSION

Notice of Public Information Collection(s) Being Submitted for Review and Approval to the Office of Management and Budget (OMB), Comments Requested

May 4, 2010.

SUMMARY: The Federal Communications Commission, as part of its continuing effort to reduce paperwork burden invites the general public and other Federal agencies to take this opportunity to comment on the following information collection(s), as required by the Paperwork Reduction Act (PRA) of 1995, 44 U.S.C. 3501 – 3520. Comments are requested concerning: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimate; (c) ways to enhance the quality, utility, and clarity of the information collected; (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology; and (e) ways to further reduce the information collection burden for small business concerns with fewer than 25 employees.

The FCC may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a currently valid OMB control number.

DATES: Written Paperwork Reduction Act (PRA) comments should be submitted on or before June 7, 2010. If you anticipate that you will be submitting PRA comments, but find it difficult to do so within the period of time allowed by this notice, you should advise the FCC contact listed below as soon as possible.

ADDRESSES: Direct all PRA comments to Nicholas A. Fraser, Office of Management and Budget, via fax at 202–395–5167 or via the Internet at Nicholas_A._Fraser@omb.eop.gov and to the Federal Communications Commission via email to PRA@fcc.gov. To view a copy of this information collection request (ICR) submitted to OMB: (1) Go to the web page http://reginfo.gov/public/do/PRAMain, (2) look for the section of the web page called "Currently Under Review", (3) click on the downward–pointing arrow in the "Select Agency" box below the "Currently Under Review" heading, (4) select "Federal Communications Commission" from the list of agencies presented in the "Select Agency" box, (5) click the "Submit" button to the right of the "Select Agency" box, and (6) when the list of FCC ICRs currently under review appears, look for the title of this ICR (or its OMB Control Number, if there is one) and then click on the ICR Reference Number to view detailed information about this ICR.

FOR FURTHER INFORMATION CONTACT: Judith B. Herman, Office of Managing Director, (202) 418–0214. For additional information or copies of the information collection(s), contact Judith B. Herman, OMD, 202–418–0214, email Judith–b.herman@fcc.gov.

SUPPLEMENTARY INFORMATION:

OMB Control Number: 3060–1030.

Title: Service Rules for Advanced Wireless Services (AWS) in the 1.7 GHz and 2.1 GHz Bands.

Form Number: N/A.

Type of Review: Extension of a currently approved collection.

Respondents: Business or other for–profit, not–for–profit institutions and state, local or tribal government.

Number of Respondents and Responses: 979 respondents, 1,630 responses.

Estimated Time per Response: .25 – 5 hours.

Frequency of Response: Semi–annual and on occasion reporting requirements, recordkeeping requirement and third party disclosure requirement.

Obligation to Respond: Required to obtain or retain benefits. Statutory authority for this information collection is contained in 47 U.S.C. sections 151, 154(i), 301, 302, 303(f), 303(g), 303(r), 307, 308, 309, 310, 316, and the Commercial Spectrum Enhancement Act (CSEA) of 2004, Pub. L. No. 108–494.

Total Annual Burden: 33,480 hours.

Total Annual Cost: $581,800.

Privacy Act Impact Assessment: N/A.

Nature and Extent of Confidentiality: There is no need for confidentiality except as follows: The clearinghouses have committed, pursuant to the FCC's directive, to implement safeguards to maintain the confidentiality of information where necessary to protect respondents' legitimate commercial interests. Additionally, the Ninth Report and Order, 71 FR 29818 (May 24, 2006), protects the specific location of the Broadband Radio Service (BRS) licensees' end–user/subscriber equipment, customer names, addresses and contact for purpose of relocation, which could raise competitive concerns. The Commission's rules permit filing information with the Commission to request confidential treatment of their information under 47 CFR 0.459 of the Commission's rules.

Needs and Uses: The Commission will submit this expiring information collection to the Office of Management and Budget (OMB) during this comment period in order to obtain the full three year clearance from them and to keep the OMB approval from lapsing. The Commission has not changed the reporting, recordkeeping and/or third party disclosure requirements. The Commission is reporting a 4,333 hour adjustment increase in burden hours and a $2,139,400 decrease in annual costs. The change in burden hours and costs are due to a complete review of the Commission's initial burden estimates.

The public burden requirements will be used by incumbent licensees and new entrants to negotiate relocation agreements and to coordinate operations to avoid interference. The information will also be used by the clearinghouses to maintain a national database, determine reimbursement obligations of entrants pursuant to the Commission's rules and notify such entrants of their reimbursement obligations. Also, the information will be used to facilitate dispute resolution and for FCC oversight of the clearinghouses and the cost–sharing plan. Additionally, the requirements regarding foreign ownership, substantial service compliance, and interference coordination has been used in the past and will continue to be used to minimize interference, verify that the applicants are legally and technically qualified to hold licenses, and to determine compliance with Commission rules.

Federal Communications Commission.

Marlene H. Dortch,

Secretary,

Office of the Secretary,

Office of Managing Director.

[FR Doc. 2010–10785 Filed 5–6–10; 8:45 am]

BILLING CODE 6712–01–S

FEDERAL COMMUNICATIONS COMMISSION

Notice of Public Information Collections Being Submitted for Review and Approval to the Office of Management and Budget (OMB), Comments Requested

April 30, 2010.

SUMMARY: The Federal Communications Commission, as part of its continuing effort to reduce paperwork burden invites the general public and other Federal agencies to take this opportunity to comment on the following information collections, as required by the Paperwork Reduction Act (PRA) of 1995, 44 U.S.C. 3501 – 3520. Comments are requested concerning: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimate; (c) ways to enhance the quality, utility, and clarity of the information collected; (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology; and (e) ways to further reduce the information collection burden for small business concerns with fewer than 25 employees.

The FCC may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a currently valid OMB control number.

DATES: Written Paperwork Reduction Act (PRA) comments should be submitted on or before June 7, 2010. If you anticipate that you will be submitting PRA comments, but find it difficult to do so within the period of time allowed by this notice, you should advise the FCC contact listed below as soon as possible.

ADDRESSES: Direct all PRA comments to Nicholas A. Fraser, Office of Management and Budget, via fax at 202–395–5167 or via the Internet at Nicholas_A._Fraser@omb.eop.gov and to the Federal Communications Commission via email to PRA@fcc.gov and Cathy.Williams@fcc.gov. To view a copy of this information collection request (ICR) submitted to OMB: (1) Go to the web page http://reginfo.gov/public/do/PRAMain, (2) look for the section of the web page called "Currently Under Review", (3) click on the downward–pointing arrow in the "Select Agency" box below the "Currently Under Review" heading, (4) select "Federal Communications Commission" from the list of agencies presented in the "Select Agency" box, (5) click the "Submit" button to the right of the "Select Agency" box, and (6) when the list of FCC ICRs currently under review appears, look for the title of this ICR (or its OMB Control Number, if there is one) and then click on the ICR Reference Number to view detailed information about this ICR.

FOR FURTHER INFORMATION CONTACT: For additional information or copies of the information collections, contact Cathy Williams on (202) 418–2918.

SUPPLEMENTARY INFORMATION:

OMB Control Number: 3060–0888.

Title: Section 76.7, Petition Procedures; Section 76.9, Confidentiality of Proprietary Information; Section 76.61, Dispute Concerning Carriage; Section 76.914, Revocation of Certification; Section 76.1001, Unfair Practices; Section 76.1003, Program Access Proceedings; Section 76.1302, Carriage Agreement Proceedings; Section 76.1513, Open Video Dispute Resolution.

Form Number: Not applicable.

Type of Review: Revision of a currently approved collection.

Respondents: Businesses or other for–profit.

Number of Respondents and Responses: 640 respondents; 640 responses.

Estimated Time per Response: 4.1 to 61.4 hours.

Frequency of Response: On occasion reporting requirement; Third party disclosure requirement.

Obligation to Respond: Required to obtain or retain benefits. The statutory authority for this information is contained in Sections 4(i), 303(r) and 628 of the Communications Act of 1934, as amended.

Total Annual Burden: 20,960 hours

Total Annual Cost: $681,600.

Privacy Act Impact Assessment: No impact(s).

Nature and Extent of Confidentiality: A party that wishes to have confidentiality for proprietary information with respect to a submission it is making to the Commission must file a petition pursuant to the pleading requirements in Section 76.7 and use the method described in Sections 0.459 and 76.9 to demonstrate that confidentiality is warranted.

On January 20, 2010, the Commission adopted a First Report and Order In the Matter of Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements, MB Docket No. 07–198, FCC 10–17. In the First Report and Order, the Commission establishes rules, policies, and procedures for the consideration of complaints alleging unfair acts involving terrestrially delivered, cable–affiliated programming in violation of Section 628(b) of the Communications Act. The Commission also establishes procedures for the consideration of requests for a temporary standstill of the price, terms, and other conditions of an existing programming contract by a program access complainant seeking renewal of such a contract.

The following rule sections contain revised information collection requirements that the Commission is seeking approval for from the Office of Management and Budget (OMB):

47 CFR Section 76.1001(b)(2) permits any multichannel video programming distributor to commence an adjudicatory proceeding by filing a complaint with the Commission alleging that a cable operator, a satellite cable programming vendor in which a cable operator has an attributable interest, or a satellite broadcast programming vendor, has engaged in an unfair act involving terrestrially delivered, cable–affiliated programming (which, as defined in this R&O, includes exclusive contracts, discrimination, and undue or improper influence), which must be filed and responded to in accordance with the procedures specified in Section 76.7, except to the extent such procedures are modified by Sections 76.1001(b)(2) and 76.1003. In program access cases involving terrestrially delivered, cable–affiliated programming, the defendant has 45 days from the date of service of the complaint to file an answer, unless otherwise directed by the Commission. A complainant shall have the burden of proof that the defendant's alleged conduct has the purpose or effect of hindering significantly or preventing the complainant from providing satellite cable programming or satellite broadcast programming to subscribers or consumers; an answer to such a complaint shall set forth the defendant's reasons to support a finding that the complainant has not carried this burden. In addition, a complainant alleging that a terrestrial cable programming vendor has engaged in discrimination shall have the burden of proof that the terrestrial cable programming vendor is wholly owned by, controlled by, or under common control with a cable operator or cable operators, satellite cable programming

vendor or vendors in which a cable operator has an attributable interest, or satellite broadcast programming vendor or vendors; an answer to such a complaint shall set forth the defendant's reasons to support a finding that the complainant has not carried this burden. In addition, the R&O provides that a complainant that wants a currently pending complaint involving terrestrially delivered, cable–affiliated programming considered under the rules adopted in the R&O must submit a supplemental filing alleging that the defendant has engaged in an unfair act after the effective date of the rules. In such case, the complaint and supplement will be considered pursuant to the rules adopted in the R&O and the defendant will have an opportunity to answer the supplemental filing, as set forth in the rules.

47 CFR Section 76.1003(c)(3) requires a program access complaint to contain evidence that the complainant competes with the defendant cable operator, or with a multichannel video programming distributor that is a customer of the defendant satellite cable programming or satellite broadcast programming vendor or a terrestrial cable programming vendor alleged to have engaged in conduct described in Section 76.1001(b)(1).

47 CFR Section 76.1003(l) permits a program access complainant seeking renewal of an existing programming contract to file a petition along with its complaint requesting a temporary standstill of the price, terms, and other conditions of the existing programming contract pending resolution of the complaint, to which the defendant will have the opportunity to respond within 10 days of service of the petition, unless otherwise directed by the Commission.

The following rule sections are also covered in this information collection but do not require additional OMB approval since the requirements have not changed since last approved by OMB:

47 CFR Section 76.7. Pleadings seeking to initiate FCC action must adhere to the requirements of Section 76.6 (general pleading requirements) and Section 76.7 (initiating pleading requirements). Section 76.7 is used for numerous types of petitions and special relief petitions, including general petitions seeking special relief, waivers, enforcement, show cause, forfeiture and declaratory ruling procedures.

47 CFR Section 76.9. A party that wishes to have confidentiality for proprietary information with respect to a submission it is making to the FCC must file a petition pursuant to the pleading requirements in Section 76.7 and use the method described in Sections 0.459 to demonstrate that confidentiality is warranted. The petitions filed pursuant to this provision are contained in the existing information collection requirement and are not changed by the rule changes.

47 CFR Section 76.61(a) permits a local commercial television station or qualified low power television station that is denied carriage or channel positioning or repositioning in accordance with the must–carry rules by a cable operator to file a complaint with the FCC in accordance with the procedures set forth in Section 76.7. Section 76.61(b) permits a qualified local noncommercial educational television station that believes a cable operator has failed to comply with the FCC's signal carriage or channel positioning requirements (Sections 76.56 through 76.57) to file a complaint with the FCC in accordance with the procedures set forth in Section 76.7.

47 CFR Section 76.61(a)(1) states that whenever a local commercial television station or a qualified low power television station believes that a cable operator has failed to meet its carriage or channel positioning obligations, pursuant to Section 76.56, such station shall notify the operator, in writing, of the alleged failure and identify its reasons for believing that the cable operator is obligated to carry the signal of such station or position such signal on a particular channel.

47 CFR Section 76.61(a)(2) states that the cable operator shall, within 30 days of receipt of such written notification, respond in writing to such notification and either commence to carry the signal of such station in accordance with the terms requested or state its reasons for believing that it is not obligated to carry such signal or is in compliance with the channel positioning and repositioning and other requirements of the must–carry rules. If a refusal for carriage is based on the station's distance from the cable system's principal headend, the operator's response shall include the location of such headend. If a cable operator denies carriage on the basis of the failure of the station to deliver a good quality signal at the cable system's principal headend, the cable operator must provide a list of equipment used to make the measurements, the point of measurement and a list and detailed description of the reception and over–the–air signal processing equipment used, including sketches such as block diagrams and a description of the methodology used for processing the signal at issue, in its response.

47 CFR Section 76.914(c) permits a cable operator seeking revocation of a franchising authority's certification to file a petition with the FCC in accordance with the procedures set forth in Section 76.7.

47 CFR Section 76.1003(a) permits any multichannel video programming distributor (MVPD) aggrieved by conduct that it believes constitute a violation of the FCC's competitive access to cable programming rules to commence an adjudicatory proceeding at the FCC to obtain enforcement of the rules through the filing of a complaint, which must be filed and responded to in accordance with the procedures specified in Section 76.7, except to the extent such procedures are modified by Section 76.1003.

47 CFR Section 76.1003(b) requires any aggrieved MVPD intending to file a complaint under this section to first notify the potential defendant cable operator, and/or the potential defendant satellite cable programming vendor or satellite broadcast programming vendor, that it intends to file a complaint with the Commission based on actions alleged to violate one or more of the provisions contained in Sections 76.1001 or 76.1002 of this part. The notice must be sufficiently detailed so that its recipient(s) can determine the nature of the potential complaint. The potential complainant must allow a minimum of ten (10) days for the potential defendant(s) to respond before filing a complaint with the Commission.

47 CFR Section 76.1003(c) describes the required contents of a program access complaint, in addition to the requirements of Section 76.7 of this part.

47 CFR Section 76.1003(d) states that, in a case where recovery of damages is sought, the complaint shall contain a clear and unequivocal request for damages and appropriate allegations in support of such claim.

47 CFR Section 76.1003(e)(1) requires cable operators, satellite cable programming vendors, or satellite broadcast programming vendors whom expressly reference and rely upon a document in asserting a defense to a program access complaint filed or in responding to a material allegation in a program access complaint filed pursuant to Section 76.1003, to include such document or documents, such as contracts for carriage of programming referenced and relied on, as part of the answer. Except as otherwise provided or directed by the Commission, any cable operator, satellite cable programming vendor or satellite broadcast programming vendor upon which a program access complaint is served under this section shall answer within

twenty (20) days of service of the complaint.

47 CFR Section 76.1003(e)(2) requires an answer to an exclusivity complaint to provide the defendant's reasons for refusing to sell the subject programming to the complainant. In addition, the defendant may submit its programming contracts covering the area specified in the complaint with its answer to refute allegations concerning the existence of an impermissible exclusive contract. If there are no contracts governing the specified area, the defendant shall so certify in its answer. Any contracts submitted pursuant to this provision may be protected as proprietary pursuant to Section 76.9 of this part.

47 CFR Section 76.1003(e)(3) requires an answer to a discrimination complaint to state the reasons for any differential in prices, terms or conditions between the complainant and its competitor, and to specify the particular justification set forth in Section 76.1002(b) of this part relied upon in support of the differential.

47 CFR Section 76.1003(e)(4) requires an answer to a complaint alleging an unreasonable refusal to sell programming to state the defendant's reasons for refusing to sell to the complainant, or for refusing to sell to the complainant on the same terms and conditions as complainant's competitor, and to specify why the defendant's actions are not discriminatory.

47 CFR Section 76.1003(f) provides that, within fifteen (15) days after service of an answer, unless otherwise directed by the Commission, the complainant may file and serve a reply which shall be responsive to matters contained in the answer and shall not contain new matters.

47 CFR Section 76.1003(g) states that any complaint filed pursuant to this subsection must be filed within one year of the date on which one of three specified events occurs.

47 CFR Section 76.1003(h) sets forth the remedies that are available for violations of the program access rules, which include the imposition of damages, and/or the establishment of prices, terms, and conditions for the sale of programming to the aggrieved multichannel video programming distributor, as well as sanctions available under title V or any other provision of the Communications Act.

47 CFR Section 76.1003(j) states in addition to the general pleading and discovery rules contained in Section 76.7 of this part, parties to a program access complaint may serve requests for discovery directly on opposing parties, and file a copy of the request with the Commission. The respondent shall have the opportunity to object to any request for documents that are not in its control or relevant to the dispute. Such request shall be heard, and determination made, by the Commission. Until the objection is ruled upon, the obligation to produce the disputed material is suspended. Any party who fails to timely provide discovery requested by the opposing party to which it has not raised an objection as described above, or who fails to respond to a Commission order for discovery material, may be deemed in default and an order may be entered in accordance with the allegations contained in the complaint, or the complaint may be dismissed with prejudice.

47 CFR Section 76.1302(a) states that any video programming vendor or multichannel video programming distributor aggrieved by conduct that it believes constitute a violation of the regulations set forth in this subpart may commence an adjudicatory proceeding at the Commission to obtain enforcement of the rules through the filing of a complaint.

47 CFR Section 76.1302(b) states that any aggrieved video programming vendor or multichannel video programming distributor intending to file a complaint under this section must first notify the potential defendant multichannel video programming distributor that it intends to file a complaint with the Commission based on actions alleged to violate one or more of the provisions contained in Section 76.1301 of this part. The notice must be sufficiently detailed so that its recipient(s) can determine the specific nature of the potential complaint. The potential complainant must allow a minimum of ten (10) days for the potential defendant(s) to respond before filing a complaint with the Commission.

47 CFR Section 76.1302(c) specifies the content of carriage agreement complaints.

47 CFR Section 76.1302(d) states that any multichannel video programming distributor upon which a carriage agreement complaint is served under this section shall answer within thirty (30) days of service of the complaint, unless otherwise directed by the Commission. The answer shall address the relief requested in the complaint, including legal and documentary support, for such response, and may include an alternative relief proposal without any prejudice to any denials or defenses raised.

47 CFR Section 76.1302(e) states that within twenty (20) days after service of an answer, unless otherwise directed by the Commission, the complainant may file and serve a reply which shall be responsive to matters contained in the answer and shall not contain new matters.

47 CFR Section 76.1302(f) states that any complaint filed pursuant to this subsection must be filed within one year of the date on which one of three events occurs.

47 CFR Section 76.1302(g)(1) states that upon completion of such adjudicatory proceeding, the Commission shall order appropriate remedies, including, if necessary, mandatory carriage of a video programming vendor's programming on defendant's video distribution system, or the establishment of prices, terms, and conditions for the carriage of a video programming vendor's programming.

47 CFR Section 76.1513(a) permits any party aggrieved by conduct that it believes constitute a violation of the FCC's regulations or in section 653 of the Communications Act (47 U.S.C. 573) to commence an adjudicatory proceeding at the Commission to obtain enforcement of the rules through the filing of a complaint, which must be filed and responded to in accordance with the procedures specified in Section 76.7, except to the extent such procedures are modified by Section 76.1513.

47 CFR Section 76.1513(b) provides that an open video system operator may not provide in its carriage contracts with programming providers that any dispute must be submitted to arbitration, mediation, or any other alternative method for dispute resolution prior to submission of a complaint to the Commission.

47 CFR Section 76.1513(c) requires that any aggrieved party intending to file a complaint under this section must first notify the potential defendant open video system operator that it intends to file a complaint with the Commission based on actions alleged to violate one or more of the provisions contained in this part or in Section 653 of the Communications Act. The notice must be in writing and must be sufficiently detailed so that its recipient(s) can determine the specific nature of the potential complaint. The potential complainant must allow a minimum of ten (10) days for the potential defendant(s) to respond before filing a complaint with the Commission.

47 CFR Section 76.1513(d) describes the contents of an open video system complaint.

47 CFR Section 76.1513(e) addresses answers to open video system complaints.

47 CFR Section 76.1513(f) states within twenty (20) days after service of

an answer, the complainant may file and serve a reply which shall be responsive to matters contained in the answer and shall not contain new matters.

47 CFR Section 76.1513(g) requires that any complaint filed pursuant to this subsection must be filed within one year of the date on which one of three events occurs.

47 CFR Section 76.1513(h) states that upon completion of the adjudicatory proceeding, the Commission shall order appropriate remedies, including, if necessary, the requiring carriage, awarding damages to any person denied carriage, or any combination of such sanctions. Such order shall set forth a timetable for compliance, and shall become effective upon release.

OMB Control Number: 3060–1034.

Title: Digital Audio Broadcasting Systems and their Impact on the Terrestrial Radio Broadcast Service; Digital Notification Form, FCC Form 335.

Form Number: FCC Form 335.

Type of Review: Revision of a currently approved collection.

Respondents: Business or other for–profit entities.

Number of Respondents and Responses: 1,310 respondents; 1,310 responses.

Estimated Time per Response: 1– 8 hours.

Frequency of Response: On occasion reporting requirement.

Obligation to Respond: Required to obtain or retain benefits. The statutory authority for this information collection is contained in Sections 154(i), 303, 310 and 533 of the Communications Act of 1934, as amended.

Total Annual Burden: 1,780 hours.

Total Annual Cost: $606,500.

Privacy Impact Assessment: No impact(s).

Nature and Extent of Confidentiality: There is no need for confidentiality with this collection of information.

Needs and Uses: On January 29, 2010, the Commission released the Order, Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service ("Order"), DA 10–208, MM Docket 99–325. The Order will allow:

(1) Eligible authorized FM stations to commence operation of FM digital facilities with operating power up to –14 dB upon notice to the Commission on either Form 335 (the licensee of a super–powered FM station must file an informal request for any increase in the station's FM Digital ERP).

(2) Licensees to submit an application to the Media Bureau, in the form of an informal request, for any increase in FM Digital ERP beyond 6 dB.

(3) Licensees submitting such a request must use a simplified method set forth in the Order to determine the proponent station's maximum permissible FM Digital ERP.

(4) In situations where the simplified method is not applicable due to unusual terrain or other environmental or technical considerations or when it produces anomalous FM Digital ERP results, the Bureau will accept applications for FM Digital ERP in excess of –14 dB on a case–by–case basis when accompanied by a detailed showing containing a complete explanation of the prediction methodology used as well as data, maps and sample calculations.

(5) Finally, the Order implements interference mitigation and remediation procedures to resolve promptly allegations of digital interference to an authorized FM analog facility resulting from an FM Digital ERP power increase undertaken pursuant to the procedures adopted in the Order. Pursuant to these procedures, the affected analog FM station may file an interference complaint with the Bureau. In order to be considered by the Bureau, the complaint must contain at least six reports of ongoing (rather than transitory) objectionable interference. For each report of interference, the affected FM licensee must submit a map showing the location of the reported interference and a detailed description of the nature and extent of the interference being experienced at that location. Interference reports at locations outside a station's protected analog contour will not be considered. The complaint must also contain a complete description of the tests and equipment used to identity the alleged interference and the scope of the unsuccessful efforts to resolve the interference.

The following rule sections contain information collection requirements that have been approved by OMB and do not require any additional OMB approval because they did not change since last approved by OMB:

47 CFR 73.404(b) states in situations where interference to other stations is anticipated or actually occurs, AM licensees may, upon notification to the Commission, reduce the power of the primary Digital Audio Broadcasting (DAB) sidebands by up to 6 dB. Any greater reduction of sideband power requires prior authority from the Commission via the filing of a request for special temporary authority or an informal letter request for modification of license.

47 CFR 73.404(e) states licensees (commercial and noncommercial AM and FM radio stations) must provide notification to the Commission in Washington, DC, within 10 days of commencing in–band, on channel (IBOC) digital operation. The notification must include the following information:

(1) Call sign and facility identification number of the station;

(2) Date on which IBOC operation commenced;

(3) Certification that the IBOC DAB facilities conform to permissible hybrid specifications;

(4) Name and telephone number of a technical representative the Commission can call in the event of interference;

(5) FM digital effective radiated power used and certification that the FM analog effective radiated power remains as authorized;

(6) Transmitter power output; if separate analog and digital transmitters are used, the power output for each transmitter;

(7) If applicable, any reduction in an AM station's primary digital carriers;

(8) If applicable, the geographic coordinates, elevation data, and license file number of the auxiliary antenna employed by an FM station as a separate digital antenna;

(9) If applicable, for FM systems employing interleaved antenna bays, a certification that adequate filtering and/or isolation equipment has been installed to prevent spurious emissions in excess of the limits specified in Section 73.317;

(10) A certification that the operation will not cause human exposure to levels of radio frequency radiation in excess of the limits specified in Section 1.1310 of the Commission's rules and is therefore categorically excluded from environmental processing pursuant to Section 1306(b). Any station that cannot certify compliance must submit an environmental assessment ("EA") pursuant to Section 1.1311 and may not commence IBOC operation until such EA is ruled upon by the Commission.

Federal Communications Commission.

Marlene H. Dortch,

Secretary,

Office of the Secretary,

Office of Managing Director.

[FR Doc. 2010–10760 Filed 5–6–10; 8:45 am]

BILLING CODE 6712–01–S

FEDERAL COMMUNICATIONS COMMISSION

Notice of Public Information Collection(s) Being Reviewed by the Federal Communications Commission, Comments Requested

May 3, 2010.

SUMMARY: The Federal Communications Commission, as part of its continuing effort to reduce paperwork burden invites the general public and other Federal agencies to take this opportunity to comment on the following information collection(s), as required by the Paperwork Reduction Act (PRA) of 1995, 44 U.S.C. 3501–3520. Comments are requested concerning: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimate; (c) ways to enhance the quality, utility, and clarity of the information collected; (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology, and (e) ways to further reduce the information collection burden on small business concerns with fewer than 25 employees.

The FCC may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a currently valid OMB control number.

DATES: Written Paperwork Reduction Act (PRA) comments should be submitted on or before July 6, 2010. If you anticipate that you will be submitting PRA comments, but find it difficult to do so within the period of time allowed by this notice, you should advise the FCC contact listed below as soon as possible.

ADDRESSES: Direct all PRA comments to Nicholas A. Fraser, Office of Management and Budget, via fax at 202–395–5167 or via the Internet at Nicholas_A._Fraser@omb.eop.gov and to the Federal Communications Commission via email to PRA@fcc.gov.

FOR FURTHER INFORMATION CONTACT: Judith B. Herman, Office of Managing Director, (202) 418–0214. For additional information, contact Judith B. Herman, OMD, 202–418–0214 or email Judith–b.herman@fcc.gov.

SUPPLEMENTARY INFORMATION:

OMB Control Number: 3060–1135.

Title: Revisions to Rules Authorizing the operation of Low Power Auxiliary Stations (Including Wireless Microphones).

Form No.: N/A.

Type of Review: Revision of a currently approved collection.

Respondents: Business or other for–profit, not–for–profit institutions, and state local or tribal government.

Number of Respondents and Responses: 5,100 respondents; 127,500 responses.

Estimated Time Per Response: .25 hours (15 minutes).

Frequency of Response: Third party disclosure requirements (disclosure and labeling).

Obligation to Respond: Mandatory. Statutory authority for this information collection is contained in 47 U.S.C. sections 151, 152, 154(i), 154(j), 301, 302(a), 303, 304 307, 308, 309, 316, 332, 336 and 337.

Total Annual Burden: 31,875 hours.

Total Annual Cost: $1,625,000.

Privacy Act Impact Assessment: N/A.

Nature and Extent of Confidentiality: There is no need for confidentiality since this a third party disclosure and labeling requirement.

Needs and Uses: The Commission will submit this revision to the Office of Management and Budget (OMB) after this comment period in order to obtain the full three year clearance from them. The Commission is requesting a revision of this collection which eliminates the early clearing requirement burden as it will be unnecessary after June 12, 2010 while keeping the disclosure and labeling requirements that would allow the Commission to clear the 700 MHz band of wireless microphones and provide them a home in the core TV spectrum, where many wireless microphones are already operating. Therefore, the Commission is reducing the total annual burden for this collection by 1,049 hours (program change).

The point–of–sale disclosure requirement is necessary for a successful transition of wireless microphones out of the 700 MHz band. The Commission anticipates that many wireless microphone users currently operating in the 700 MHz band will have to purchase or lease new equipment capable of operating in the core TV spectrum. The point–of–sale disclosure requirement will help these consumers make an educated decision as they obtain new microphones, and it will help them operate in the core TV spectrum without causing interference to other services in the spectrum. Further, a label on 700 MHz band wireless microphones bound for export will help to ensure that these wireless microphones do not continue to be made available for use in the United States, in contravention of our efforts to remove them from the 700 MHz band.

Federal Communications Commission.

Marlene H. Dortch,

Secretary,

Office of the Secretary,

Office of Managing Director.

[FR Doc. 2010–10759 Filed 5–6–10; 8:45 am]

BILLING CODE 6712–01–S

FEDERAL COMMUNICATIONS COMMISSION

Notice of Public Information Collection Being Reviewed by the Federal Communications Commission for Extension Under Delegated Authority, Comments Requested

April 30, 2010.

SUMMARY: The Federal Communications Commission, as part of its continuing effort to reduce paperwork burden invites the general public and other Federal agencies to take this opportunity to comment on the following information collection, as required by the Paperwork Reduction Act (PRA) of 1995, 44 U.S.C. 3501 – 3520. Comments are requested concerning: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimate; (c) ways to enhance the quality, utility, and clarity of the information collected; (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology, and (e) ways to further reduce the information collection burden for small business concerns with fewer than 25 employees.

The FCC may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a currently valid OMB control number.

DATES: Written Paperwork Reduction Act (PRA) comments should be submitted on or before [July 6, 2010]. If you anticipate that you will be submitting PRA comments, but find it difficult to do so within the period of

time allowed by this notice, you should advise the FCC contact listed below as soon as possible.

ADDRESSES: Direct all PRA comments to Nicholas A. Fraser, Office of Management and Budget, via fax at 202–395–5167 or via email to Nicholas_A._Fraser@omb.eop.gov and to the Federal Communications Commission via email to PRA@fcc.gov and Cathy.Williams@fcc.gov.

FOR FURTHER INFORMATION CONTACT: For additional information, contact Cathy Williams on (202) 418–2918.

SUPPLEMENTARY INFORMATION:

OMB Control Number: 3060–0633.

Title – Sections 73.1230, 74.165, 74.432, 74.564, 74.664, 74.765, 74.832, 74.1265, Posting or Filing of Station Licenses.

Form Number: N/A.

Type of Review: Extension of a currently approved collection.

Respondents: Businesses or other for–profit entities, Not–for–profit institutions.

Number of Respondents and Responses: 2,584 respondents; 2,584 responses.

Estimated Hours per Response: 0.083 hours.

Frequency of Response: Recordkeeping requirement; On occasion reporting requirement; Third party disclosure requirement.

Obligation to Responds: Required to obtain or retain benefits. The statutory authority for this information collection is contained in Section 154(i) of the Communications Act of 1934, as amended.

Total Annual Burden: 214 hours.

Total Annual Cost: $24,860.

Nature and Extent of Confidentiality: No need for confidentiality required with this collection of information.

Privacy Impact Assessment: No impact(s).

Needs and Uses: 47 CFR 73.1230 requires that the station license and any other instrument of station authorization for an AM, FM or TV station be posted in a conspicuous place at the place the licensee considers to be the principal control point of the transmitter.

47 CFR 74.165 requires that the instrument of authorization for an experimental broadcast station be available at the transmitter site.

47 CFR 74.432(j) (remote pickup broadcast station) and 74.832(j) (low power auxiliary station) requires that the license of a remote pickup broadcast/low power auxiliary station shall be retained in the licensee's files, posted at the transmitter, or posted at the control point of the station. These sections also require the licensee to forward the station license to the FCC in the case of permanent discontinuance of the station.

47 CFR 74.564 (aural broadcast auxiliary stations) requires that the station license and any other instrument of authorization be posted in the room where the transmitter is located, or if operated by remote control, at the operating position.

47 CFR 74.664 (television broadcast auxiliary stations) requires that the station license and any other instrument of authorization be posted in the room where the transmitter is located.

Sections 74.765 (low power TV, TV translator and TV booster) and 74.1265 (FM translator stations and FM booster stations), require that the station license and any other instrument of authorization be retained in the station's files. In addition, the call sign of the station, together with the name, address and telephone number of the licensee or the local representative of the licensee, and the name and address of the person and place where the station records are maintained, shall be displayed at the transmitter site on the structure supporting the transmitting antenna.

Federal Communications Commission.

Marlene H. Dortch,

Secretary,

Office of the Secretary,

Office of Managing Director.

[FR Doc.2010–10761 Filed 5–6–10; 8:45 am]

BILLING CODE 6712–01–S

FEDERAL COMMUNICATIONS COMMISSION

[CG Docket No. 10–51; DA 10–314]

Structure and Practices of the Video Relay Service Program

AGENCY: Federal Communications Commission.

ACTION: Notice.

SUMMARY: In this document, the Commission, via the Consumer and Governmental Affairs Bureau (Bureau), addresses the compensability from the Interstate TRS Fund (Fund) of certain types of calls made through Video Relay Service (VRS), a form of Telecommunications Relay Service (TRS). First, the Bureau emphasizes that VRS calls made by or to a VRS provider's employee, or the employee of a provider's subcontractor, are not eligible for compensation from the TRS Fund on a per-minute basis from the Fund, but rather as business expenses. Second, the Bureau emphasizes that VRS calls placed for the purpose of generating compensable minutes are not, and never have been, compensable from the Fund. Finally, the Bureau emphasizes that two categories of calls do not meet the definition of TRS or otherwise are not compensable from the Fund under plain statutory language: (1) VRS Voice Carry Over (VCO) used to connect two hearing users and (2) VRS calls used to connect two users who are both outside the United States. This action is necessary to explain that certain types of TRS minutes are not compensable from the Fund. The intended impact of this action is to enhance the integrity of the TRS program.

DATES: Effective February 25, 2010.

FOR FURTHER INFORMATION CONTACT: Gregory Hlibok, Consumer and Governmental Affairs Bureau at (202) 559–5158 (VP), or e-mail: *Gregory.Hlibok@fcc.gov.*

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's document DA 10–314, adopted and released on February 25, 2010. The full text of this document and copies of any subsequently filed documents in this matter will be available for public inspection and copying during regular business hours at the FCC Reference Information Center, Portals II, 445 12th Street, SW., Room CY–A257, Washington, DC 20554. This document and copies of subsequently filed documents in this matter may also be purchased from the Commission's duplicating contractor at Portals II, 445 12th Street, SW., Room CY–B402, Washington, DC 20554. Customers may contact the Commission's duplicating contractor at their Web site: *http://www.bcpiweb.com* or call 1–800–378–3160. To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to *fcc504@fcc.gov* or call the Consumer and Governmental Affairs Bureau at (202) 418–0530 (voice), (202) 418–0432 (TTY). Document DA 10–314 can also be downloaded in Word or Portable Document Format (PDF) at: *http://www.fcc.gov/cgb/dro.*

Synopsis

VRS Calls Already Compensated Through the Rate Base

1. In document DA 10–314, the Bureau emphasizes that VRS calls made by or to a VRS provider's employee, or the employee of a provider's subcontractor, are not eligible for compensation from the TRS Fund on a per-minute basis as part of the provider's calls submitted monthly to

the Fund administrator for payment. Instead, the costs of such calls are business expenses that can and should be included in the providers' cost data submitted to the Fund administrator for purposes of setting VRS compensation rates. The Relay Services Data Request form, which is submitted to the Fund Administrator annually by each provider for purposes of determining the compensation rate, expressly identifies such expenses (*e.g.,* for telecommunications expenses, operations support, human resources, and marketing and advertising) as business expenses. In this manner, the cost associated with providing telephone service for use by employees is properly reflected in the VRS compensation rate. Providers have had ample notice that such costs should be treated as business expenses. Because providers already are able to include the costs of providing telephone and telecommunications services for use by employees in their annual submissions to the Fund Administrator, to permit providers also to be compensated from the Fund for such calls on a per-minute basis would result in double recovery from the Fund.

VRS Calls Placed for the Purpose of Generating Compensable Minutes

2. The Bureau also emphasizes that individuals who place or arrange for VRS calls for the purpose of generating compensable minutes of use are not using the service as intended; that is, Congress intended TRS to provide the ability for individuals with hearing or speech disabilities to communicate over the telephone system with hearing individuals in a functionally equivalent manner. Using VRS as a means to generate compensation from the TRS Fund is antithetical to that statutory purpose. This includes, but is not limited to, calls to podcasts or other pre-recorded material and calls ostensibly for marketing or outreach purposes, when initiated by or on behalf of VRS providers. This also includes paying independent marketing firms to have deaf employees place marketing calls through the providers' VRS. Likewise, for example, when a provider directly or indirectly sponsors events (*e.g.,* lectures, courses, story times) that deaf callers can listen to by placing VRS calls to a bridge number, that is encouraging users to place VRS calls that they would not ordinarily make. In these instances, but for the provider establishing the event for the deaf caller to call via VRS, no such call would occur.

VRS Voice Carry Over (VCO) Calls

3. Some providers offer VCO service to deaf or hard of hearing consumers who use VRS. VRS VCO permits the deaf or hard of hearing user to speak to the other party to the call rather than communicate via ASL; in return, the CA signs in ASL to the consumer what the other party to the call (the voice telephone user) has said. Such calls are generally set up by having the VRS CA, after the VRS user has initiated the video call to the CA, call back the VRS user on a voice telephone line. As a result, the VRS user has both the video link to the CA (to see, in ASL, what the called party has said) and a voice telephone link to the called party so that the VRS user can speak directly to that party.

4. To the extent that some users have abused VRS by using VRS VCO to make voice-to-voice calls for the purpose of making a free long distance call, the Bureau takes this opportunity to remind VRS providers of Congress's explicit limitation that VRS calls "provide the ability for an individual who has a hearing impairment or speech impairment to engage in communication * * * with a hearing individual." 47 U.S.C. 225(a)(3). Therefore, VRS VCO may be used only when a person who is deaf or hard of hearing wants to use his or her own voice to speak to the hearing party during the VRS call. If it becomes clear that what was initially set up as a VRS VCO call is in fact a call between two voice telephone users, the call is no longer a TRS call compensable from the Fund.

VRS Calls That Originate and Terminate Outside of the United States

5. The Bureau also reminds providers that VRS calls that both originate and terminate outside of the United States are not compensable from the Fund under section 225 of the Act. Section 225 of the Act provides that "the Commission shall ensure that interstate and intrastate telecommunications relay services are available, to the extent possible and in the most efficient manner, to hearing-impaired and speech-impaired individuals in the United States." 47 U.S.C. 225(b)(1). Because section 225 of the Act expressly states that TRS is for individuals "in the United States," the statute does not authorize compensation from the Fund for VRS or other TRS calls that do not either originate or terminate in the United States. Similarly, as part of the registration and verification requirements applicable to the provision of ten-digit, North American Numbering Plan (NANP), telephone numbers to Internet-based TRS users, providers must verify that only persons with hearing or speech disabilities residing in the United States may obtain from them, and be registered with, a ten-digit NANP number.

Congressional Review Act

The Commission will not send a copy of this [Report & Order, *etc.*] pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A), because the adopted rules are: Rules of particular applicability;

Ordering Clauses

Pursuant Sections 1, 2, 4(i), and 225 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), and 225, and §§ 0.141, 0.361 and 1.2 of the Commission's rules, 47 CFR 0.141, 0.361 and 1.2, document DA 10–314 IS adopted.

Mark Stone,

Deputy Bureau Chief, Consumer and Governmental Affairs Bureau, Federal Communications Commission.

[FR Doc. 2010–10859 Filed 5–6–10; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL DEPOSIT INSURANCE CORPORATION

Sunshine Act Meeting

Pursuant to the provisions of the "Government in the Sunshine Act" (5 U.S.C. 552b), notice is hereby given that the Federal Deposit Insurance Corporation's Board of Directors will meet in open session at 10 a.m. on Tuesday, May 11, 2010, to consider the following matters:

Summary Agenda: No substantive discussion of the following items is anticipated. These matters will be resolved with a single vote unless a member of the Board of Directors requests that an item be moved to the discussion agenda.

Disposition of minutes of previous Board of Directors' Meetings.

Summary reports, status reports, reports of the Office of Inspector General, and reports of actions taken pursuant to authority delegated by the Board of Directors.

Memorandum and resolutions re: Honoring Employees with 35-Years of Federal Service.

Memorandum and resolution re: Retiring Executive Manager.

Discussion Agenda:

Memorandum and resolution re: Rulemaking on Treatment by the FDIC as Conservator or Receiver of Financial Assets Transferred by an Insured

Depository Institution in Connection with a Securitization or Participation.

Memorandum and resolution re: Notice of Proposed Rulemaking—Large Insured Depository Institutions Reporting and Planning.

The meeting will be held in the Board Room on the sixth floor of the FDIC Building located at 550 17th Street, NW., Washington, DC.

This Board meeting will be Webcast live via the Internet and subsequently made available on-demand approximately one week after the event. Visit *http://www.vodium.com/goto/fdic/boardmeetings.asp* to view the event. If you need any technical assistance, please visit our Video Help page at: *http://www.fdic.gov/video.html.*

The FDIC will provide attendees with auxiliary aids (*e.g.,* sign language interpretation) required for this meeting. Those attendees needing such assistance should call (703) 562–6067 (Voice or TTY), to make necessary arrangements.

Requests for further information concerning the meeting may be directed to Mr. Robert E. Feldman, Executive Secretary of the Corporation, at (202) 898–7043.

Dated: May 4, 2010.

Federal Deposit Insurance Corporation.

Robert E. Feldman,

Executive Secretary.

[FR Doc. 2010–10960 Filed 5–5–10; 11:15 am]

BILLING CODE P

FEDERAL MARITIME COMMISSION

Ocean Transportation Intermediary License Applicants

Notice is hereby given that the following applicants have filed with the Federal Maritime Commission an application for a license as a Non-Vessel-Operating Common Carrier (NVO) and/or Ocean Freight Forwarder (OFF)—Ocean Transportation Intermediary (OTI) pursuant to section 19 of the Shipping Act of 1984 as amended (46 U.S.C. Chapter 409 and 46 CFR part 515). Notice is also hereby given of the filing of applications to amend an existing OTI license or the Qualifying Individual (QI) for a license.

Interested persons may contact the Office of Transportation Intermediaries, Federal Maritime Commission, Washington, DC 20573.

Atlantic Integrated Freight Inc. (NVO), 19 Princeton Drive, Dix Hills, NY 11746, Officer: Danny Dusop Choi, President/Treasurer/Secretary (Qualifying Individual), Application Type: New NVO License.

Direct Service Inc. dba Tiger Freight International Corporation (NVO), 1209 John Reed Court, City of Industry, CA 91745, Officer: Chi Hao (Steve) Hung, President (Qualifying Individual), Application Type: Trade Name Change.

GTS Cargo Inc. (OFF & NVO), 8235 NW. 64th Street, Suite 3, Miami, FL 33166, Officers: Paula Vitielli, Vice President (Qualifying Individual), Erick S. Cicala, President, Application Type: New Off & NVO License.

Lopa Co., Ltd. (NVO), 5532 Fir Circle, La Palma, CA 90623, Officers: Tony Lee, Vice President (Qualifying Individual), Haidong Zhang, President, Application Type: New NVOCC License.

Olutayo A. Oyewo dba Marchon (OFF), 308 Sherman Bouyer Lane, Pasadena, MD 21122, Officer: Olutayo A. Oyewo, Sole Proprietor, Application Type: New OFF License.

Summit Forwarding, LLC (OFF), 3332 Fieldwoode Drive SE., Smyrna, GA 30080, Officers: Sara P. Liao, Manager (Qualifying Individual), Dean Kalinowski, Member, Application Type: New OFF License.

Transoceanic Projects Development Company, Inc. dba AKL Shipping Company (OFF & NVO), 1801 Kingwood Drive, Suite 270, Kingwood, TX 77339, Officers: Howard K. Headrick, Secretary (Qualifying Individual), Arval D. Headrick, Sr., President, Application Type: New OFF & NVO License.

WLI (USA) Inc. (OFF & NVO), 175–01 Rockaway Blvd., Suite 228, Jamaica, NY 11434, Officers: Shao H. Cheng, Vice President (Qualifying Individual), Wai M. Tang, President, Application Type: New OFF & NVO License.

Yoko Aimi dba Y and Y Export Services (OFF), 16931 S. New Hampshire Avenue, #B, Gardena, CA 90247, Officer: Yoko Aimi, Sole Proprietor (Qualifying Individual).

RDD Freight International, (LA) Inc. (OFF), 9690 Telstar Avenue, Suite #207, El Monte, CA 91731, Officers: Lang aka Anthony Zhang, Secretary (Qualifying Individual), Yiwen Hu, President, Application Type: New OFF License.

Dated: May 3, 2010.

Karen V. Gregory,

Secretary.

[FR Doc. 2010–10752 Filed 5–6–10; 8:45 am]

BILLING CODE 6730–01–P

FEDERAL MARITIME COMMISSION

Ocean Transportation Intermediary License Reissuance

Notice is hereby given that the following Ocean Transportation Intermediary licenses have been reissued by the Federal Maritime Commission pursuant to section 19 of the Shipping Act of 1984 (46 U.S.C. Chapter 409) and the regulations of the Commission pertaining to the licensing of Ocean Transportation Intermediaries, 46 CFR Part 515.

License No.	Name/address	Date reissued
011296N	Master Air Cargo, Inc., 3900 NW. 79th Avenue, Suite 236, Doral, FL 33166	March 26, 2010.
017843NF	Washington Movers, Inc., 7913 Cryden Way, Forestville, MD 20747	March 28, 2010.
021331N	Deseret Forwarding International, Inc., 4105 Rio Bravo, Suite 100, El Paso, TX 79902	February 25, 2010.
021896N	Logistic Freight Forwarders, Group, Inc., 7232 NW. 56th Street, Miami, FL 33166	March 25, 2010.

Sandra L. Kusumoto,

Director, Bureau of Certification and Licensing

[FR Doc. 2010–10751 Filed 5–6–10; 8:45 am]

BILLING CODE 6730–01–P

FEDERAL MARITIME COMMISSION

Ocean Transportation Intermediary License Revocation

The Federal Maritime Commission hereby gives notice that the following Ocean Transportation Intermediary licenses have been revoked pursuant to section 19 of the Shipping Act of 1984 (46 U.S.C. Chapter 409) and the regulations of the Commission pertaining to the licensing of Ocean Transportation Intermediaries, 46 CFR part 515, effective on the corresponding date shown below:

License Number: 477NF.

Name: Oceano Shipping Co., Inc.

Address: 75 Maiden Lane, New York, NY 10038.

Date Revoked: April 14, 2010.

Reason: Failed to maintain valid bonds.

License Number: 1384F.
Name: Bryan Forwarding Company, Inc.
Address: 16801 Greenspoint Park Drive, Suite 105, Houston, TX 77060.
Date Revoked: April 9, 2010.
Reason: Failed to maintain a valid bond.

License Number: 3330F.
Name: ABM International Corporation dba Intermountain Forwarding Co.
Address: 285 North Linder Road, P.O. Box 190, Kuna, ID 83634.
Date Revoked: April 4, 2010.
Reason: Failed to maintain a valid bond.

License Number: 3549F.
Name: Cross Ocean International, Inc.
Address: 905 West Hillgrove Avenue, Suite 14, La Grange, IL 60525.
Date Revoked: April 19, 2010.
Reason: Surrendered license voluntarily.

License Number: 004364NF.
Name: Cargotech, LLC dba Cargomania.
Address: 400 South Avenue, Middlesex, NJ 08846.
Date Revoked: April 14, 2010.
Reason: Failed to maintain valid bonds.

License Number: 015949F.
Name: Sanyo Logistics Corporation.
Address: 3625 Del Amo Blvd., #105, Torrance, CA 90503.
Date Revoked: April 8, 2010.
Reason: Failed to maintain a valid bond.

License Number: 009741N.
Name: Covan International, Inc.
Address: 1 Covan Drive, Midland City, AL 36350.
Date Revoked: April 15, 2010.
Reason: Failed to maintain a valid bond.

License Number: 016860N.
Name: Encompass Overseas Shipping, Inc.
Address: 5419 Hollywood Blvd., Suite C–285, Hollywood, CA 90027.
Date Revoked: April 9, 2010.
Reason: Failed to maintain a valid bond.

License Number: 17692NF.
Name: American Links Logistics International, Inc.
Address: 3591 Highland Drive, San Bruno, CA 94066.
Date Revoked: April 3, 2010.
Reason: Failed to maintain valid bonds.

License Number: 017753NF.
Name: Associated Consolidators Express dba A.C.E. Balikbayan Boxes Direct.
Address: 1273 Industrial Parkway, #290, Hayward, CA 94544.
Date Revoked: April 1, 2010.
Reason: Failed to maintain valid bonds.

License Number: 017845F.
Name: Uniworld Express, Inc.
Address: 520 Carson Plaza Ct., Suite 211, Carson, CA 90746.
Date Revoked: April 24, 2010.
Reason: Failed to maintain a valid bond.

License Number: 018094NF.
Name: Cargo Logistics Network Company.
Address: 1825 Cross Beam Road, Suite C, Charlotte, NC 28217.
Date Revoked: April 24, 2010.
Reason: Failed to maintain valid bonds.

License Number: 18226N.
Name: Panex Logistics Int'l (U.S.A.), Inc.
Address: 3255 Wilshire Blvd., Suite 903, Los Angeles, CA 90010.
Date Revoked: April 18, 2010.
Reason: Failed to maintain a valid bond.

License Number: 018706NF.
Name: Epic International Transport, LLC.
Address: 6048 Lido Lane, Long Beach, CA 90803.
Date Revoked: April 9, 2010.
Reason: Surrendered license voluntarily.

License Number: 019271NF.
Name: Xima Freight Services, Inc.
Address: 1525 NW 82nd Avenue, Miami, FL 33126.
Date Revoked: April 23, 2010.
Reason: Failed to maintain valid bonds.

License Number: 019374NF.
Name: Agents' House International, Inc.
Address: 2120 Dennis Street, Suite 301, Jacksonville, FL 32204.
Dates Revoked: April 3, 2010 and April 11, 2010.
Reason: Failed to maintain valid bonds.

License Number: 019840N.
Name: West Point Relocation.
Address: 10505 Glenoaks Blvd., Pacoima, CA 91331.
Date Revoked: April 14, 2010.
Reason: Failed to maintain a valid bond.

License Number: 020153NF.
Name: Sea Global Logistics, Inc.
Address: 690 Knox Street, Suite 220, Torrance, CA 90502.
Date Revoked: April 2, 2010.
Reason: Failed to maintain valid bonds.

License Number: 021360N.
Name: Profes NWFS, Inc. dba New World Freight System dba Cargo Alliance Service.
Address: 1071 Sneath Lane, San Bruno, CA 94066.
Date Revoked: March 14, 2010.
Reason: Surrendered license voluntarily.

License Number: 021418F.
Name: Asbun International Freight, Inc.
Address: 8140 NW. 74th Avenue, Suites 13 & 14, Medley, FL 33166.
Date Revoked: March 10, 2010.
Reason: Failed to maintain a valid bond.

License Number: 021975N.
Name: Adora International LLC dba Adora.
Address: 16813 FM 1485, Conroe, TX 777306.
Date Revoked: April 20, 2010.
Reason: Surrendered license voluntarily.

Sandra L. Kusumoto,
Director, Bureau of Certification and Licensing.

[FR Doc. 2010–10753 Filed 5–6–10; 8:45 am]
BILLING CODE 6730–01–P

FEDERAL RESERVE SYSTEM

Notice of Proposals to Engage in Permissible Nonbanking Activities or to Acquire Companies that are Engaged in Permissible Nonbanking Activities

The companies listed in this notice have given notice under section 4 of the Bank Holding Company Act (12 U.S.C. 1843) (BHC Act) and Regulation Y (12 CFR Part 225) to engage *de novo*, or to acquire or control voting securities or assets of a company, including the companies listed below, that engages either directly or through a subsidiary or other company, in a nonbanking activity that is listed in § 225.28 of Regulation Y (12 CFR 225.28) or that the Board has determined by Order to be closely related to banking and permissible for bank holding companies. Unless otherwise noted, these activities will be conducted throughout the United States.

Each notice is available for inspection at the Federal Reserve Bank indicated. The notice also will be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing on the question whether the proposal complies with the standards of section 4 of the BHC Act. Additional information on all bank holding companies may be obtained from the National Information Center website at *www.ffiec.gov/nic/*.

Unless otherwise noted, comments regarding the applications must be received at the Reserve Bank indicated or the offices of the Board of Governors not later than May 28, 2010.

A. Federal Reserve Bank of Philadelphia (Michael E. Collins, Senior Vice President) 100 North 6th Street, Philadelphia, Pennsylvania 19105–1521:

1. The Bancorp, Inc., Wilmington, Delaware; to engage *de novo* through its subsidiary, Bancorp Federal Savings Bank, Mount Laurel, New Jersey, in operating a savings association, pursuant to section 225.28(b)(4)(ii) of Regulation Y.

Board of Governors of the Federal Reserve System, April 29, 2010.

Robert deV. Frierson,

Deputy Secretary of the Board.

[FR Doc. 2010–10779 Filed 5–6–10; 8:45 am]

BILLING CODE 6210–01–S

GOVERNMENT ACCOUNTABILITY OFFICE

Board of Governors of the Patient-Centered Outcomes Research Institute (PCOR)

AGENCY: Government Accountability Office (GAO).

ACTION: Notice on letters of nomination.

SUMMARY: The Patient Protection and Affordable Care Act gave the Comptroller General of the United States responsibility for appointing 19 members to the Board of Governors of the Patient-Centered Outcomes Research Institute. In addition, the Directors of the Agency for Healthcare Research and Quality and the National Institutes of Health, or their designees, are members of the Board. The Comptroller General is required to make appointments not later than 6 months after the date of enactment of the Act. Board members must meet the qualifications listed in Section 6301 of the Act. For these appointments, I am announcing the following: Letters of nomination and resumes should be submitted by June 30, 2010 to ensure adequate opportunity for review and consideration of nominees prior to appointment. Letters of nomination and resumes can be sent to either the e-mail or mailing address listed below.

ADDRESSES: Nominations can be submitted by either of the following:

E-mail: HCWorkforce@gao.gov.

Mail: GAO Health Care, Attention: National Health Care Workforce Commission Nominations, 441 G Street, NW., Washington, DC 20548.

FOR FURTHER INFORMATION CONTACT: GAO: Office of Public Affairs, (202) 512–4800.

[Sec. 5101, Pub. L. 111–148]

Gene L. Dodaro,

Acting Comptroller General of the United States.

[FR Doc. 2010–10826 Filed 5–6–10; 8:45 am]

BILLING CODE 1610–02–M

GOVERNMENT ACCOUNTABILITY OFFICE

National Health Care Workforce Commission

AGENCY: Government Accountability Office (GAO).

ACTION: Notice on letters of nomination.

SUMMARY: The Patient Protection and Affordable Care Act gave the Comptroller General of the United States responsibility for appointing 15 members to the National Health Care Workforce Commission, with appointments to be made not later than September 30th, 2010. Qualifications of the commissioners are identified in Section 5101 of the Act. For these appointments, I am announcing the following: Letters of nomination and resumes should be submitted by June 30th, 2010 to ensure adequate opportunity for review and consideration of nominees prior to appointment of members. Letters of nomination and resumes can be sent to either the e-mail or mailing address listed below.

ADDRESSES: Nominations can be submitted by either of the following: *E-mail: HCWorkforce@gao.gov. Mail:* GAO Health Care, Attention: National Health Care Workforce Commission Nominations, 441 G Street, NW., Washington, DC 20548.

FOR FURTHER INFORMATION CONTACT: *GAO:* Office of Public Affairs, (202) 512–4800.

[Section 5101, Pub. L. 111–148]

Gene L. Dodaro,

Acting Comptroller General of the United States.

[FR Doc. 2010–10829 Filed 5–6–10; 8:45 am]

BILLING CODE 1610–02–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Meeting of the National Vaccine Advisory Committee

AGENCY: Department of Health and Human Services, Office of the Secretary, Office of Public Health and Science.

ACTION: Notice.

SUMMARY: As stipulated by the Federal Advisory Committee Act, the Department of Health and Human Services (HHS) is hereby giving notice that the National Vaccine Advisory Committee (NVAC) will hold a meeting. The meeting is open to the public. Pre-registration is required for both public attendance and comment. Individuals who wish to attend the meeting and/or participate in the public comment session should either e-mail *nvpo@hhs.gov* or call 202–690–5566 to register.

DATES: The meeting will be held on June 2, 2010, from 9 a.m. to 5:30 p.m., and June 3, 2010, from 8:30 a.m. to 5:30 p.m.

ADDRESSES: Department of Health and Human Services; Hubert H. Humphrey Building, Room 800; 200 Independence Avenue, SW., Washington, DC 20201.

FOR FURTHER INFORMATION CONTACT: National Vaccine Program Office, Department of Health and Human Services, Room 715–H, Hubert H. Humphrey Building, 200 Independence Avenue, SW., Washington, DC 20201. Phone: (202) 690–5566; Fax: (202) 260–1165; e-mail: *nvpo@hhs.gov.*

SUPPLEMENTARY INFORMATION: Pursuant to Section 2101 of the Public Health Service Act (42 U.S.C. 300aa–1), the Secretary of Health and Human Services was mandated to establish the National Vaccine Program to achieve optimal prevention of human infectious diseases through immunization and to achieve optimal prevention against adverse reactions to vaccines. The National Vaccine Advisory Committee was established to provide advice and make recommendations to the Director of the National Vaccine Program, on matters related to the Program's responsibilities. The Assistant Secretary for Health serves as Director of the National Vaccine Program.

Topics to be discussed at the meeting include the draft National Vaccine Plan, adult immunization recommendations, vaccine financing, 2009 H1N1 influenza outbreak, vaccine safety, and other related issues. The meeting agenda will be posted on the Web site: *http://www.hhs.gov/nvpo/nvac* at least one week prior to the meeting. Public attendance at the meeting is limited to space available. Individuals who plan to attend and need special assistance, such as sign language interpretation or other reasonable accommodations, should notify the office at the address/phone listed above at least one week prior to the meeting. Members of the public will have the opportunity to provide comments at the meeting. Public

comment will be limited to five minutes per speaker. Individuals who would like to submit written statements should e-mail or fax their comments to the National Vaccine Program Office at least five business days prior to the meeting. Those wishing to register to attend the meeting may do so by sending an e-mail to *nvpo@hhs.gov* or by calling 202–690–5566 and providing name, e-mail address and organization.

Dated: April 30, 2010.

Bruce Gellin,

Deputy Assistant Secretary for Health, Director, National Vaccine Program Office.

[FR Doc. 2010–10750 Filed 5–6–10; 8:45 am]

BILLING CODE 4150–44–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

Proposed Information Collection Activity; Comment Request

Proposed Projects

Title: Division of Unaccompanied Children's Services (DUCS) Request for Specific Consent.

OMB No.: New Collection.

Description: The William Wilberforce Trafficking Victims Protection Reauthorization Act of 2008 (TVPRA of 2008), Public Law 110–457 was enacted into law December 23, 2008. Section 235(d) directs the Secretary of HHS to grant or deny requests for specific consent for unaccompanied alien children in HHS custody who seek to invoke the jurisdiction of a State court for a dependency order and who also seek to invoke the jurisdiction of a State court to determine or alter his or her custody status or release from ORR. These requests can be extremely time sensitive since a child must ask a State court for dependency before turning 18 years old.

In developing procedures for collecting the necessary information from unaccompanied alien children, their attorneys, or other representatives to allow HHS to approve or deny consent requests, ORR/DUCS devised a form. Specifically, the form asks the requestor for his/her identifying information, basic identifying information on the unaccompanied alien child, the name of the HHS-funded facility where the child is in HHS custody and care, the name of the court and its location, and the kind of request (*e.g.,* for a change in custody, *etc.*). The form also asks that the unaccompanied alien child's attorney or authorized representative attach a Notice of Representation, which is an approved Federal government agency form used for immigration procedures that authorizes the attorney to act on behalf of the child (*i.e.,* G–28, EOIR–28, EOIR–29), or any other form of authorization to act on behalf of the unaccompanied alien child.

Respondents: Attorneys, accredited legal representatives, or others authorized to act on behalf of an unaccompanied alien child.

ANNUAL BURDEN ESTIMATES

Instrument	Number of respondents	Number of responses per respondent	Average burden hours per response	Total burden hours
ORR–0132	72	1	0.33	23.76

Estimated Total Annual Burden Hours: 23.76.

In compliance with the requirements of Section 506(c)(2)(A) of the Paperwork Reduction Act of 1995, the Administration for Children and Families is soliciting public comment on the specific aspects of the information collection described above. Copies of the proposed collection of information can be obtained and comments may be forwarded by writing to the Administration for Children and Families, Office of Administration, Office of Information Services, 370 L'Enfant Promenade, SW., Washington, DC 20447, Attn: ACF Reports Clearance Officer. E-mail address: *infocollection@acf.hhs.gov.* All requests should be identified by the title of the information collection.

The Department specifically requests comments on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Consideration will be given to comments and suggestions submitted within 60 days of this publication.

Dated: May 4, 2010.

Robert Sargis,

Reports Clearance Officer.

[FR Doc. 2010–10784 Filed 5–6–10; 8:45 am]

BILLING CODE 4184–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

Proposed Information Collection Activity; Comment Request

Proposed Projects

Title: Request for State Data Needed to Determine Amount of a Tribal Family Assistance Grant.

OMB No.: 0970–0173.

Description: 42 U.S.C. 612 (Section 412 of the Social Security Act) gives federally recognized Indian Tribes the opportunity to apply to operate a Tribal Temporary Assistance for Needy Families (TANF) program. The Act specifies that the Secretary shall use State-submitted data to determine the amount of the grant to the Tribe. This form (letter) is used to request those data from the States. ACF is proposing to extend this information collection without change.

Respondents: States that have Indian Tribes applying to operate a TANF program.

ANNUAL BURDEN ESTIMATES

Instrument	Number of respondents	Number of responses per respondent	Average burden hours per response	Total burden hours
Request for State Data Needed to Determine the Amount of Tribal Family Assistance Grant	15	1	42	630

Estimated Total Annual Burden Hours: 630.

In compliance with the requirements of Section 506(c)(2)(A) of the Paperwork Reduction Act of 1995, the Administration for Children and Families is soliciting public comment on the specific aspects of the information collection described above. Copies of the proposed collection of information can be obtained and comments may be forwarded by writing to the Administration for Children and Families, Office of Administration, Office of Information Services, 370 L'Enfant Promenade, SW., Washington, DC 20447, *Attn:* ACF Reports Clearance Officer. *E-mail address: infocollection@acf.hhs.gov.* All requests should be identified by the title of the information collection.

The Department specifically requests comments on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Consideration will be given to comments and suggestions submitted within 60 days of this publication.

Dated: May 4, 2010.

Robert Sargis,

Reports Clearance Officer.

[FR Doc. 2010–10808 Filed 5–6–10; 8:45 am]

BILLING CODE 4184–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

Proposed Information Collection Activity; Comment Request

Proposed Projects

Title: Guidance for Tribal TANF.

OMB No.: 0970–0157.

Description: 42 U.S.C. 612 (Section 412 of the Social Security Act) requires each Indian Tribe that elects to administer and operate a TANF program to submit a TANF Tribal Plan. The TANF Tribal Plan is a mandatory statement submitted to the Secretary by the Indian Tribe, which consists of an outline of how the Indian Tribes TANF program will be administered and operated. It is used by the Secretary to determine whether the plan is approvable and to determine that the Indian Tribe is eligible to receive a TANF assistance grant. It is also made available to the public.

Respondents: Indian Tribes applying to operate a TANF program.

ANNUAL BURDEN ESTIMATES

Instrument	Number of respondents	Number of responses per respondent	Average burden hours per response	Total burden hours
Request for State Data Needed to Determine the Amount of a Tribal Family Assistance Grant	20	1	68	1,360

Estimated Total Annual Burden Hours: 1,360.

In compliance with the requirements of Section 506(c)(2)(A) of the Paperwork Reduction Act of 1995, the Administration for Children and Families is soliciting public comment on the specific aspects of the information collection described above. Copies of the proposed collection of information can be obtained and comments may be forwarded by writing to the Administration for Children and Families, Office of Administration, Office of Information Services, 370 L'Enfant Promenade, SW., Washington, DC 20447, Attn: ACF Reports Clearance Officer. E-mail address: *infocollection@acf.hhs.gov.* All requests should be identified by the title of the information collection.

The Department specifically requests comments on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Consideration will be given to comments and suggestions submitted within 60 days of this publication.

Dated: May 4, 2010.

Robert Sargis,

Reports Clearance Officer.

[FR Doc. 2010–10807 Filed 5–6–10; 8:45 am]

BILLING CODE 4184–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration on Aging

Agency Information Collection Activities; Submission for OMB Review; Comment Request; Extension of Current Program Announcement and Grant Application Template for Older Americans Act Title IV Discretionary Grants Program

AGENCY: Administration on Aging, HHS.

ACTION: Notice.

SUMMARY: The Administration on Aging (AoA) is announcing that the proposed collection of information listed below has been submitted to the Office of Management and Budget (OMB) for review and clearance under the Paperwork Reduction Act of 1995.

DATES: Submit written comments on the collection of information by June 7, 2010.

ADDRESSES: Submit written comments on the collection of information by fax 202.395.6974 to the OMB Desk Officer for AoA, Office of Information and Regulatory Affairs, OMB.

FOR FURTHER INFORMATION CONTACT: Lori Stalbaum, (202)357–3452 or *lori.stalbam@aoa.hhs.gov*.

SUPPLEMENTARY INFORMATION: In compliance with 44 U.S.C. 3507, AoA has submitted the following proposed collection of information to OMB for review and clearance.

AoA is requesting an extension of the currently approved Program Announcement and Application Instructions Template for the Older Americans Act Title IV Discretionary Grants Program. This template provides the requirements and instructions for the submission of an application for discretionary grants funding opportunities. The template may be found on the AoA Web site at *http://www.aoa.gov/AoARoot/Grants/Funding/overview.aspx*.

AoA estimates the burden of this collection of information as follows:

Frequency: 10–15 Title IV Program Announcements published annually.

Respondents: State agencies, public agencies, private non-profit agencies, institutions of higher education, and organizations including tribal organizations.

Estimated Number of Responses: 300 annually.

Total Estimated Burden Hours: 14,400.

Dated: May 4, 2010.

Kathy Greenlee,

Assistant Secretary for Aging.

[FR Doc. 2010–10910 Filed 5–6–10; 8:45 am]

BILLING CODE 4154–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Substance Abuse and Mental Health Services Administration

Agency Information Collection Activities: Submission for OMB Review; Comment Request

Periodically, the Substance Abuse and Mental Health Services Administration (SAMHSA) will publish a summary of information collection requests under OMB review, in compliance with the Paperwork Reduction Act (44 U.S.C. Chapter 35). To request a copy of these documents, call the SAMHSA Reports Clearance Officer on (240) 276–1243.

Project: Cross-site Evaluation of the Garrett Lee Smith Memorial Suicide Prevention and Early Intervention Programs (OMB No. 0930–0286)—Revision

The Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Mental Health Services (CMHS) will continue to conduct the cross-site evaluation of the Garrett Lee Smith Memorial Youth Suicide Prevention and Early Intervention State/Tribal Programs and the Garrett Lee Smith Memorial Youth Suicide Prevention Campus Programs. The data collected through the cross-site evaluation addresses four stages of program activity: (1) The context stage includes a review of program plans, such as grantee's target population, target region, service delivery mechanisms, service delivery setting, types of program activities to be funded and evaluation activities; (2) the product stage describes the prevention strategies that are developed and utilized by grantees; (3) the process stage assesses progress on key activities and milestones related to implementation of program plans; and (4) the impact stage assesses the impact of the program on early identification, referral for services and service follow up of youth at risk.

Additionally, to obtain a comprehensive understanding of the integration of community-based behavioral health services with services provided by college or university campuses, SAMHSA will conduct case studies of four exemplary Campus suicide prevention programs. Currently, case studies of two campus grantees are underway. The goal of the Campus Case Studies is to understand how a public health approach is successfully applied as a model for campus suicide prevention efforts, and will explore, in a systematic manner: The suicide prevention related infrastructures and supports (*e.g.,* clinical and non-clinical) that exist on selected GLS-funded campuses; the various student-level factors that are related to suicide prevention efforts (*e.g.,* protective factors, coping strategies, social norms, and facilitators and barriers to student access and receipt of behavioral healthcare); campus interdepartmental collaboration and the relationship between various efforts to promote student mental health and wellness; and the extent to which the campus infrastructures and supports promote and address these factors.

To date, 86 State/Tribal grants and 93 Campus grants have participated in the cross-site evaluation, since FY2007. Currently, 48 State/Tribal grants and 38 Campus grants are participating in the cross-site evaluation. Data will continue to be collected from suicide prevention program staff (*e.g.* project directors, evaluators), key program stakeholders (*e.g.* State/local officials, child-serving agency directors, gatekeepers, mental health providers, and campus administrators), training participants, college students, and campus faculty/staff through FY2012.

Since the State/Tribal grantees differ from the campus grantees in programmatic approaches, specific data collection activities also vary by type of program. The following describes the specific data collection activities and data collection instruments to be used across State/Tribal and Campus grantees for the cross-site evaluation and the specific data collection instruments to be used by selected Campus grantees for the Campus Case Studies. While most of the data collection instruments described below are revised versions of instruments that have previously received OMB approval (OMB No. 0930–0286 with Expiration Date: May 2010) and are currently in use, the Training Utilization and Preservation—Survey (TUP–S) for State/Tribal grantees and the Training Exit Survey for Campus grantees (TES–C) are proposed as new instruments. The addition of these two new data collection activities, the inclusion of the Campus Case studies, and an overall growth in number of grants for both the State/Tribal and Campus programs has increased the burden associated with the cross-site evaluation. A summary table of number of respondents and

respondent burden has also been included.

Data Collection Activities for State/Tribal Grantees

For State/Tribal grantees, the Prevention Strategies Inventory State/Tribal (PSI ST), Training Exit Survey State/Tribal (TES ST), Referral Network Survey (RNS) and Training Utilization and Preservation—Interview (TUP–I) described below are revised versions of instruments that previously received OMB approval (OMB No. 0930–0286 with Expiration Date: May 2010) and are currently in use. The Training Utilization and Preservation—Survey (TUP–S) is proposed as a new data collection instrument.

• *Prevention Strategies Inventory-State/Tribal (PSI ST)—Revised.* The Prevention Strategies Inventory will collect information on the suicide prevention strategies that grantees have developed and utilized. Prevention strategies include outreach and awareness, gatekeeper training, assessment and referral training for mental health professionals and hotline staff, lifeskills development programs, screening programs, hotlines and helplines, means restriction, policies and protocols for intervention and postvention, coalitions and partnerships, and direct services and traditional healing practices. Baseline data will be collected from the State/Tribal grantees at the beginning of their grant cycle. Thereafter, they will complete the PSI ST on a quarterly basis over the duration of their grant period. Baseline data will be collected on information on the types of prevention strategies grantees have developed and utilized, and the follow-up data collection asks the grantees to update the information they have provided on a quarterly basis over the period of the grant. On average, 48 State/Tribal grantees will fill out the PSI ST per year. One respondent from each site will be responsible for completing the survey. The survey will take approximately 45 minutes; however, the number of products, services and activities implemented under each strategy will determine the number of items each respondent will complete. The PSI ST primarily has multiple choice questions with several open-ended questions.

• *Training Exit Survey State-Tribal Version (TES ST)—Revised.* The TES ST will be administered to all participants in suicide prevention training activities immediately following their training experience in order to assess the content of the training, the participants' intended use of the skills and knowledge learned and satisfaction with the training experience. The survey will also contain modules with questions tailored to specific types of training. It is estimated that approximately 94,848 trainees per year will respond to the TES ST. The questions on the TES ST are multiple-choice, Likert-scale, and open-ended. The survey includes about 33 items and will take approximately 10 minutes to complete.

• *Training Exit Survey Cover Page State/Tribal Version (TES CP)—Revision.* State and Tribal grantees are required to report aggregate training participant information for all training conducted as part of their suicide prevention programs. These data are aggregated from existing data sources, some of which are attendance sheets, management information systems, etc. Grantees are responsible for aggregating these data and submitting to the cross-site evaluation team using the TES CP.

• *Training Utilization and Preservation Survey (TUP–S)—New.* The Training Utilization and Preservation Survey (TUP–S) is a quantitative, computer-assisted telephone interview that will be administered to a random sample of trainees two months following the training. The TUP–S will assess trainee knowledge retention and gatekeeper behavior, particularly behavior related to identifying youth at risk. The TUP–S will ask trainees to provide demographic information about individuals they have identified at risk, information about the subsequent referrals or supports provided by the trainee, and any available information about services accessed by the at-risk individual. An average of 2000 participants per year will be sampled. The TUP–S includes 26 items and will take approximately 10 minutes to complete.

• *Training Utilization and Preservation Key Informant Interview (TUP–1)—Revision.* The TUP–I is a qualitative follow-up interview that is targeted towards locally developed and understudied standardized training curricula as well as towards particular understudied gatekeeper trainee populations. The TUP–I will be administered to respondents two months following the training experience to assess whether the suicide prevention knowledge, skills or techniques learned through training were utilized and had an impact on youth. On average, the TUP–I will be administered to 100 respondents per year. The interviews are semistructured and open ended. The TUP includes 22 items and will take approximately 40 minutes to complete.

• *Referral Network Survey (RNS)—Revision.* The Referral Network Survey (RNS) will be administered to representatives of youth-serving organizations or agencies that form referral networks supporting youth identified at risk. The RNS examines how collaboration and integration are used for sharing and transferring knowledge, resources, and technology among State/Tribal Program agencies and organizational stakeholders, how these networks influence referral mechanisms and service availability, policies and protocols regarding follow-up for youths who have attempted suicide and who are at risk for suicide, and access to electronic databases. Most State/Tribal grantees will select a single referral network for this survey, the average size of the network is 11 agencies/organizations and there will be 2 respondents per agency. The RNS will be administered to referral networks on an annual basis over the period of the grant. On average, 1056 respondents per year will complete the RNS. Questions on the RNS are multiple-choice, Likert-scale, and open-ended. The RNS includes 28 items and will take approximately 30 minutes to complete.

• *Early Identification, Referral and Follow up Aggregate Screening Form*—State/Tribal grantees are also required to report aggregate screening information for all youth screened as part of their suicide prevention programs. These data are aggregated from existing data sources. Grantees are responsible for aggregating these data and submitting to the cross-site evaluation team using the Early Identification, Referral and Follow up Aggregate Screening Form.

• *Early Identification, Referral and Follow Up Analyses*—State/Tribal grantees are required to share existing data with the cross-site evaluation team on the number of youth identified at risk as a result of early identification activities, referred for services, and who present for services.

Data Collection Activities for Campuses

For Campus grantees, the Prevention Strategies Inventory-Campus Baseline and Follow Up (PSI C), Suicide Prevention Exposure, Awareness and Knowledge Survey—Student Version (SPEAKS–S), Suicide Prevention Exposure, Awareness and Knowledge Survey—Faculty/Staff Version (SPEAKS–FS) and Campus Infrastructure Interviews (CIFI) are revised versions of instruments that previously received OMB approval (OMB No. 0930–0286 with Expiration Date: May 2010) and are currently in use, and the Training Exit Survey—Campus (TES C) is proposed as a new data collection instrument.

• *Prevention Strategies Inventory-Campus (PSI C)—Revision.* The Prevention Strategies Inventory will collect information on the suicide prevention strategies that grantees have developed and utilized. Prevention strategies include outreach and awareness, gatekeeper training, assessment and referral training for mental health professionals and hotline staff, lifeskills development activities, screening programs, hotlines and helplines, means restriction, policies and protocols for intervention and postvention, and coalitions and partnerships. The Campus grantees will first complete collecting baseline data. Thereafter, they will collect follow-up data on a quarterly basis over the duration of their grant period. Baseline data will be collected on information on the types of prevention strategies grantees have developed and utilized, and the follow-up data collection asks the grantees to update the information they have provided on a quarterly basis over the period of the grant. On average, 38 Campus grantees will fill out the PSI C per year. One respondent from each site will be responsible for completing the survey. The survey will take approximately 45 minutes. However, the number of products, services and activities implemented under each strategy will determine the number of items to complete. The survey primarily has multiple choice questions with several open-ended questions.

• *Training Exit Survey Campus Version (TES C)—New.* The TES C will be administered to all participants in suicide prevention training activities immediately following their training experience in order to assess the content of the training, the participants' intended use of the skills and knowledge learned, and satisfaction with the training experience. The survey will also contain modules with questions tailored to specific types of training. It is estimated that approximately 23,712 trainees per year will respond to the Training Exit Survey. The questions on the TES C are multiple-choice, Likert-scale, and open-ended. The survey includes about 33 items and will take approximately 10 minutes to complete.

• *Training Exit Survey Cover Page Campus Version (TES CP)—Revision.* State and Tribal grantees are required to report aggregate training participant information for all training conducted as part of their suicide prevention programs. These data are aggregated from existing data sources, some of which are attendance sheets, management information systems, etc. Grantees are responsible for aggregating these data and submitting to the cross-site evaluation team using the TES CP.

• *Suicide Prevention Exposure, Awareness and Knowledge Survey—Student Version (SPEAKS–S)—Revision.* This survey will examine: The exposure of campus populations to suicide prevention initiatives; awareness of appropriate crisis interventions, supports, services, and resources for mental health seeking; knowledge of myths and facts related to suicide and suicide prevention; perceived and personal stigma related to depression and mental health seeking; and behaviors related to seeking help and referring for mental health services. This survey will be administered annually over the grant period. It is estimated that 7,600 students per year will respond to the SPEAKS S. The SPEAKS–S is Web-based and includes multiple-choice, Likert-scale and true/false questions. The SPEAKS–Student Version includes 85 items and will take approximately 25 minutes to complete.

• *Suicide Prevention Exposure, Awareness and Knowledge Survey—(SPEAKS FS)—Revision.* The SPEAKS–FS assesses the exposure, awareness and knowledge of suicide prevention activities among faculty/staff on campus as a result of the suicide prevention program. Questions include whether faculty/staff have been exposed to suicide prevention materials, their agreement with myths and facts about suicide, and the availability of resources to provide assistance to those at risk for suicide. This survey will be administered annually over the grant period. It is estimated that 1,900 faculty/staff per year will respond to the SPEAKS FS. The SPEAKS–FS is Web-based and includes multiple-choice, Likert-scale and true/false questions. The survey includes 54 items and will take approximately 15 minutes to complete.

• *Campus Infrastructure Interviews (CIFI)—Revision.* CIFI is designed to gather information around campus infrastructure, program, policy, and planning related to suicide prevention; it involves key informant interviews conducted by the cross-site evaluation team via teleconference for each campus twice during the life of the grant. These semistructured interviews are conducted with up to five site representatives to gather information from multiple and varied perspectives on campus-based infrastructure development around suicide prevention activities. These representatives include: (1) Administrator, (2) Student Leader, (3) Counseling Center Staff, (4) Faculty/Staff-human services department, and (5) Faculty/Staff-non-human service department. Questions on the Campus Infrastructure Interview include whether respondents are aware of suicide prevention activities, what the campus culture is related to suicide prevention, and what specific efforts are in place to prevent suicide among the campus population. Questions will include close-ended background questions, with the remaining questions being open-ended and semi-structured. It is estimated that on average 64 respondents per year will respond to CIFI. The Campus Infrastructure Interviews include 29 items and will take approximately 60 minutes to complete.

Data Collection Activities for Campus Case Studies

For Campus Case Studies, the instruments described below are currently used by 2 Campus grantees. These instruments are proposed for 4 additional Campus grantees. The Campus Case Studies will take place over the period of the grant.

• *Student Focus Group Moderator's Guide.* This component will assess student risk and protective factors related to mental health, help-seeking behaviors, and knowledge of prevention activities on campus and their perceived effectiveness. This will help researchers more fully understand student-level factors in relation to population-level factors addressed by the SPEAKS–S. Questions address stressors that different groups of students face while in college, barriers to seeking help, attitudes and stigma related to seeking help, and the accessibility of the campus counseling center. Six focus groups will be conducted on each campus twice over the data collection period. The following groups of students will potentially be represented in the focus groups, as decided by the campus: (1) First-year students, (2) athletes, (3) international students, (4) Lesbian, Gay, Bisexual, and Transgender (LGBT) students, (5) Greek life students, (6) graduate students, and (7) residential advisors/peer educators. Recruitment will be conducted by campus project staff. Focus groups will include a maximum of 9 students. It is estimated that on average 432 students will participate in focus groups. Groups will last approximately 90 minutes.

• *Faculty/Staff Focus Group Moderator's Guide.* The faculty and staff focus groups will assess the campus' approach to prevention, attitudes and stigma around student mental health and wellness on campus, campus infrastructure supports for students who need mental health help, and the general campus climate around mental

health and wellness. Faculty and staff will also describe their knowledge of prevention activities on campus and their perceived effectiveness of these efforts. Local campus staff will recruit appropriate respondents for the faculty and staff focus groups to include a maximum of 9 respondents per group. Two faculty focus groups and one staff focus group will be conducted on each campus twice over the period of data collection. It is estimated that 216 faculty/staff will participate in focus groups. The groups will last approximately 90 minutes.

• *Case Study Key Informant Interviews (7 versions).* The Case Study Key Informant Interviews (CSIs) include 7 qualitative interview versions: (1) Administrator, (2) Counseling Staff, (3) Coalition Member—Faculty, (4) Prevention Staff, (5) Case Finder, (6) Campus Police, and (7) Student Leader. Local project staff will be responsible for identifying appropriate respondents for each CSI version and scheduling the interview to occur during site visits by the case study team. Fourteen individuals from each of the campus sites will be selected as key informants to participate in the CSIs in each of the two stages of the GLS Campus Case Studies. Questions on the CSIs include whether respondents are aware of suicide prevention activities, what the campus culture is related to suicide prevention, and what specific efforts are in place to prevent suicide among the campus population. Items are formatted as open-ended and semi-structured questions. The CSIs include 16 to 21 items and will take approximately 60 minutes to complete. On the second site visit, the case study team will incorporate preliminary findings from the case studies in the interviews, which may be modified to some extent to collect more comprehensive information and gather feedback from local key informants surrounding the context of the preliminary findings. It is estimated that the CSI will be administered to 112 respondents. The CSIs for the second site visit will last 60 minutes.

In addition to the above described data collection activities, data from existing sources (*i.e.,* management information systems (MIS), administrative records, case files, etc.) will continue to be analyzed across grantee sites to support the impact stage of the cross-site evaluation. For the cross-site evaluation of the Campus programs, existing program data related to the number of students who are at risk for suicide, the number who seek services, and the type of services received are analyzed to determine the impact of Campus program activities on the student and campus populations. Because this information is obtained through existing sources, data collection instruments were not developed as part of the cross-site evaluation and no identifiable respondents exist; therefore no respondent burden has been estimated.

Internet-based technology will continue to be used for collecting data via Web-based surveys, and for data entry and management. The average annual respondent burden is estimated below. The estimate reflects the average annual number of respondents, the average annual number of responses, the time it will take for each response, and the average annual burden. While the different cohorts of grantees finish their grants at different times, we have assumed that new cohorts will replace previous cohorts. Therefore, the number of grantees in each year is assumed to be constant.

TABLE—ESTIMATES OF ANNUALIZED HOUR BURDEN

Measure name	Number of respondents	Number of responses/respondent	Hours/response	Response burden (in hours)
Prevention Strategies Inventory—State Tribal (PSI–ST)	48	4	0.75	144
Training Exit Survey State/Tribal (TES–ST)	94,848	1	0.17	16,125
Training Utilization and Penetration Survey (TUP–S)	2,000	1	0.25	500
Training Utilization and Penetration Interview (TUP–I)	100	1	0.67	67
Referral Network Survey (RNS)	1,024	1	0.67	687
Early Identification, Referral and Follow Up Analysis (EIRF)	48	4	1	192
Early Identification, Referral and Follow Up Aggregate Screening Form (EIRF–S)	48	4	0.33	64
Training Exit Survey Cover Page State/Tribal (TES–CP–ST)	48	4	0.33	64
Prevention Strategies Inventory-Campus (PSI–C)	38	4	0.75	114
Training Exit Survey Campus (TES–C)	23,712	1	0.17	4,032
Suicide Prevention Exposure, Awareness and Knowledge Survey-Student Version (SPEAKS–S)	7,600	1	0.42	3,192
Suicide Prevention Exposure, Awareness and Knowledge Survey-Faculty/Staff (SPEAKS–FS)	1,900	1	0.25	475
Campus Infrastructure Interview (CIFI) for Student	38	1	0.75	29
Campus Infrastructure Interview (CIFI) for Faculty	76	1	0.75	57
Campus Infrastructure Interview (CIFI) for Administrator	38	1	0.75	29
Campus Infrastructure Interview (CIFI) for Counselor	38	1	0.75	29
Training Exit Survey Cover Page Campus (TES–CP–C)	38	4	0.33	51
MIS Data Abstraction	38	4	0.33	51
Focus Group—Student Version	216	1	1.5	324
Focus Group—Faculty Version	72	1	1.5	108
Focus Group—Staff Version	36	1	1.5	54
Interview—Student Leader Version	8	1	1	8
Interview—Case Finder Version	4	1	1	4
Interview—Faculty Version	8	1	1	8
Interview—Campus Police Version	8	1	1	8
Interview—Counseling Staff Version	8	1	1	8
Interview—Prevention Staff Version	12	1	1	12
Interview—Administrator Version	8	1	1	8
Total	132,060			26,444

Written comments and recommendations concerning the proposed information collection should be sent by June 7, 2010 to: SAMHSA Desk Officer, Human Resources and Housing Branch, Office of Management and Budget, New Executive Office Building, Room 10235, Washington, DC 20503; due to potential delays in OMB's receipt and processing of mail sent through the U.S. Postal Service, respondents are encouraged to submit comments by fax to: 202–395–6974.

Dated: April 28, 2010.

Elaine Parry,

Director, Office of Program Services.

[FR Doc. 2010–10907 Filed 5–6–10; 8:45 am]

BILLING CODE 4162–20–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Medicare & Medicaid Services

[Document Identifier CMS–901A and 901D]

Agency Information Collection Activities: Proposed Collection; Comment Request

AGENCY: Centers for Medicare & Medicaid Services, HHS.

In compliance with the requirement of section 3506(c)(2)(A) of the Paperwork Reduction Act of 1995, the Centers for Medicare & Medicaid Services (CMS) is publishing the following summary of proposed collections for public comment. Interested persons are invited to send comments regarding this burden estimate or any other aspect of this collection of information, including any of the following subjects: (1) The necessity and utility of the proposed information collection for the proper performance of the agency's functions; (2) the accuracy of the estimated burden; (3) ways to enhance the quality, utility, and clarity of the information to be collected; and (4) the use of automated collection techniques or other forms of information technology to minimize the information collection burden.

1. *Type of Information Collection Request:* Extension of a currently approved collection; *Title of Information Collection:* Federal Qualification Application (42 CFR 417.140) and Medicare Health Care Prepayment Plan Application (42 CFR 417.800); *Use:* The application is the collection form used to obtain information to determine if an applicant meets the regulatory requirements to enter into a contract with CMS as a Federal Qualified health maintenance organization (HMO) or to provide health benefits to Medicare beneficiaries as a Medicare Health Care Prepayment Plan contractor. *Form Number:* CMS–901A & 901D (OMB#: 0938–0470); *Frequency:* Once; *Affected Public:* Business or other for-profits and Not-for-profit institutions; *Number of Respondents:* 20; *Total Annual Responses:* 20; *Total Annual Hours:* 800 (For policy questions regarding this collection contact Heidi Arndt at 410–786–1607. For all other issues call 410–786–1326.)

To obtain copies of the supporting statement and any related forms for the proposed paperwork collections referenced above, access CMS' Web site at *http://www.cms.hhs.gov/PaperworkReductionActof1995,* or E-mail your request, including your address, phone number, OMB number, and CMS document identifier, to *Paperwork@cms.hhs.gov,* or call the Reports Clearance Office on (410) 786–1326.

In commenting on the proposed information collections please reference the document identifier or OMB control number. To be assured consideration, comments and recommendations must be submitted in one of the following ways by *July 6, 2010:*

1. *Electronically.* You may submit your comments electronically to *http://www.regulations.gov*. Follow the instructions for "Comment or Submission" or "More Search Options" to find the information collection document(s) accepting comments.

2. *By regular mail.* You may mail written comments to the following address: CMS, Office of Strategic Operations and Regulatory Affairs, Division of Regulations Development, Attention: Document Identifier/OMB Control Number, Room C4–26–05, 7500 Security Boulevard, Baltimore, Maryland 21244–1850.

Michelle Shortt,

Director, Regulations Development Group, Office of Strategic Operations and Regulatory Affairs.

[FR Doc. 2010–10623 Filed 5–6–10; 8:45 am]

BILLING CODE 4120–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

[Document Identifier: CMS–10293]

Centers for Medicare & Medicaid Services; Agency Information Collection Activities: Submission for OMB Review; Comment Request

AGENCY: Centers for Medicare & Medicaid Services.

In compliance with the requirement of section 3506(c)(2)(A) of the Paperwork Reduction Act of 1995, the Centers for Medicare & Medicaid Services (CMS), Department of Health and Human Services, is publishing the following summary of proposed collections for public comment. Interested persons are invited to send comments regarding this burden estimate or any other aspect of this collection of information, including any of the following subjects: (1) The necessity and utility of the proposed information collection for the proper performance of the Agency's function; (2) the accuracy of the estimated burden; (3) ways to enhance the quality, utility, and clarity of the information to be collected; and (4) the use of automated collection techniques or other forms of information technology to minimize the information collection burden.

1. *Type of Information Collection Request:* New Collection; *Title of Information Collection:* Tribal Consultation State Plan Amendment Template; *Use:* Effective July 1, 2009, section 5006 of the American Recovery and Reinvestment Act of 2009 (Recovery Act) amended section 1902(a)(73) of the Act to require that certain States utilize a process for the State to seek advice on a regular, ongoing basis from designees of the Indian Health Service (IHS) and Urban Indian Organizations concerning Medicaid and Children's Health Insurance Program (CHIP) matters having a direct effect on them. The consultation process is required for the 37 States in which 1 or more Indian Health Programs or Urban Indian Organizations furnish health care services. The State Medicaid agency for each of these States will complete the template page and submit it for approval as part of a State plan amendment, to document how it meets the requirements for tribal consultation. *Form Number:* CMS–10293 (OMB#: 0938–NEW); *Frequency:* Reporting—Once and occasionally; *Affected Public:* State, Local, or Tribal Governments; *Number of Respondents:* 37; *Total Annual Responses:* 37; *Total Annual Hours:* 37. (For policy questions regarding this collection contact Lane Terwilliger at 410–786–2059. For all other issues call 410–786–1326.)

To obtain copies of the supporting statement and any related forms for the proposed paperwork collections referenced above, access CMS Web Site address at *http://www.cms.hhs.gov/PaperworkReductionActof1995,* or E-mail your request, including your address, phone number, OMB number, and CMS document identifier, to

Paperwork@cms.hhs.gov, or call the Reports Clearance Office on (410) 786–1326.

To be assured consideration, comments and recommendations for the proposed information collections must be received by the OMB desk officer at the address below, no later than 5 p.m. on *June 7, 2010*.

OMB, Office of Information and Regulatory Affairs, Attention: CMS Desk Officer, Fax Number: (202) 395–6974, E-mail: *OIRA_submission@omb.eop.gov*.

Michelle Shortt,

Director, Regulations Development Group, Office of Strategic Operations and Regulatory Affairs.

[FR Doc. 2010–10622 Filed 5–6–10; 8:45 am]

BILLING CODE 4120–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2010–N–0074]

Agency Information Collection Activities; Submission for Office of Management and Budget Review; Comment Request; Registration and Product Listing for Owners and Operators of Domestic Tobacco Product Establishments and Listing of Ingredients in Tobacco Products

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing that a proposed collection of information has been submitted to the Office of Management and Budget (OMB) for review and clearance under the Paperwork Reduction Act of 1995 (the PRA).

DATES: Fax written comments on the collection of information by June 7, 2010.

ADDRESSES: To ensure that comments on the information collection are received, OMB recommends that written comments be faxed to the Office of Information and Regulatory Affairs, OMB, Attn: FDA Desk Officer, FAX: 202–395–7285, or e-mailed to *oira_submission@omb.eop.gov*. All comments should be identified with the OMB control number 0910–0650. Also include the FDA docket number found in brackets in the heading of this document.

FOR FURTHER INFORMATION CONTACT: Jonna Capezzuto, Office of Information Management, Food and Drug Administration, 1350 Piccard Dr., PI50–400B, Rockville, MD 20850, 301–796–3794, *Jonnalynn.Capezzuto@fda.hhs.gov*.

SUPPLEMENTARY INFORMATION: In compliance with 44 U.S.C. 3507, FDA has submitted the following proposed collection of information to OMB for review and clearance.

Registration and Product Listing for Owners and Operators of Domestic Tobacco Product Establishments and Listing of Ingredients in Tobacco Products—(OMB Control Number 0910–0650)—Extension

On June 22, 2009, the President signed The Family Smoking Prevention and Tobacco Control Act (the Tobacco Control Act) (Public Law 111–31) into law. The Tobacco Control Act amended the Federal Food, Drug, and Cosmetic Act (the act) (21 U.S.C. 301 *et seq.*) by, among other things, adding a new chapter granting FDA important new authority to regulate the manufacture, marketing, and distribution of tobacco products to protect the public health generally and to reduce tobacco use by minors. Section 905(b) of the act (21 U.S.C. 395(b)), as amended by the Tobacco Control Act, requires that "every person who owns or operates any establishment in any State engaged in the manufacture, preparation, compounding, or processing of a tobacco product or tobacco products * * *" register with FDA the name, places of business, and all establishments owned or operated by that person. Every person must register by December 31 of each year. Section 905(i)(1) of the act, as amended by the Tobacco Control Act, requires that all registrants "shall, at the time of registration under any such subsection, file with [FDA] a list of all tobacco products which are being manufactured, prepared, compounded, or processed by that person for commercial distribution," along with certain accompanying consumer information, such as all labeling and a representative sampling of advertisements. Section 904(a)(1) of the act, as amended by the Tobacco Control Act, requires each tobacco product manufacturer or importer, or agent thereof, to submit "a listing of all ingredients, including tobacco, substances, compounds, and additives that are * * * added by the manufacturer to the tobacco, paper, filter, or other part of each tobacco product by brand and by quantity in each brand and subbrand." Since the Tobacco Control Act was enacted on June 22, 2009, the information required under section 904(a)(1) of the act must be submitted to FDA by December 22, 2009, and include the ingredients added as of the date of submission. Section 904(c) of the act also requires submission of information whenever additives, or the quantities of additives, are changed.

FDA issued guidance documents on both (1) Registration and Product Listing for Owners and Operators of Domestic Tobacco Product Establishments (November 12, 2009, 74 FR 58298) and (2) Listing of Ingredients in Tobacco Products (December 1, 2009, 74 FR 62795) to assist persons making such submissions to FDA under the Tobacco Control Act. While electronic submission of registration and product listing information and ingredient listing information are not required, FDA is strongly encouraging electronic submission to facilitate efficiency and timeliness of data management and collection. To that end, FDA designed the eSubmitter application to streamline the data entry process for registration and product listing and for ingredient listing. This tool allows for importation of large quantities of structured data, attachments of files (e.g., in portable document format (PDFs) and certain media files), and automatic acknowledgement of FDA's receipt of submissions. FDA also developed paper forms (FDA Form 3742—Registration and Listing for Owners and Operators of Domestic Tobacco Product Establishments and FDA Form 3743—Listing of Ingredients in Tobacco Products) as an alternative submission tool. Both the eSubmitter application and the paper forms can be accessed at *http://www.fda.gov/tobacco*.

In the **Federal Register** of September 1, 2009 (74 FR 45219), FDA published a notice announcing that a proposed collection of information had been submitted to OMB for emergency processing under the PRA. In the **Federal Register** of September 15, 2009 (74 FR 47257), FDA published a notice correcting the length of the comment period, keeping it open until October 1, 2009. In the **Federal Register** of October 13, 2009 (74 FR 52495), FDA published a notice reopening the comment period until October 26, 2009. Based on comments indicating that the burden estimates were too low, FDA has adjusted its original burden estimates. FDA has adjusted its burden estimate for registration and product listing for owners and operators of domestic establishments under section 905 of the act from 0.75 hours per response to 3.75 hours per response. FDA has adjusted its burden estimate for listing of ingredients under section 904 of the act from 0.75 hours per response to 3.0 hours per response. FDA also decreased

the number of respondents for listing of ingredients under section 904 of the act from 100,000 to 11,000 in response to comments that this estimate was too high. FDA also added the activity of applying for a Dun and Bradstreet D-U-N-S number to the burden of this information collection for those who chose to use eSubmitter.

In the **Federal Register** of February 18, 2010 (75 FR 7269), FDA published a 60-day notice requesting public comment on the proposed collection of information. One comment was received but was outside the scope of the PRA requirements.

FDA estimates the burden of this collection of information as follows:

TABLE 1.—ESTIMATED ANNUAL REPORTING BURDEN

Activity	Number of Respondents	Annual Frequency per Response	Total Annual Respondents	Hours per Response	Total Hours
Registration and Product Listing for Owners and Operators of Domestic Establishments	100,000	1	100,000	3.75	375,000
Listing of Ingredients	11,000	1	11,000	3.0	33,000
Obtaining a Dun and Bradstreet D-U-N-S Number	1,550	1	1,550	0.5	775
Total	112,550		112,550		408,775

Dated: May 4, 2010.

Leslie Kux,

Acting Assistant Commissioner for Policy.

[FR Doc. 2010–10781 Filed 5–6–10; 8:45 am]

BILLING CODE 4160–01–S

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2009–N–0487]

Agency Information Collection Activities; Announcement of Office of Management and Budget Approval; Guidance on Informed Consent for In Vitro Diagnostic Device Studies Using Leftover Human Specimens That Are Not Individually Identifiable

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing that a collection of information entitled "Guidance on Informed Consent For In Vitro Diagnostic Device Studies Using Leftover Human Specimens That Are Not Individually Identifiable" has been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995.

FOR FURTHER INFORMATION CONTACT: Daniel Gittleson, Office of Information Management, Food and Drug Administration, 1350 Piccard Dr., PI50–400B, Rockville, MD 20850, 301–796–5156, email: *Daniel.Gittleson@fda.hhs.gov*.

SUPPLEMENTARY INFORMATION: In the **Federal Register** of January 19, 2010 (75 FR 2868), the agency announced that the proposed information collection had been submitted to OMB for review and clearance under 44 U.S.C. 3507. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has now approved the information collection and has assigned OMB control number 0910–0582. The approval expires on February 28, 2013. A copy of the supporting statement for this information collection is available on the Internet at *http://www.reginfo.gov/public/do/PRAMain*.

Dated: May 4, 2010.

Leslie Kux,

Acting Assistant Commissioner for Policy.

[FR Doc. 2010–10782 Filed 5–6–10; 8:45 am]

BILLING CODE 4160–01–S

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Submission for OMB Review; Comment Request; REDS–II—Does Pre-Donation Behavioral Deferral Increase the Safety of the Blood Supply?

SUMMARY: Under the provisions of Section 3507(a)(1)(D) of the Paperwork Reduction Act of 1995, the National Heart, Lung and Blood Institute (NHLBI), the National Institutes of Health has submitted to the Office of Management and Budget (OMB) a request for review and approval of the information collection listed below. This proposed information collection was previously published in the **Federal Register** on February 24, 2010 in Volume 75, No. 36, pages 8367–8368 and allowed 60-days for public comment. (No public comments were received.) The purpose of this notice is to allow an additional 30 days for public comment. The National Institutes of Health may not conduct or sponsor, and the respondent is not required to respond to, an information collection that has been extended, revised, or implemented on or after October 1, 1995, unless it displays a currently valid OMB control number.

Proposed Collection: Title: REDS–II Does Pre-Donation Behavioral Deferral Increase the Safety of the Blood Supply?

Type of Information Collection Request: New. *Need and Use of Information Collection:* While it is well-accepted that deferrals, as part of the "layers of safety" concept, increase the safety of the blood supply, studies with sufficiently large sample size to quantify HIV infection and other infectious marker rates in deferred donors are lacking. Evidence in support of increased safety is frequently inferred from studies conducted in other health care settings. For example, a small hospital-based case control study conducted in Brazil examined the association between infectious markers and body tattoos. Even though tattoos are not used as a criteria to determine blood donor eligibility in Brazil, having a tattoo was associated with HCV and also with having at least one positive infectious marker.(1) Significant associations were not independently observed for HIV, HBV, syphilis or Chagas. The authors reported an overall sensitivity of 11% and specificity of

97% for the presence of a tattoo as indicator of having HIV, HCV, HBV, or syphilis infection. The researchers then estimated the impact on blood donor selection and disease marker testing using the results from their hospital-based case control study. However, the assumptions such as disease marker prevalence of as much as 15% in donors who are deferred for tattoos and a prevalence of 4% of the potential donor base having a tattoo (2) do not represent current temporary deferrals in Brazil and do not address the most common behavior-related deferrals. A more detailed and targeted assessment of the value of relevant deferrals could be used to help inform blood donation policies in Brazil.

In Brazilian blood collection centers, donor deferral is initiated either by the blood center staff, based on information disclosed by prospective donors, or by the donor through self-deferral. Either type of deferral occurs because of the belief that a donor's behavior, exposures, or history represents an increased risk to the safety of the blood supply.

Although the general eligibility criteria are mandated by the Brazilian Ministry of Health, the specific criteria for screening potential donors and the procedures for implementing them may vary across the regional blood collection centers. This study will focus on sexual behavior deferrals and their impact on blood safety. The two main study aims are: (1) To assess infectious disease marker prevalence in donors who are deferred for higher risk sexual and non-injection drug use behavior; and (2) To determine if the different deferral classification procedures used by different blood centers in Brazil lead to a measurable difference in disease marker prevalence in deferred donors. To do this, deferred donors who agree to participate in this study will be asked to complete an audio computer assisted self interview (ACASI) questionnaire that measures two content areas (1) motivations for attempting to donate, (2) additional information on the deferral and other potentially undisclosed deferrable behaviors. A blood sample will be collected from the deferred donors and tested for the panel of infections currently screened for in Brazil (HIV, Hepatitis C, Hepatitis B, Human T-lymphotropic virus, syphilis, and Trypanosoma cruzi) using the same high-throughput laboratory reagents and procedures that are used to screen donations. These deferred donor marker rates will be compared to the marker rates among accepted donors with the same demographic characteristics. Marker rates in deferred donors will also be compared between the blood centers.

Frequency of Response: Once. *Affected Public:* Individuals. *Type of Respondents:* Adult Blood Donors. The annual reporting burden is as follows: *Estimated Number of Respondents:* 4,860; *Estimated Number of Responses per Respondent:* 1; *Average Burden of Hours per Response:* 0.33 (including administration of the informed consent form and questionnaire completion instructions); and *Estimated Total Annual Burden Hours Requested:* 1,604. The annualized cost to respondents is estimated at: $10,426 (based on $6.50 per hour). There are no Capital Costs to report. There are no Operating or Maintenance Costs to report.

Estimated number of respondents	Estimated number of responses per respondent	Average burden hours per response	Estimated total annual burden hours requested
4,860	1	0.33	1,604

Request for Comments: Written comments and/or suggestions from the public and affected agencies are invited on one or more of the following points: (1) Whether the proposed collection of information is necessary for the proper performance of the function of the agency, including whether the information will have practical utility; (2) The accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (3) Ways to enhance the quality, utility, and clarity of the information to be collected; and (4) Ways to minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Direct Comments to OMB: Written comments and/or suggestions regarding the item(s) contained in this notice, especially regarding the estimated public burden and associated response time, should be directed to the: Office of Management and Budget, Office of Regulatory Affairs, *OIRA_submission@omb.eop.gov* or by fax to 202–395–6974, Attention: Desk Officer for NIH. To request more information on the proposed project or to obtain a copy of the data collection plans and instruments, contact: Dr. George Nemo, Project Officer, NHLBI, Two Rockledge Center, Suite 10042, 6701 Rockledge Drive, Bethesda, MD 20892–7950, or call 301–435–0075, or E-mail your request to *nemog@nih.gov*.

Comments Due Date: Comments regarding this information collection are best assured of having their full effect if received within 30-days of the date of this publication.

Dated: April 29, 2010.

George Nemo,

Project Officer, NHLBI, National Institutes of Health.

[FR Doc. 2010–10899 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Proposed Collection; Comment Request; A Generic Submission for Formative Research, Pretesting, and Stakeholder Measures at NCI

SUMMARY: Under the provisions of Section 3506(c)(2)(A) of the Paperwork Reduction Act of 1995, for opportunity for public comment on proposed data collection projects, the National Cancer Institute (NCI), the National Institutes of Health (NIH) will publish periodic summaries of proposed projects to be submitted to the Office of Management and Budget (OMB) for review and approval.

Proposed Collection: Title: A Generic Submission for Formative Research, Pre-testing, and Stakeholder Measures at NCI. *Type of Information Collection Request:* New. *Need and Use of Information Collection:* In order to carry out NCI's legislative mandate, the Office of Advocacy Relations (OAR) disseminates cancer-related information to a variety of stakeholders, seeks their

input and feedback, and facilitates collaboration between the Institute and these external partners to advance NCI's authorized programs. It is beneficial for NCI, through the OAR, to pretest strategies, concepts, activities and materials while they are under development. This pre-testing, or formative evaluation, helps ensure that the products and services developed by NCI have the greatest capacity of being received, understood, and accepted by their target audiences.

Additionally, since OAR is responsible for matching advocates to NCI programs and initiatives across the cancer continuum, it is necessary to measure the satisfaction of both internal and external stakeholders with this collaboration. This customer satisfaction research helps ensure the relevance, utility, and appropriateness of the many initiatives and products that OAR and NCI produce. The OAR will use a variety of qualitative (focus groups, interviews) and quantitative (paper, phone, in-person, and Web surveys) methodologies to conduct this research, allowing NCI to: (1) Understand characteristics (attitudes, beliefs, and behaviors) of the intended target audience and use this information in the development of effective strategies, concepts and activities; (2) use a feedback loop to help refine, revise, and enhance OAR's efforts—ensuring that they have the greatest relevance, utility, appropriateness, and impact for/to target audiences; and (3) expend limited program resource dollars wisely and effectively. *Frequency of Response:* On occasion. *Affected Public:* Individuals or households; Businesses or other for profit; Not-for-profit institutions and organizations; Federal Government; State, Local, or Tribal Government. *Type of Respondents:* Adult cancer research advocates; members of the public; health care professionals; organizational representatives. The table below outlines the estimated burden hours required for a three-year approval of this generic submission. There are no Capital Costs, Operating Costs, and/or Maintenance Costs to report.

A.12–1—ESTIMATE OF ANNUAL BURDEN HOURS

Survey/instrument	Number of respondents	Frequency of response	Average hours per response	Annual burden hours
Self-Administered Post-Activity Questionnaires	1,200	1	20/60 (.33)	400
Other Self-Administered Questionnaires	600	1	20/60 (.33)	200
Individual In-Depth Interviews	75	1	1.0	75
Focus Group Interviews	100	1	1.5	150
Totals	1,975			825

Request for Comments: Written comments and/or suggestions from the public and affected agencies are invited on one or more of the following points: (1) Whether the proposed collection of information is necessary for the proper performance of the function of the agency, including whether the information will have practical utility; (2) The accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (3) Ways to enhance the quality, utility, and clarity of the information to be collected; and (4) Ways to minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

FOR FURTHER INFORMATION CONTACT: To request more information on the proposed project or to obtain a copy of the data collection plans, contact Elizabeth Neilson, Advocacy Relations Manager, Office of Advocacy Relations (OAR), NCI, NIH, 31 Center Drive, Bldg. 31, Room 10A28, MSC 2580, Bethesda, MD 20892, call non-toll-free number 301–451–3321 or e-mail your request, including your address to: *neilsone@mail.nih.gov.*

Comments Due Date: Comments regarding this information collection are best assured of having their full effect if received within 60 days of the date of this publication.

Dated: April 29, 2010.

Vivian Horovitch-Kelley,

NCI Project Clearance Liaison, National Institutes of Health.

[FR Doc. 2010–10897 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Office of Refugee Resettlement

Administration for Children and Families; Single-Source Program Expansion Supplement Grant

AGENCY: Office of Refugee Resettlement, ACF, HHS.

ACTION: Notice to award a single-source program expansion supplement grant.

CFDA Number: 93.576.

Legislative Authority: This program is authorized by section 412 (c)(1)(A) of the Immigration and Nationality Act (INA) [8 U.S.C. 1522 (c)(1)(A)], as amended, which authorizes the Director "to make grants to, and enter into contracts with, public or private nonprofit agencies for projects specifically designed—(i) To assist refugees in obtaining the skills which are necessary for economic self-sufficiency, including projects for job training, employment services, day care, professional refresher training, and other recertification services; (ii) to provide training in English where necessary (regardless of whether the refugees are employed or receiving cash or other assistance); and (iii) to provide where specific needs have been shown and recognized by the Director, health (including mental health) services, social services, educational and other services."

Amount of Award: $150,000.

Project Period: December 1, 2009–September 29, 2010.

SUMMARY: The Office of Refugee Resettlement (ORR) announces the award of a $150,000 single-source program expansion supplement to expand the provision of technical assistance to the Ethiopian Community Development Council, Inc. (ECDC), located in Arlington, VA.

Current economic conditions have confronted community-based organizations (CBO) with a dire need for assistance yet limited resources to respond effectively. This supplemental award will support greater outreach and enhanced collaboration to meet these challenges.

Provision of technical assistance is essential to support the long-term

sustainability of programs and services that help newly-arrived refugees secure employment, overcome language and cultural barriers, become economically self-sufficient, and integrate into their new communities.

Through this provision of technical assistance, ECDC will ensure a more effective service component by focusing on reducing social service gaps, increasing refugee access to mainstream resources and services, and helping CBOs build capacity and sustainability.

Contact for Further Information: Kenneth Tota, Deputy Director, Office of Refugee Resettlement, 901 D Street, SW., Washington, DC 20047. Telephone: 202–401–4858; e-mail: *ktota@acf.hhs.gov.*

Dated: April 28, 2010.

Eskinder Negash,

Director, Office of Refugee Resettlement.

[FR Doc. 2010–10809 Filed 5–6–10; 8:45 am]

BILLING CODE P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

Office of Refugee Resettlement; Urgent Single Source Grant to Survivors of Torture International (SOTI)

AGENCY: Office of Refugee Resettlement, ACF, HHS.

ACTION: Notice to Award an Urgent Single Source Grant to Survivors of Torture International (SOTI).

CFDA Number: 93.604.

Legislative Authority: "Torture Victims Relief Act (TVRA) of 1998," Public Law 105–320 (22 U.S.C. 2152 note), reauthorized by Public Law 109–165 in January 2006. Section 5(a) provides for "Assistance for Treatment of Torture Victims.—The Secretary of Health and Human Services may provide grants to programs in the United States to cover the cost of the following services: (1) Services for the rehabilitation of victims of torture, including treatment of the physical and psychological effects of torture. (2) Social and legal services for victims of torture. (3) Research and training for health care providers outside of treatment centers, or programs for the purpose of enabling such providers to provide the services described in paragraph (1)."

Amount of Award: $271,000.

Project Period: March 1, 2010 through February 28, 2011.

Summary: Notice is hereby given that an urgent single-source award will be made to Survivors of Torture International (SOTI), San Diego, CA, to provide comprehensive rehabilitative services to incoming Iraqi and other survivors of torture, who are in need of specialized services, to regain their health and independence and rebuild productive lives. In addition to providing direct services, SOTI will train area providers to effectively serve this population and leverage resources within the community. SOTI will also focus on building and sustaining collaboration among other providers to serve this population.

In Fiscal Year (FY) 2010, due to an increase in the funding appropriation under the TVRA, an additional amount of $271,000 is available for direct services through the Office of Refugee Resettlement (ORR) Services for Survivors of Torture Program. In FY 2009, a total of 3,667 Iraqi refugees and holders of Special Immigrant Visas were resettled in the San Diego metropolitan area. Some of these individuals have suffered torture prior to arrival in the United States and are in need of specialized services. San Diego, CA, is the area of the country most heavily impacted in terms of Iraqi refugee arrivals. SOTI has a long history of serving torture survivors in San Diego county, has developed a large network of pro bono providers, is well known in the community, and possesses the clinical and programmatic expertise to serve the survivors.

FOR FURTHER INFORMATION CONTACT: Ronald Munia, Director, Division of Community Resettlement, Office of Refugee Resettlement, 901 D Street, SW., Washington, DC 20047. Telephone: 202–401–4559. E-mail: *Ronald.Munia@acf.hhs.gov.*

Dated: April 28, 2010.

Eskinder Negash,

Director, Office of Refugee Resettlement.

[FR Doc. 2010–10810 Filed 5–6–10; 8:45 am]

BILLING CODE P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2010–D–0189]

Guidance for Industry and Food and Drug Administration Staff; Enforcement Policy Concerning Certain Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco; Availability

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) is announcing the availability of the guidance entitled "Enforcement Policy Concerning Certain Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco." This guidance document discusses FDA's intended enforcement policies with respect to two provisions of the final regulations restricting the sale and distribution of cigarettes and smokeless tobacco to protect children and adolescents. One provision restricts the use of a trade or brand name of a nontobacco product as the trade or brand name for a cigarette or smokeless tobacco product. The second provision requires that labeling or print advertisements appear in a black-and-white text only format, except in certain "adult only" locations or in publications that do not have significant readership by children and adolescents under the age of 18. This guidance document will be implemented immediately, but it remains subject to comment in accordance with the agency's good guidance practices (GGPs).

DATES: Submit electronic or written comments on this guidance at any time. General comments on agency guidance documents are welcome at any time.

ADDRESSES: Submit written requests for single copies of the guidance document entitled "Enforcement Policy Concerning Certain Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco" to the Center for Tobacco Products, Food and Drug Administration, 9200 Corporate Blvd., Rockville, MD 20850–3229. Send one self-addressed adhesive label to assist that office in processing your request or include a fax number to which the guidance document may be sent. See the **SUPPLEMENTARY INFORMATION** section for information on electronic access to the guidance.

Submit electronic comments to *http://www.regulations.gov.* Submit written comments concerning this guidance to the Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852. Identify comments with the docket number found in brackets in the heading of this document.

FOR FURTHER INFORMATION CONTACT: Annette Marthaler, Center for Tobacco Products, Food and Drug Administration, 9200 Corporate Blvd., Rockville, MD 20850, 1–877–287–1373, *annette.marthaler@fda.hhs.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

In the **Federal Register** of March 19, 2010 (75 FR 13225), FDA published final regulations restricting the sale and distribution of cigarettes and smokeless tobacco to protect children and adolescents. This guidance document discusses FDA's intended enforcement policies with respect to two provisions of the final regulations restricting the sale and distribution of cigarettes and smokeless tobacco to protect children and adolescents.

One provision, § 1140.16(a) (21 CFR 1140.16(a)), specifies that manufacturers may not use a trade or brand name of a nontobacco product as the trade or brand name for a cigarette or smokeless tobacco product unless the trade or brand name was on both the tobacco product and a nontobacco product sold in the United States on January 1, 1995. FDA is aware of concerns regarding this provision and is considering what changes, if any, would be appropriate to address those concerns.[1] While FDA has this issue under consideration, it intends to exercise its enforcement discretion concerning § 1140.16(a) (21 CFR 1140.16(a)) not to commence enforcement actions under this provision for the duration of its consideration where:

(1) The trade or brand name of the cigarettes or smokeless tobacco product was registered, or the product was marketed, in the United States on or before June 22, 2009; or

(2) The first marketing or registration in the United States of the tobacco product occurs before the first marketing or registration in the United States of the nontobacco product bearing the same name; provided, however, that the tobacco and nontobacco product are not owned, manufactured, or distributed by the same, related, or affiliated entities (including as a licensee).

The second provision is § 1140.32(a) (21 CFR 1140.32(a)). Under this section of the final rule, manufacturers, distributors, and retailers must use only black text on a white background for labeling or advertising (with certain exceptions). The United States District Court for the Western District of Kentucky recently issued an order permanently enjoining FDA from enforcing § 1140.32(a) (formerly 21 CFR 897.32(a) of the 1996 final rule that published in the **Federal Register** of August 28, 1996 (61 FR 44396)) (*Commonwealth Brands, Inc.* v. *United States*, No. 1:09-CV-117-M (W.D. Ky. Jan. 4, 2010)). As required by section 102 of the Family Smoking Prevention and Tobacco Control Act (Tobacco Control Act), the effective date for § 1140.32(a) is June 22, 2010. At this time, however, in light of the court's order in *Commonwealth Brands*, FDA intends to exercise its enforcement discretion concerning § 1140.32(a) not to commence enforcement actions under this provision during the pendency of the litigation irrespective of whether the entity is a party to the pending lawsuit or located in the Western District of Kentucky.

FDA intends that the exercise of enforcement discretion expressed in this guidance document for §§ 1140.16(a) and 1140.32(a) begin upon the effective date of the final rule (June 22, 2010). In accordance with FDA's GGP regulation (§ 10.115 (21 CFR 10.115)), you may comment on this guidance at any time. The agency will consider your comments and determine whether to revise the guidance at a later date.

II. Significance of Guidance

FDA is issuing this guidance document as a level 1 guidance consistent with FDA's GGP regulation (§ 10.115). This guidance document is being implemented immediately without prior public comment under § 10.115(g)(2) because the agency has determined that prior public participation is not feasible or appropriate. This document provides guidance on regulations that are required by statute (section 102 of the Tobacco Control Act); moreover, the statute directs that the regulations take effect on June 22, 2010 (section 102(a)(2)(F) of the Tobacco Control Act). It is important that FDA explain its enforcement policy for these two provisions before that date.

III. Comments

Interested persons may submit to the Division of Dockets Management (see **ADDRESSES**) electronic or written comments regarding this document. Submit a single copy of electronic comments or two paper copies of any mailed comments, except that individuals may submit one paper copy. Comments are to be identified with the docket number found in brackets in the heading of this document. Received comments may be seen in the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

IV. Electronic Access

An electronic version of the guidance document is available on the Internet at *http://www.regulations.gov* and *http://www.fda.gov/TobaccoProducts/GuidanceComplianceRegulatoryInformation/default.htm*.

Dated: May 4, 2010.

Leslie Kux,

Acting Assistant Commissioner for Policy.

[FR Doc. 2010–10934 Filed 5–5–10; 11:15 am]

BILLING CODE 4160–01–S

[1] Under section 102(a)(3)-(4) of the Family Smoking Prevention and Tobacco Control Act (21 U.S.C. 387a-1(a)(3)-(4)), FDA may amend the final rule after issuing a proposed rule for notice and comment.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Substance Abuse and Mental Health Services Administration

Advisory Committee for Women's Services; Notice of Meeting

Pursuant to Public Law 92–463, notice is hereby given of a meeting of the Substance Abuse and Mental Health Services Administration's (SAMHSA) Advisory Committee for Women's Services (ACWS) on May 26–27 at SAMHSA.

The meeting is open to the public. It will include reports from the SAMHSA Administrator and the ACWS Chair, Updates from ACWS members, and a discussion of SAMHSA's strategic initiatives.

Attendance by the public will be limited to space available. Public comments are welcome. The meeting can also be accessed via Webstream. To obtain the access information, to register, to submit written or brief oral comments, or to request special accommodations for persons with disabilities, please register at the SAMHSA Committee's Web site at *https://nac.samhsa.gov/Registration/meetingsRegistration.aspx* or communicate with the Designated Federal Officer for the ACWS, Ms. Nevine Gahed (*see* contact information below). Substantive meeting information and a roster of Committee members may be obtained either by accessing the SAMHSA Committee's Web site at *https://nac.samhsa.gov/WomenServices/index.aspx*, or by contacting Ms. Gahed. The transcript for the meeting will be available on the SAMHSA Committee's Web site within three weeks after the meeting.

Committee Name: SAMHSA's Advisory Committee for Women's Services.

Date/Time/Type: Wednesday, May 26, 2010 from 9 a.m. to 5 p.m. EST: OPEN. Thursday, May 27, 2010 from 9 a.m. to 12 noon EST: OPEN.

Place: 1 Choke Cherry Road, Seneca Conference Room, Rockville, Maryland 20857.

Contact: Nevine Gahed, Designated Federal Officer, SAMHSA Advisory Committee for Women's Services, 1 Choke Cherry Road,

Room 8–1112, Rockville, Maryland 20857, *Telephone:* (240) 276–2331; *Fax:* (240) 276–2220 and *E-mail: nevine.gahed@samhsa.hhs.gov.*

Toian Vaughn,

Committee Management Officer, Substance Abuse and Mental Health Services Administration.

[FR Doc. 2010–10778 Filed 5–6–10; 8:45 am]

BILLING CODE 4162–20–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Biomedical Imaging and Bioengineering; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Biomedical Imaging and Bioengineering Special Emphasis Panel—NIBIB Training SEP.

Date: July 7–9, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Two Democracy Plaza, 6707 Democracy Boulevard, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Manana Sukhareva, PhD, Scientific Review Officer, National Institute of Biomedical Imaging & Bioeng, National Institutes of Health, 6707 Democracy Boulevard, Suite 959, Bethesda, MD 20892, 301–451–3397, *sukharem@mail.nih.gov.*

Dated: April 30, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10892 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Center on Minority and Health Disparities; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable materials, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Center on Minority Health and Health Disparities Special Emphasis Panel, Faith Based R21.

Date: June 29–July 1, 2010.

Time: 5 p.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites at the Chevy Chase Pavilion, 4300 Military Road, NW., Washington, DC 20015.

Contact Person: Prabha L. Atreya, PhD, Chief, Office of Scientific Review, National Center on Minority Health and Health Disparities, 6707 Democracy Boulevard, Suite 800, Bethesda, MD 20892, (301) 594–8696, *atreyapr@mail.nih.gov.*

Dated: April 30, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10889 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute on Aging; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute on Aging Special Emphasis Panel, Basis of Myocardial Injury in the Elderly.

Date: May 27, 2010.

Time: 1 p.m. to 4 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institute on Aging, Gateway Building, 7201 Wisconsin Avenue, Suite 2C212, Bethesda, MD 20892 (Telephone Conference Call).

Contact Person: Bita Nakhai, PhD, Scientific Review Officer, Scientific Review Branch, National Institute on Aging, Gateway Bldg., 2C212, 7201 Wisconsin Avenue, Bethesda, MD 20814. 301–402–7701. *nakhaib@nia.nih.gov.*

This notice is being published less than 15 days prior to the meeting due to the timing limitations imposed by the review and funding cycle.

(Catalogue of Federal Domestic Assistance Program Nos. 93.866, Aging Research, National Institutes of Health, HHS)

Dated: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10888 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Brain Disorders and Clinical Neuroscience Integrated Review Group, Clinical Neuroplasticity and Neurotransmitters Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5:30 p.m.

Agenda: To review and evaluate grant applications.

Place: The Melrose Hotel, 2430 Pennsylvania Avenue, NW., Washington, DC 20037.

Contact Person: Suzan Nadi, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5217B, MSC 7846, Bethesda, MD 20892, 301–435–1259, *nadis@csr.nih.gov*.

Name of Committee: Digestive, Kidney and Urological Systems Integrated Review Group, Urologic and Kidney Development and Genitourinary Diseases Study Section.

Date: June 3, 2010.

Time: 8 a.m. to 6 p.m.

Agenda: To review and evaluate grant applications.

Place: Holiday Inn San Francisco Fisherman's Wharf, 1300 Columbus Avenue, San Francisco, CA 94133.

Contact Person: Ryan G. Morris, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4205, MSC 7814, Bethesda, MD 20892, 301–435–1501, *morrisr@csr.nih.gov*.

Name of Committee: Population Sciences and Epidemiology Integrated Review Group, Infectious Diseases, Reproductive Health, Asthma and Pulmonary Conditions Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Courtyard by Marriott Magnificent Mile Chicago, 165 E. Ontario Street, Chicago, IL 60611.

Contact Person: Jose Fernando Arena, PhD, MD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3135, MSC 7770, Bethesda, MD 20892, 301–435–1735, *arenaj@mail.nih.gov*.

Name of Committee: Oncology 1–Basic Translational Integrated Review Group, Cancer Molecular Pathobiology Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Hotel Kabuki, 1625 Post Street, San Francisco, CA 94115.

Contact Person: Elaine Sierra-Rivera, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6184, MSC 7804, Bethesda, MD 20892, 301–435–1779, *riverase@csr.nih.gov*.

Name of Committee: Molecular, Cellular and Developmental Neuroscience Integrated Review Group, Cellular and Molecular Biology of Glia Study Section.

Date: June 3, 2010.

Time: 8 a.m. to 8 p.m.

Agenda: To review and evaluate grant applications.

Place: Hotel Palomar, 2121 P Street, NW., Washington, DC 20037.

Contact Person: Toby Behar, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4136, MSC 7850, Bethesda, MD 20892, (301) 435–4433, *behart@csr.nih.gov*.

Name of Committee: Risk, Prevention and Health Behavior Integrated Review Group, Risk, Prevention and Intervention for Addictions Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites Chicago—O'Hare/Rosemont, 5500 North River Road, Rosemont, IL 60018.

Contact Person: Gabriel B. Fosu, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rocklege Drive, Room 3108 MSC 7808, Bethesda, MD 20892, (301) 435–3562, *fosug@csr.nih.gov*.

Name of Committee: Integrative, Functional and Cognitive Neuroscience Integrated Review Group, Neuroendocrinology, Neuroimmunology, and Behavior Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 3 p.m.

Agenda: To review and evaluate grant applications.

Place: Pier 5 Hotel, 711 Eastern Avenue, Baltimore, MD 21202.

Contact Person: Michael Selmanoff, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3134, MSC 7844, Bethesda, MD 20892, 301–435–1119, *mselmanoff@csr.nih.gov*.

Name of Committee: Genes, Genomes, and Genetics Integrated Review Group, Molecular Genetics C Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: One Washington Circle Hotel, One Washington Circle, NW., Washington, DC 20037.

Contact Person: Barbara Whitmarsh, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2206, MSC 7890, Bethesda, MD 20892, 301–435–4511, *whitmarshb@csr.nih.gov*.

Name of Committee: Integrative, Functional and Cognitive Neuroscience Integrated Review Group, Central Visual Processing Study Section.

Date: June 3, 2010.

Time: 8 a.m. to 6 p.m.

Agenda: To review and evaluate grant applications.

Place: Hotel Palomar, 2121 P Street, NW., Washington, DC 20037.

Contact Person: John Bishop, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5182, MSC 7844, Bethesda, MD 20892, 301–408–9664, *bishopj@csr.nih.gov*.

Name of Committee: Brain Disorders and Clinical Neuroscience Integrated Review Group, Brain Injury and Neurovascular Pathologies Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: W Chicago—Lakeshore, 644 North Lake Shore Drive, Chicago, IL 60601.

Contact Person: Alexander Yakovlev, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5206, MSC 7846, Bethesda, MD 20892, 301–435–1254, *yakovleva@csr.nih.gov*.

Name of Committee: Immunology Integrated Review Group, Vaccines Against Microbial Diseases Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Washington Plaza Hotel, 10 Thomas Circle, NW., Washington, DC 20005.

Contact Person: Jian Wang, MD, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4218, MSC 7812, Bethesda, MD 20892, 301–435–2778, *wangjia@csr.nih.gov*.

Name of Committee: Risk, Prevention and Health Behavior Integrated Review Group, Psychosocial Development, Risk and Prevention Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 6 p.m.

Agenda: To review and evaluate grant applications.

Place: Grand Hyatt Seattle, 721 Pine Street, Seattle, WA 98101.

Contact Person: Anna L. Riley, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3114, MSC 7759, Bethesda, MD 20892, 301–435–2889, *rileyann@csr.nih.gov*.

Name of Committee: Brain Disorders and Clinical Neuroscience Integrated Review Group, Clinical Neuroscience and Neurodegeneration Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Washington Plaza Hotel, 10 Thomas Circle, NW., Washington, DC 20005.

Contact Person: Seetha Bhagavan, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5194, MSC 7846, Bethesda, MD 20892, 301–237–9838, *bhagavas@csr.nih.gov*.

Name of Committee: Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group, Clinical Molecular Imaging and Probe Development.

Date: June 3, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Little America Hotel, 500 South Main Street, Salt Lake City, UT 84101.

Contact Person: Eileen W. Bradley, DSC, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5100, MSC 7854, Bethesda, MD 20892, 301–435–1179, *bradleye@csr.nih.gov*.

Name of Committee: Biological Chemistry and Macromolecular Biophysics Integrated Review Group, Macromolecular Structure and Function B Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 12 p.m.

Agenda: To review and evaluate grant applications.

Place: Mandarin Oriental, 1330 Maryland Avenue, SW., Washington, DC 20024.

Contact Person: Arnold Revzin, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4146, MSC 7824, Bethesda, MD 20892, 301–435–1153, *revzina@csr.nih.gov*.

Name of Committee: Cell Biology Integrated Review Group, Nuclear and Cytoplasmic Structure/Function and Dynamics Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Palomar Hotel, 2121 P Street, NW., Washington, DC 20037.

Contact Person: David Balasundaram, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5189, MSC 7840, Bethesda, MD 20892, 301–435–1022, *balasundaramd@csr.nih.gov*.

Name of Committee: Biological Chemistry and Macromolecular Biophysics Integrated Review Group, Macromolecular Structure and Function D Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: InterContinental Chicago Hotel, 505 North Michigan Avenue, Chicago, IL 60611.

Contact Person: James W. Mack, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4154, MSC 7806, Bethesda, MD 20892, (301) 435–2037, *mackj2@csr.nih.gov*.

Name of Committee: Immunology Integrated Review Group, Immunity and Host Defense Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Embassy Suites at the Chevy Chase Pavilion, 4300 Military Road, NW., Washington, DC 20015.

Contact Person: Patrick K Lai, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2215, MSC 7812, Bethesda, MD 20892, 301–435–1052, *laip@csr.nih.gov*.

Name of Committee: Bioengineering Sciences & Technologies Integrated Review Group, Microscopic Imaging Study Section.

Date: June 3, 2010.

Time: 8 a.m. to 4 p.m.

Agenda: To review and evaluate grant applications.

Place: Churchill Hotel, 1914 Connecticut Avenue, NW., Washington, DC 20009.

Contact Person: Malgorzata Klosek, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4188, MSC 7849, Bethesda, MD 20892, (301) 435–2211, *klosekm@csr.nih.gov*.

Name of Committee: Bioengineering Sciences & Technologies Integrated Review Group, Nanotechnology Study Section.

Date: June 3–4, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Renaissance M Street Hotel, 1143 New Hampshire Avenue, NW., Washington, DC 20037.

Contact Person: Joseph D Mosca, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5158, MSC 7808, Bethesda, MD 20892, (301) 408–9465, *moscajos@csr.nih.gov*.

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10886 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR–10–082: Shared Instrumentation: Miscellaneous.

Date: May 26, 2010.

Time: 11 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications

Place: Tata Communications Us, Inc., 2355 Dulles Corner Boulevard, Suite 700, Herndon, VA 20171.

Contact Person: Sergei Ruvinov, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4158, MSC 7806, Bethesda, MD 20892, 301–435–1180, *ruvinser@csr.nih.gov*.

Name of Committee: Molecular, Cellular and Developmental Neuroscience Integrated Review Group; Cellular and Molecular Biology of Neurodegeneration Study Section.

Date: May 27–28, 2010.

Time: 8:30 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications

Place: Amalfi Hotel, 20 West Kinzie Street, Chicago, IL 60654.

Contact Person: Laurent Taupenot, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4183, MSC 7850, Bethesda, MD 20892, 301–435–1203, *taupenol@csr.nih.gov*.

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflicts: Kidney and Urological Sciences.

Date: June 1, 2010.

Time: 7 a.m. to 7 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Najma Begum, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2186, MSC 7818, Bethesda, MD 20892, 301–435–1243, *begumn@csr.nih.gov*.

Name of Committee: Cardiovascular and Respiratory Sciences Integrated Review Group; Lung Injury, Repair, and Remodeling Study Section.

Date: June 1–2, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: InterContinental Los Angeles Century City, 2151 Avenue of the Stars, Los Angeles, CA 90067.

Contact Person: Ghenima Dirami, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4122, MSC 7814, Bethesda, MD 20892, 301–594–1321, *diramig@csr.nih.gov*.

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Integrative and Functional Neuroscience.

Date: June 1–2, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Brian Hoshaw, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5181, MSC 7844, Bethesda, MD 20892, 301–435–1033, *hoshawb@csr.nih.gov*

Name of Committee: Genes, Genomes, and Genetics Integrated Review Group; Molecular Genetics B Study Section.

Date: June 1–2, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Catamaran Resort, 3999 Mission Boulevard, San Diego, CA 92109.

Contact Person: Richard A. Currie, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5128, MSC 7840, Bethesda, MD 20892, (301) 435–1219, *currieri@csr.nih.gov*.

Name of Committee: Musculoskeletal, Oral and Skin Sciences Integrated Review Group; Arthritis, Connective Tissue and Skin Study Section.
Date: June 1–2, 2010.
Time: 8:30 a.m. to 5:30 p.m.
Agenda: To review and evaluate grant applications.
Place: Courtyard Chicago Downtown/Magnificent Mile, 165 East Ontario Street, Chicago, IL 60611.
Contact Person: Aftab A. Ansari, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4108, MSC 7814, Bethesda, MD 20892, (301) 594–6376, *ansaria@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; RFA Panel: Investigations on Primary Immunodeficiency Diseases.
Date: June 1, 2010.
Time: 3 p.m. to 6 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).
Contact Person: Jin Huang, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4095G, MSC 7812, Bethesda, MD 20892, 301–435–1230, *jh377p@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; RFA RM09–022: Transformative R01 Roadmap Review.
Date: June 2, 2010.
Time: 8 a.m. to 6 p.m.
Agenda: To review and evaluate grant applications.
Place: Hotel Nikko, 222 Mason Street, San Francisco, CA 94102.
Contact Person: John L. Bowers, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4170, MSC 7806, Bethesda, MD 20892, (301) 435–1725, *bowersj@csr.nih.gov.*

Name of Committee: Cardiovascular and Respiratory Sciences Integrated Review Group; Cardiac Contractility, Hypertrophy, and Failure Study Section.
Date: June 2–3, 2010.
Time: 8 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: Grand Hyatt Seattle, 721 Pine Street, Seattle, WA 98101.
Contact Person: Olga A Tjurmina, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4030B, MSC 7814, Bethesda, MD 20892, (301) 451–1375, *ot3d@nih.gov.*

Name of Committee: Risk, Prevention and Health Behavior Integrated Review Group; Behavioral Medicine, Interventions and Outcomes Study Section.
Date: June 2–3, 2010.
Time: 8 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: W Chicago—Lakeshore, 644 North Lake Shore Drive, Chicago, IL 60611.
Contact Person: Lee S. Mann, JD, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3186, MSC 7848, Bethesda, MD 20892, 301–435–0677, *mannl@csr.nih.gov.*

Name of Committee: Cardiovascular and Respiratory Sciences Integrated Review Group; Lung Cellular, Molecular, and Immunobiology Study Section.
Date: June 2–3, 2010.
Time: 8 a.m. to 6 p.m.
Agenda: To review and evaluate grant applications.
Place: Pier 5 Hotel, 711 Eastern Avenue, Baltimore, MD 21202.
Contact Person: George M. Barnas, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2180, MSC 7818, Bethesda, MD 20892, 301–435–0696, *barnasg@csr.nih.gov.*

Name of Committee: Population Sciences and Epidemiology Integrated Review Group; Epidemiology of Cancer Study Section.
Date: June 2–3, 2010.
Time: 8 a.m. to 1 p.m.
Agenda: To review and evaluate grant applications.
Place: Hilton Alexandria Old Town, 1767 King Street, Alexandria, VA 22314.
Contact Person: Denise Wiesch, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3150, MSC 7770, Bethesda, MD 20892, (301) 435–0684, *wieschd@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Nursing and Related Clinical Sciences.
Date: June 2–3, 2010.
Time: 8 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: W Chicago—Lakeshore, 644 North Lake Shore Drive, Chicago, IL 60611.
Contact Person: Karin F. Helmers, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3166, MSC 7770, Bethesda, MD 20892, 301–254–9975, *helmersk@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; RFA RM09–022: Transformative R01 Roadmap Review.
Date: June 2, 2010.
Time: 8 a.m. to 6 p.m.
Agenda: To review and evaluate grant applications.
Place: Hotel Nikko, 222 Mason Street, San Francisco, CA 94102.
Contact Person: John L. Bowers, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4170, MSC 7806, Bethesda, MD 20892, (301) 435–1725, *bowersj@csr.nih.gov.*

Name of Committee: Cell Biology Integrated Review Group; Membrane Biology and Protein Processing Study Section.
Date: June 2–3, 2010.
Time: 8 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: InterContinental Chicago Hotel, 505 North Michigan Avenue, Chicago, IL 60611.
Contact Person: Janet M Larkin, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5142, MSC 7840, Bethesda, MD 20892, 301–806–2765, *larkinja@csr.nih.gov.*

Name of Committee: Endocrinology, Metabolism, Nutrition and Reproductive Sciences Integrated Review Group; Cellular, Molecular and Integrative Reproduction Study Section.
Date: June 2, 2010.
Time: 8 a.m. to 6 p.m.
Agenda: To review and evaluate grant applications.
Place: Hyatt Regency Bethesda, One Bethesda Metro Center, 7400 Wisconsin Avenue, Bethesda, MD 20814.
Contact Person: Gary Hunnicutt, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6164, MSC 7892, Bethesda, MD 20892, 301–435–0229, *gary.hunnicutt@nih.gov.*

Name of Committee: Integrative, Functional and Cognitive Neuroscience Integrated Review Group; Biological Rhythms and Sleep Study Section.
Date: June 2, 2010.
Time: 8 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: Pier 5 Hotel, 711 Eastern Avenue, Baltimore, MD 21202.
Contact Person: Michael Selmanoff, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 1208, MSC 7844, Bethesda, MD 20892, 301–435–1119, *mselmanoff@csr.nih.gov.*

Name of Committee: Cardiovascular and Respiratory Sciences Integrated Review Group; Respiratory Integrative Biology and Translational Research Study Section.
Date: June 2–3, 2010.
Time: 8:30 a.m. to 12 p.m.
Agenda: To review and evaluate grant applications.
Place: The Allerton Hotel, 701 North Michigan Avenue, Chicago, IL 60611.
Contact Person: Everett E. Sinnett, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2178, MSC 7818, Bethesda, MD 20892, (301) 435–1016, *sinnett@nih.gov.*

Name of Committee: Genes, Genomes, and Genetics Integrated Review Group; Genomics, Computational Biology and Technology Study Section.
Date: June 2–3, 2010.
Time: 8:30 a.m. to 5:30 p.m.
Agenda: To review and evaluate grant applications.
Place: InterContinental Chicago Hotel, 505 North Michigan Avenue, Chicago, IL 60611.
Contact Person: Barbara J. Thomas, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2218, MSC 7890, Bethesda, MD 20892, 301–435–0603, *bthomas@csr.nih.gov.*

Name of Committee: Biological Chemistry and Macromolecular Biophysics Integrated Review Group; Synthetic and Biological Chemistry B Study Section.
Date: June 2–3, 2010.

Time: 8:30 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: InterContinental Chicago Hotel, 505 North Michigan Avenue, Chicago, IL 60611.
Contact Person: Kathryn M. Koeller, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4166, MSC 7806, Bethesda, MD 20892, 301–435–2681, *koellerk@csr.nih.gov.*

Name of Committee: Healthcare Delivery and Methodologies; Community Influences on Health Behavior.
Date: June 2–3, 2010.
Time: 8:30 a.m. to 2 p.m.
Agenda: To review and evaluate grant applications.
Place: W Chicago—Lakeshore, 644 North Lake Shore Drive, Chicago, IL 60611.
Contact Person: Ellen K. Schwartz, EDD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3168, MSC 7770, Bethesda, MD 20892, 301–435–0681, *schwarte@csr.nih.gov.*

Name of Committee: Integrative, Functional and Cognitive Neuroscience Integrated Review Group; Neurobiology of Motivated Behavior Study Section.
Date: June 2–3, 2010.
Time: 8:30 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: Ritz Carlton Hotel, 1150 22nd Street, NW., Washington, DC 20037.
Contact Person: Edwin C. Clayton, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5180, MSC 7844, Bethesda, MD 20892, 301–408–9041, *claytone@csr.nih.gov.*

Name of Committee: Genes, Genomes, and Genetics Integrated Review Group; Genetics of Health and Disease Study Section.
Date: June 2–3, 2010.
Time: 8:30 a.m. to 1:30 p.m.
Agenda: To review and evaluate grant applications.
Place: Embassy Suites at the Chevy Chase Pavilion, 4300 Military Road, NW., Washington, DC 20015.
Contact Person: Cheryl M. Corsaro, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2204, MSC 7890, Bethesda, MD 20892, (301) 435–1045, *corsaroc@csr.nih.gov*

Name of Committee: Healthcare Delivery and Methodologies; Biomedical Computing and Health Informatics Study Section.
Date: June 2, 2010.
Time: 9 a.m. to 6 p.m.
Agenda: To review and evaluate grant applications.
Place: W Chicago—Lakeshore, 644 North Lake Shore Drive, Chicago, IL 60611.
Contact Person: Katherine Bent, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3160, MSC 7770, Bethesda, MD 20892, 301–435–0695, *bentkn@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Muscle Biology and Diseases.
Date: June 2, 2010
Time: 11 a.m. to 3 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892 (Telephone Conference Call).
Contact Person: Yi-Hsin Liu, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4214, MSC 7814, Bethesda, MD 20892, 301–451–1327, *liuyh@csr.nih.gov*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Synthetic and Biological Chemistry B.
Date: June 2, 2010.
Time: 11 a.m. to 11:30 a.m.
Agenda: To review and evaluate grant applications.
Place: InterContinental Chicago Hotel, 505 North Michigan Avenue, Chicago, IL 60611 (Telephone Conference Call).
Contact Person: David R. Jollie, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4166, MSC 7806, Bethesda, MD 20892, (301) 437–7927, *jollieda@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; ARRA: Biological Rhythms and Sleep Competitive Revisions.
Date: June 2, 2010.
Time: 4 p.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: Pier 5 Hotel, 711 Eastern Avenue, Baltimore, MD 21202.
Contact Person: Michael Selmanoff, PhD, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3134, MSC 7844, Bethesda, MD 20892, 301–435–1119, *mselmanoff@csr.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

*Date*d: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10885 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute on Drug Abuse; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 USC, as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable materials, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute on Drug Abuse Special Emphasis Panel, NIDA B/START SMALL GRANT REVIEW.
Date: June 9, 2010.
Time: 9 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, 6101 Executive Boulevard, Rockville, MD 20852 (Virtual Meeting).
Contact Person: Gerald L. McLaughlin, PhD, Scientific Review Administrator, Office of Extramural Affairs, National Institute on Drug Abuse, NIH, DHHS, Room 220, MSC 8401, 6101 Executive Blvd., Bethesda, MD, 301–402–6626, *gm145a@nih.gov.*

Name of Committee: National Institute on Drug Abuse Special Emphasis Panel, NIDA I/START SMALL GRANT REVIEW.
Date: June 9, 2010.
Time: 9 a.m. to 5 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, 6101 Executive Boulevard, Rockville, MD 20852 (Virtual Meeting).
Contact Person: Gerald L. McLaughlin, PhD, Scientific Review Administrator, Office of Extramural Affairs, National Institute on Drug Abuse, NIH, DHHS, Room 220, MSC 8401, 6101 Executive Blvd., Bethesda, MD, 301–402–6626, *gm145a@nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos.: 93.279, Drug Abuse and Addiction Research Programs, National Institutes of Health, HHS)

Dated: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10883 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute on Drug Abuse; Amended Notice of Meeting

Notice is hereby given of a change in the meeting of the National Institute on Drug Abuse Special Emphasis Panel, May 11, 2010, 1:30 p.m. to May 11, 2010, 3 p.m., National Institutes of Health, 6101 Executive Boulevard, Rockville, MD 20852 which was published in the **Federal Register** on March 24, 2010, 75; 56 FR 2010–6266.

The date of the meeting was changed from May 11, 2010 to May 18, 2010. The meeting is closed to the public.

Dated: *April 29, 2010.*

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10881 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute on Drug Abuse; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 USC, as amended. The contract proposals and the discussions could disclose confidential trade secrets or commercial property such as patentable materials, and personal information concerning individuals associated with the contract proposals, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute on Drug Abuse Special Emphasis Panel; N44DA–10–5542: Rapid Assessment Tools of Sexual and Drug Use Risk Behaviors.

Date: May 21, 2010.

Time: 1 p.m. to 3 p.m.

Agenda: To review and evaluate contract proposals.

Place: National Institutes of Health, 6101 Executive Boulevard, Rockville, MD 20852 (Telephone Conference Call).

Contact Person: Minna Liang, PhD., Scientific Review Officer, Training and Special Projects Review Branch, Office of Extramural Affairs, National Institute on Drug Abuse, NIH, 6101 Executive Blvd., Room 220, MSC 8401, Bethesda, MD 20852, 301–435–1432, *liangm@nida.nih.gov*.

(Catalogue of Federal Domestic Assistance Program Nos.: 93.279, Drug Abuse and Addiction Research Programs, National Institutes of Health, HHS)

Dated: *April 29, 2010.*

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10879 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute on Drug Abuse; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in section 552b(c)(6), Title 5 U.S.C., as amended, for the review, discussion, and evaluation of individual intramural programs and projects conducted by the National Institute on Drug Abuse, including consideration of personnel qualifications and performances, and the competence of individual investigators, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Board of Scientific Counselors, NIDA.

Date: June 22, 2010.

Time: 8:30 a.m. to 5 p.m.

Agenda: To review and evaluate personal qualifications and performance, and competence of individual investigators.

Place: Intramural Research Program, National Institute on Drug Abuse, Johns Hopkins Bayview Campus, Baltimore, MD 21223.

Contact Person: Stephen J. Heishman, PhD, Research Psychologist, Clinical Pharmacology Branch, Intramural Research Program, National Institute on Drug Abuse, National Institutes of Health, DHHS, 5500 Nathan Shock Drive, Baltimore, MD 21224, (410) 550–1547.

(Catalogue of Federal Domestic Assistance Program Nos.: 93.279, Drug Abuse and Addiction Research Programs, National Institutes of Health, HHS)

Dated: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10876 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Diabetes and Digestive and Kidney Diseases; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Diabetes and Digestive and Kidney Diseases Special Emphasis Panel; DDN Fellowship Panel.

Date: June 17, 2010.

Time: 8 a.m. to 5:30 p.m.

Agenda: To review and evaluate grant applications.

Place: Hotel Rouge, 1315 16th Street, NW., Washington, DC 20036.

Contact Person: Thomas A. Tatham, PhD, Scientific Review Officer, Review Branch, DEA, NIDDK, National Institutes of Health, Room 760, 6707 Democracy Boulevard, Bethesda, MD 20892–5452, (301) 594–3993, *tathamt@mail.nih.gov.*

Name of Committee: National Institute of Diabetes and Digestive and Kidney Diseases Special Emphasis Panel; NIDDK KUH–Fellowship Review.

Date: June 22, 2010.

Time: 10 a.m. to 1 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Two Democracy Plaza, 6707 Democracy Boulevard, Bethesda, MD 20892 (Telephone Conference Call).

Contact Person: Xiaodu Guo, MD, PhD, Scientific Review Officer, Review Branch, DEA, NIDDK, National Institutes of Health, Room 761, 6707 Democracy Boulevard, Bethesda, MD 20892–5452, (301) 594–4719, *guox@extra.niddk.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.847, Diabetes, Endocrinology and Metabolic Research; 93.848, Digestive Diseases and Nutrition Research; 93.849, Kidney Diseases, Urology and Hematology Research, National Institutes of Health, HHS)

Dated: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10896 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Diabetes and Digestive and Kidney Diseases; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Diabetes and Digestive and Kidney Diseases Special Emphasis Panel, Collaborative Interdisciplinary Team Ancillary Study.

Date: June 10, 2010.

Time: 2 p.m. to 4 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Two Democracy Plaza, 6707 Democracy Boulevard, Bethesda, MD 20892 (Telephone Conference Call).

Contact Person: D.G. Patel, PhD, Scientific Review Officer, Review Branch, DEA, NIDDK, National Institutes of Health, Room 756, 6707 Democracy Boulevard, Bethesda, MD 20892–5452. (301) 594–7682. *pateldg@niddk.nih.gov.*

Name of Committee: National Institute of Diabetes and Digestive and Kidney Diseases Special Emphasis Panel, NIDDK DEM Fellowships.

Date: June 14–15, 2010.

Time: 1 p.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Residence Inn Bethesda, 7335 Wisconsin Avenue, Bethesda, MD 20814.

Contact Person: Robert Wellner, PhD, Scientific Review Officer, Review Branch, DEA, NIDDK, National Institutes of Health, Room 757, 6707 Democracy Boulevard, Bethesda, MD 20892–5452. (301) 594–4721. *rw175w@nih.gov.*

Name of Committee: National Institute of Diabetes and Digestive and Kidney Diseases Special Emphasis Panel, R13 Conference Review.

Date: June 17, 2010.

Time: 2 p.m. to 4 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Two Democracy Plaza, 6707 Democracy Boulevard, Bethesda, MD 20892.

Contact Person: D.G. Patel, PhD, Scientific Review Officer, Review Branch, DEA, NIDDK, National Institutes of Health, Room 756, 6707 Democracy Boulevard, Bethesda, MD 20892–5452. (301) 594–7682. *pateldg@niddk.nih.gov.*

Name of Committee: National Institute of Diabetes and Digestive and Kidney Diseases Special Emphasis Panel, Bio Samples from Diabetes Clinical Studies.

Date: July 13, 2010.

Time: 8 a.m. to 5 p.m.

Agenda: To review and evaluate grant applications.

Place: Bethesda Marriott Suites, 6711 Democracy Boulevard, Bethesda, MD 20817.

Contact Person: D.G. Patel, PhD, Scientific Review Officer, Review Branch, DEA, NIDDK, National Institutes of Health, Room 756, 6707 Democracy Boulevard, Bethesda, MD 20892–5452. (301) 594–7682. *pateldg@niddk.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.847, Diabetes, Endocrinology and Metabolic Research; 93.848, Digestive Diseases and Nutrition Research; 93.849, Kidney Diseases, Urology and Hematology Research, National Institutes of Health, HHS)

Dated: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10895 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Eunice Kennedy Shriver National Institute of Child Health & Human Development; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Child Health and Human Development Special Emphasis Panel, Pharmacogenomics of Preterm Birth Prevention and Treatment.

Date: May 27, 2010.

Time: 2 p.m. to 3:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6100 Executive Boulevard, Rockville, MD 20852 (Telephone Conference Call).

Contact Person: Sathasiva B. Kandasamy, PhD, Scientific Review Administrator, Division of Scientific Review, National Institute of Child Health and Human Development, 6100 Executive Boulevard, Room 5B01, Bethesda, MD 20892–9304. (301) 435–6680. *skandasa@mail.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.864, Population Research; 93.865, Research for Mothers and Children; 93.929, Center for Medical Rehabilitation Research; 93.209, Contraception and Infertility Loan Repayment Program, National Institutes of Health, HHS)

Dated: April 28, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10893 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2010–N–0217]

Device Improvements to Reduce the Number of Under-Doses, Over-Doses, and Misaligned Exposures From Therapeutic Radiation; Public Meeting; Request for Comments

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of public meeting; requests for comments.

The Food and Drug Administration (FDA) is announcing a public meeting entitled "Device Improvements to Reduce the Number of Under-doses, Over-doses, and Misaligned Exposures from Therapeutic Radiation." The purpose of this meeting is to discuss steps that could be taken by manufacturers of linear accelerators, radiation therapy treatment planning systems, and radiation therapy simulators to help reduce misadministration and misaligned exposures. FDA is seeking input on this topic and requests comments on a number of related questions.

Date and Time: The public meeting will be held on June 9 and 10, 2010, from 8 a.m. to 5 p.m.

Location: The public meeting will be held at the Hilton Hotel Washington DC North/Gaithersburg, 620 Perry Pkwy., Gaithersburg, MD 20877.

Contact Person: Simon Choi, Center for Devices and Radiological Health, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 66, rm. 5400, Silver Spring, MD 20993, 301–796–5426; e-mail: *simon.choi@fda.hhs.gov*.

Registration and Requests for Oral Presentations: Persons interested in attending the public meeting must register by May 15, 2010. If you wish to attend the public meeting, you must register by e-mail at *CDRHRadiationTherapy@fda.hhs.gov* or by contacting Simon Choi (see *Contact Person*). Provide complete contact information for each attendee, including name, title, company or organization,

address, telephone number, and e-mail (if appropriate).

Registration is free and will be on a first-come, first-served basis. Early registration is recommended because seating is limited. FDA may limit the number of participants from each organization based on space limitations. Registrants will receive confirmation once they have been accepted. Onsite registration on the day of the public meeting will be provided on a space-available basis beginning at 7 a.m.

If you wish to make an oral presentation during any of the sessions at the meeting (see section I of this document, **Public Meeting**), you must indicate this at the time of registration. FDA has included specific questions for comment in section II of this document, **Questions for Comment**. You should also identify the session(s) during which you would like to present, as well as the question(s) you would like to address in each session. In order to keep each session focused on the topic at hand, presentations given during each session should address only the topic specified for that session. FDA will do its best to accommodate requests to speak. Individuals and organizations with common interests are urged to consolidate or coordinate their presentations, and to request time for a joint presentation. FDA will determine the amount of time allotted to each presenter and the approximate time that each oral presentation is scheduled to begin.

If you would like to participate in any of the four planned round-table discussions (see section I of this document, **Public Meeting**), you must indicate this interest at the time of registration, and also submit a brief statement that describes your experience with radiation therapy devices. FDA is seeking participants interested in engaging in one of four round-table discussions related to the presentations given during each of the earlier sessions of the meeting. Each round-table discussion will include no more than 10 non-FDA participants. Only one participant from an organization or company will be assigned to each discussion group. FDA will attempt to have a range of constituencies represented in each discussion group. Others in attendance at the public meeting will have an opportunity to listen to each round-table discussion.

If you need special accommodations due to a disability, please contact Simon Choi (see *Contact Person*) at least 7 days in advance of the meeting.

Comments: FDA is holding this public meeting to obtain information on a number of questions regarding steps manufacturers of radiation therapy devices could take to help reduce over-doses, under-doses, or misaligned exposures from therapeutic radiation. The deadline for submitting comments related to this public meeting is May 15, 2010, by 5 p.m. EST.

Regardless of attendance at the public meeting, interested persons may submit written or electronic comments. Submit written comments to the Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852. Submit electronic comments to *http://www.regulations.gov*. Submit a single copy of electronic comments or two paper copies of any mailed comments, except that individuals may submit one paper copy. Comments are to be identified with the docket number found in brackets in the heading of this document. In addition, when responding to specific questions as outlined in section II of this document, please identify the question you are addressing. Received comments may be seen in the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

SUPPLEMENTARY INFORMATION:

I. Public Meeting

The objective of this public meeting is to discuss steps that could be taken by manufacturers of linear accelerators, radiation therapy treatment planning systems, and radiation therapy simulators to help reduce misadministration and misaligned exposures. FDA is seeking input on this topic and requests comments on a number of related questions.

The public meeting will be held over the course of 2 days. Each day will be divided into two sessions. Day 1 will focus on equipment features that manufacturers should incorporate into radiation therapy devices (morning session) and software (afternoon session). Day 2 will focus on steps manufacturers should take to improve training of individuals who use these devices (morning session) and steps to improve quality assurance (QA) at medical facilities (afternoon session). During each session, members of the public may present oral comments related to the topic of that session. Specific questions for comment are listed in section II of this document, **Questions for Comment**. Individuals who are interested in giving an oral presentation during any of the sessions must indicate this interest at the time of registration and must also identify the session(s) at which they would like to present (see *Registration and Requests for Oral Presentations*). In order to keep each session focused on the topic at hand, each oral presentation should address only the topic specified for that session. Commentators are free to submit written comments on any topic(s) to the open docket (see *Comments*). FDA will schedule speakers for each session as time permits.

To close each of the four sessions, FDA will hold a round-table discussion between FDA staff and selected participants representing a range of constituencies (for more information about participating in the round-table discussion, see *Registration and Requests for Oral Presentations*). The participants in each round-table discussion will remark on the presentations given during the session, engage in a dialogue with each other and FDA staff, and provide closing thoughts on the session. Round-table participants will not be asked to develop consensus opinions during the discussion, but rather to provide their individual perspectives. Others in attendance at the meeting will have an opportunity to listen to each round-table discussion.

In advance of the public meeting, additional information, including a meeting agenda with a speakers' schedule for each session, will be made available on the Internet. This information will be placed on file in the public docket (docket number found in brackets in the heading of this document), which is available at *http://www.regulations.gov*. This information will also be available at *http://www.fda.gov/MedicalDevices/NewsEvents/WorkshopsConferences/default.htm* (select the appropriate meeting from the list).

II. Questions for Comment

A. Device Improvements and Reporting

1. Describe issues with misadministrations and your suggestions to address the safety issues.

2. Are there any hardware and software features that manufacturers can build into radiation therapy devices to reduce underexposures, overexposures, or misaligned exposures to ionizing radiation during radiation therapy?

3. What techniques do you recommend for improving therapists attention (e.g. a dead-man switch to assure operator attention). Should efforts to improve device safety features include: incorporation of access controls and audit capabilities into equipment to identify the specific user(s) of the device during any particular treatment? If so, why, and what access controls and audit

capabilities should be incorporated? If not, why not?

4. If certain changes are desirable as additional safeguards for the devices, how feasible is it to retrofit existing units in the field?

5. Should manufacturers standardize their display format to ensure that treatment settings, protocols, and collimator positions are displayed taking human factors into consideration and are recorded for physician review?

6. Should manufacturers submit more data to FDA as part of their premarket submissions for approval or clearance of devices, related to the safety of these devices? If so, why, and what data should be submitted? If not, why not?

7. Should there be a mandatory "time-out" built into the equipment, similar to what already has been implemented for surgical procedures, to confirm that all settings for the equipment are correct and allow adequate time for QA? If not, why not?

8. Should manufacturers provide better instructions and specifics (i.e. QA methodology) for acceptance testing and/or commissioning due to new and/or unique features/capabilities? If so, why and what should be included?

9. Other than requiring a facility to report to FDA, how can FDA ensure that facilities report to FDA significant under-doses and over-doses? Should there be a quantitative metric used to define a medical event similar to that used by the Nuclear Regulatory Commission (e.g. +/- 20% variation from intended dose)?

10. What prevents users from participating in voluntary reporting?

11. How can FDA encourage reporting and prevent workarounds even when no clinically significant adverse event occurs?

B. User Training

1. Should manufacturers provide training to ensure equipment users have adequate understanding of equipment capabilities, operating principles for the technology, general information about patient dose, and specific dose-related equipment features? If so, why, and what training should be provided? If not, why not?

2. If manufacturers provide such training, which personnel should receive it? In your response, please consider dosimetrists, physicists, radiation therapists or technologists in other specialties and departmental administrators as well as physicians in all medical specialties who may operate radiation therapeutic equipment.

3. If manufacturers provide such training, what is the most effective timing for a new installation and how frequently should it be repeated for optimum implementation? Should manufacturers recommend an internal training program for use by the facility to insure continued staff competence?

4. For software patches and upgrades, how is the software tested for hazard analysis, verification and validation? Should manufacturers perform additional testing to adequately test software patches?

5. Would standardizing terminology and standardizing design of control panels facilitate safe use of the equipment?

6. Should custom-tailored educational material, such as pamphlets, pocket cards, videos etc. that highlight unique features of the equipment, be provided with new equipment?

C. Quality Assurance Measures

1. Is there a model QA program that exists which is widely accepted? If so, please describe.

2. What types of QA should be the responsibility of the facility, the physicist, the operator, others?

3. Should manufacturers provide QA procedures to medical facilities and users of radiation therapy devices? If so, why, and what instructions should be provided? If not, why not? How extensive should they be?

4. Should manufacturers provide training on QA practices? If so, why, what type of training should be provided, and to which personnel? If not, why not and who should?

III. Transcripts

Please be advised that as soon as a transcript is available, it will be accessible at *http://www.regulations.gov*. It may be viewed at the Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD. A transcript will also be available in either hardcopy or on CD–ROM, after submission of a Freedom of Information request. Written requests are to be sent to Division of Freedom of Information (HFI–35), Office of Management Programs, Food and Drug Administration, 5600 Fishers Lane, rm. 6–30, Rockville, MD 20857.

Dated: May 3, 2010.

Leslie Kux,

Acting Assistant Commissioner for Policy.

[FR Doc. 2010–10754 Filed 5–6–10; 8:45 am]

BILLING CODE 4160–01–S

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Amended Notice of Meeting

Notice is hereby given of a change in the meeting of the Center for Scientific Review Special Emphasis Panel, May 28, 2010, 12 p.m. to May 28, 2010, 2:30 p.m., National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892 which was published in the **Federal Register** on April 28, 2010, 75 FR 22412.

The meeting has been changed to an Internet assisted meeting. The meeting time has been changed to 8 a.m. to 7 p.m. The meeting location remains the same. The meeting is closed to the public.

Dated: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10873 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Amended Notice of Meeting

Notice is hereby given of a change in the meeting of the Center for Scientific Review Special Emphasis Panel, May 19, 2010, 12 p.m. to May 19, 2010, 5 p.m., Tata Communications, 2355 Dulles Corner Boulevard, 7th Floor, Herndon, VA 20171 which was published in the **Federal Register** on April 26, 2010, 75 FR 21641.

The meeting has been changed to a Hybrid meeting. The meeting date, time and location remain the same. The meeting is closed to the public.

Dated: April 29, 2010.

Jennifer Spaeth,

Director, Office of Federal Advisory Committee Policy.

[FR Doc. 2010–10871 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2010–N–0001]

Food Protection Workshop; Public Workshop

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of public workshop.

SUMMARY: The Food and Drug Administration (FDA), Office of Regulatory Affairs (ORA), Southwest Regional Office (SWRO), in co-sponsorship with the University of Arkansas (UA) Institute of Food Science and Engineering, is announcing a public workshop entitled "Food Protection Workshop." This public workshop is intended to provide information about food safety, food defense, the regulations authorized by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (the Bioterrorism Act), and other related subjects to the Food Protection Plan as it relates to food establishments such as farms, manufacturers, processors, distributors, retailers, and restaurants.

Date and Time: This public workshop will be held on June 9 and 10, 2010, from 8 a.m. to 5 p.m.

Location: The public workshop will be held at the Continuing Education Center, Two East Center St., Fayetteville, AR (located downtown).

Contact: David Arvelo, Food and Drug Administration, Southwest Regional Office, 4040 North Central Expressway, suite 900, Dallas, TX 75204, 214–253–4952, FAX: 214–253–4970, or e-mail: *david.arvelo@fda.hhs.gov*.

For information on accommodation options, visit *http://www.uark.edu/ua/foodpro/Workshops/Food_Safety_Defense_Workshop.html* or contact Steven C. Seideman, 2650 North Young Ave., Institute of Food Science & Engineering, University of Arkansas, Fayetteville, AR 72704, 479–575–4221, FAX: 479–575–2165, or e-mail: *seideman@uark.edu*.

Registration: You are encouraged to register by May 26, 2010. The University of Arkansas has a $250 registration fee to cover the cost of facilities, materials, speakers, and breaks. There is no fee for FDA employees. Seats are limited; please submit your registration as soon as possible. Course space will be filled in order of receipt of registration. Those accepted into the course will receive confirmation. Registration will close after the course is filled. Registration at the site is not guaranteed but may be possible on a space available basis on the day of the public workshop beginning at 8 a.m. The cost of registration at the site is $350 payable to: "The University of Arkansas." If you need special accommodations due to a disability, please contact Steven C. Seideman (see *Contact*) at least 14 days in advance.

To register, please visit *http://www.uark.edu/ua/foodpro/Workshops/Food_Safety_Defense_Workshop.html* to register online or submit a check or money order for $250 payable to the "The University of Arkansas." Mail to: Institute of Food Science & Engineering, University of Arkansas, 2650 North Young Ave., Fayetteville, AR 72704 along with the following information: Your name, affiliation, mailing address, phone number, fax, e-mail, and whether special accommodations are required.

Transcripts: Transcripts of the public workshop will not be available due to the format of this workshop. Workshop handouts may be requested at cost through the Freedom of Information Office (HFI–35), Food and Drug Administration, 5600 Fishers Lane, rm. 12A–16, Rockville, MD 20857, approximately 15 working days after the public workshop at a cost of 10 cents per page.

SUPPLEMENTARY INFORMATION: This public workshop is being held in response to the large volume of food protection concerns from food establishments (such as farms, manufacturers, processors, distributors, retailers, and restaurants) originating from the area covered by the FDA Dallas District Office. The SWRO presents this workshop to help achieve objectives set forth in section 406 of the Food and Drug Administration Modernization Act of 1997 (21 U.S.C. 393), which include working closely with stakeholders and maximizing the availability and clarity of information to stakeholders and the public. This is consistent with the purposes of the Small Business Representative Program, which are in part to respond to industry inquiries, develop educational materials, sponsor workshops and conferences to provide firms, particularly small businesses, with firsthand working knowledge of FDA's guidance, requirements, and compliance policies. This workshop is also consistent with the Small Business Regulatory Enforcement Fairness Act of 1996 (Public Law 104–121), as outreach activities by Government agencies to small businesses.

The goal of this public workshop is to present information that will enable food establishments (such as farms, manufacturers, processors, distributors, retailers, and restaurants) to better comply with any regulations authorized by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (the Bioterrorism Act) relevant to such establishments, and to be aware of recommendations in food protection guidance, especially in light of growing concerns about food safety and defense. Information presented will be based on regulations, guidances, and information previously made available to the public. Topics to be discussed at the workshop include: (1) Food defense programs, (2) good manufacturing practices, (3) reportable food registry, (4) Hazard Analysis Critical Control Point (HACCP), (5) good agricultural practices, (6) food recalls, (7) pathogens of public health concern, and (8) risk management and vulnerability assessments and other related topics. For more information, please visit *http://www.uark.edu/ua/foodpro/Workshops/Food_Safety_Defense_Workshop.html*. FDA expects that participation in this public workshop will provide regulated industry with greater understanding of the regulatory and guidance perspectives on food protection and increase voluntary compliance and food defense awareness.

Dated: May 3, 2010.

Leslie Kux,

Acting Assistant Commissioner for Policy.

[FR Doc. 2010–10792 Filed 5–6–10; 8:45 am]

BILLING CODE 4160–01–S

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Office of the Director, Office of Biotechnology Activities; Notice of a Safety Symposium

There will be a safety symposium entitled "Gene-Modified T Cells: Challenges in Clinical Trial Design with Novel Receptors." The meeting will be open to the public, with attendance limited to space available. Individuals who plan to attend and need special assistance, such as sign language interpretation or other reasonable accommodations, should notify the Contact Person listed below in advance of the meeting. For further information concerning this meeting contact Ms. Chezelle George, Administrative Assistant, Office of Biotechnology Activities, Office of the Director, National Institutes of Health, 6705 Rockledge Drive, Room 750, Bethesda, MD 20892–7985, 301–496–9838, *georgec@mail.nih.gov*.

Name of Committee: Recombinant DNA Advisory Committee.

Date: June 15, 2010.

Time: 8 a.m. to 5:30 p.m.

Agenda: The Office of Biotechnology Activities (OBA) and NIH Recombinant DNA Advisory Committee will host a symposium entitled "Gene Modified T Cells: Challenges in Clinical Trial Design with Novel Receptors" on June 15, 2010 at the Rockville Hotel and Executive Center. Experts will discuss data from trials conducted to date, the selection of novel antigen targets, the

potential risks of off-target effects and clinical trial design strategies that can maximize both anti-tumor effect and safety. An agenda will be posted to OBA's Web site closer to the meeting date. Please check the meeting agenda at *http://oba.od.nih.gov/rdna/rdna.html* for more information.

Place: Rockville Hotel and Executive Center, 1750 Rockville Pike, Rockville, MD 20892.

Contact Person: Chezelle George, Administrative Assistant, Office of Science Policy, Office of Biotechnology Activities, National Institutes of Health, 6705 Rockledge Drive, Suite 750–A1, Bethesda, MD 20892, 301–496–9838, *georgec@mail.nih.gov*.

Any interested person may file written comments with the panel by forwarding the statement to the Contact Person listed on this notice. The statement should include the name, address, telephone number and when applicable, the business or professional affiliation of the interested person. Background information may be obtained by contacting NIH OBA by e-mail *oba@od.nih.gov*

Dated: April 29, 2010.

Jacqueline Corrigan-Curay,

Acting Director, Office of Biotechnology Activities, National Institutes of Health.

[FR Doc. 2010–10864 Filed 5–6–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Internal Agency Docket No. FEMA–1906–DR; Docket ID FEMA–2010–0002]

Mississippi; Major Disaster and Related Determinations

AGENCY: Federal Emergency Management Agency, DHS.

ACTION: Notice.

SUMMARY: This is a notice of the Presidential declaration of a major disaster for the State of Mississippi (FEMA–1906–DR), dated April 29, 2010, and related determinations.

DATES: *Effective Date:* April 29, 2010.

FOR FURTHER INFORMATION CONTACT: Peggy Miller, Recovery Directorate, Federal Emergency Management Agency, 500 C Street, SW., Washington, DC 20472, (202) 646–3886.

SUPPLEMENTARY INFORMATION: Notice is hereby given that, in a letter dated April 29, 2010, the President issued a major disaster declaration under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121 *et seq.* (the "Stafford Act"), as follows:

I have determined that the damage in certain areas of the State of Mississippi resulting from severe storms, tornadoes, and flooding during the period of April 23–24, 2010, is of sufficient severity and magnitude to warrant a major disaster declaration under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121 *et seq.* (the "Stafford Act"). Therefore, I declare that such a major disaster exists in the State of Mississippi.

In order to provide Federal assistance, you are hereby authorized to allocate from funds available for these purposes such amounts as you find necessary for Federal disaster assistance and administrative expenses.

You are authorized to provide assistance for debris removal (Category A) for 72 hours of the State's choosing and emergency protective measures (Category B), limited to direct Federal assistance, under the Public Assistance program and Individual Assistance in the designated areas, and Hazard Mitigation throughout the State. Consistent with the requirement that Federal assistance is supplemental, any Federal funds provided under the Stafford Act for Public Assistance, Hazard Mitigation, and Other Needs Assistance will be limited to 75 percent of the total eligible costs.

Further, you are authorized to make changes to this declaration for the approved assistance to the extent allowable under the Stafford Act.

The time period prescribed for the implementation of section 310(a), Priority to Certain Applications for Public Facility and Public Housing Assistance, 42 U.S.C. 5153, shall be for a period not to exceed six months after the date of this declaration.

The Federal Emergency Management Agency (FEMA) hereby gives notice that pursuant to the authority vested in the Administrator, under Executive Order 12148, as amended, Michael Bolch, of FEMA is appointed to act as the Federal Coordinating Officer for this major disaster.

The following areas of the State of Mississippi have been designated as adversely affected by this major disaster:

Choctaw and Yazoo Counties for Individual Assistance.

Choctaw and Yazoo Counties for debris removal (Category A), for 72 hours of the State's choosing and emergency protective measures (Category B), limited to direct Federal assistance, under the Public Assistance program.

All counties in the State of Mississippi are eligible to apply for assistance under the Hazard Mitigation Grant Program.

The following Catalog of Federal Domestic Assistance Numbers (CFDA) are to be used for reporting and drawing funds: 97.030, Community Disaster Loans; 97.031, Cora Brown Fund; 97.032, Crisis Counseling; 97.033, Disaster Legal Services; 97.034, Disaster Unemployment Assistance (DUA); 97.046, Fire Management Assistance Grant; 97.048, Disaster Housing Assistance to Individuals and Households In Presidentially Declared Disaster Areas; 97.049, Presidentially Declared Disaster Assistance—Disaster Housing Operations for Individuals and Households; 97.050, Presidentially Declared Disaster Assistance to Individuals and Households—Other Needs; 97.036, Disaster Grants—Public Assistance (Presidentially Declared Disasters); 97.039, Hazard Mitigation Grant.

W. Craig Fugate,

Administrator, Federal Emergency Management Agency.

[FR Doc. 2010–10789 Filed 5–6–10; 8:45 am]

BILLING CODE 9111–23–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Internal Agency Docket No. FEMA–1906–DR; Docket ID FEMA–2010–0002]

Mississippi; Amendment No. 2 to Notice of a Major Disaster Declaration

AGENCY: Federal Emergency Management Agency, DHS.

ACTION: Notice.

SUMMARY: This notice amends the notice of a major disaster declaration for the State of Mississippi (FEMA–1906–DR), dated April 29, 2010, and related determinations.

DATES: *Effective Date:* May 1, 2010.

FOR FURTHER INFORMATION CONTACT: Peggy Miller, Recovery Directorate, Federal Emergency Management Agency, 500 C Street, SW., Washington, DC 20472, (202) 646–3886.

SUPPLEMENTARY INFORMATION: The notice of a major disaster declaration for the State of Mississippi is hereby amended to include the following areas among those areas determined to have been adversely affected by the event declared a major disaster by the President in his declaration of April 29, 2010.

Monroe and Union Counties for Individual Assistance

Choctaw and Yazoo Counties for Public Assistance, including direct Federal assistance (already designated for Individual Assistance and debris removal [Category A], for 72 hours of the State's choosing and emergency protective measures [Category B], limited to direct Federal assistance, under the Public Assistance program).

Attala and Holmes Counties for Public Assistance, including direct Federal assistance, (already designated for Individual Assistance).

The following Catalog of Federal Domestic Assistance Numbers (CFDA) are to be used for reporting and drawing funds: 97.030, Community Disaster Loans; 97.031, Cora Brown Fund; 97.032, Crisis Counseling; 97.033, Disaster Legal Services; 97.034, Disaster Unemployment Assistance (DUA); 97.046, Fire Management Assistance Grant;

97.048, Disaster Housing Assistance to Individuals and Households In Presidentially Declared Disaster Areas; 97.049, Presidentially Declared Disaster Assistance—Disaster Housing Operations for Individuals and Households; 97.050, Presidentially Declared Disaster Assistance to Individuals and Households—Other Needs; 97.036, Disaster Grants—Public Assistance (Presidentially Declared Disasters); 97.039, Hazard Mitigation Grant.

W. Craig Fugate,

Administrator, Federal Emergency Management Agency.

[FR Doc. 2010–10791 Filed 5–6–10; 8:45 am]

BILLING CODE 9111–23–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Internal Agency Docket No. FEMA–1906–DR]

Docket ID FEMA–2010–0002

Mississippi; Amendment No. 3 to Notice of a Major Disaster Declaration

AGENCY: Federal Emergency Management Agency, DHS.

ACTION: Notice.

SUMMARY: This notice amends the notice of a major disaster declaration for the State of Mississippi (FEMA–1906–DR), dated April 29, 2010, and related determinations.

DATES: *Effective Date:* May 2, 2010.

FOR FURTHER INFORMATION CONTACT: Peggy Miller, Recovery Directorate, Federal Emergency Management Agency, 500 C Street, SW., Washington, DC 20472, (202) 646–3886.

SUPPLEMENTARY INFORMATION: The notice of a major disaster declaration for the State of Mississippi is hereby amended to include the following area among those areas determined to have been adversely affected by the event declared a major disaster by the President in his declaration of April 29, 2010.

Oktibbeha County for Individual Assistance.

(The following Catalog of Federal Domestic Assistance Numbers (CFDA) are to be used for reporting and drawing funds: 97.030, Community Disaster Loans; 97.031, Cora Brown Fund; 97.032, Crisis Counseling; 97.033, Disaster Legal Services; 97.034, Disaster Unemployment Assistance (DUA); 97.046, Fire Management Assistance Grant; 97.048, Disaster Housing Assistance to Individuals and Households in Presidentially Declared Disaster Areas; 97.049, Presidentially Declared Disaster Assistance—Disaster Housing Operations for Individuals and Households; 97.050, Presidentially Declared Disaster Assistance to Individuals and Households—Other Needs; 97.036, Disaster Grants—Public Assistance (Presidentially Declared Disasters); 97.039, Hazard Mitigation Grant.)

W. Craig Fugate,

Administrator, Federal Emergency Management Agency.

[FR Doc. 2010–10790 Filed 5–6–10; 8:45 am]

BILLING CODE 9111–23–P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–5376–N–32]

Tracking the Use of CDBG Homeowners and Small Landlords Disaster Assistance Grants

AGENCY: Office of the Chief Information Officer, HUD.

ACTION: Notice.

SUMMARY: The proposed information collection requirement described below has been submitted to the Office of Management and Budget (OMB) for review, as required by the Paperwork Reduction Act. The Department is soliciting public comments on the subject proposal.

This study will evaluate the role of supplemental CDBG disaster recovery funding in housing recovery in the three states most affected by hurricanes Katrina and Rita (Louisiana, Mississippi, and Texas) and identify the most important factors affecting property owners' willingness to rebuild or repair their storm-damaged properties.

DATES: *Comments Due Date:* June 7, 2010.

ADDRESSES: Interested persons are invited to submit comments regarding this proposal. Comments should refer to the proposal by name and/or OMB approval Number (2525–Pending) and should be sent to: HUD Desk Officer, Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget (OMB), New Executive Office Building, Washington, DC 20503; e-mail: *OIRA_Submission@omb.eop.gov;* fax: (202) 395–5806.

FOR FURTHER INFORMATION CONTACT: Cheryl A. Levine, PhD, Department of Housing and Urban Development, e-mail: *cheryl.a.levine@hud.gov,* phone (202) 402–3928; or Carol Star, Director, Program Evaluation Division; e-mail: Carol Star at *carol.s.star@hud.gov.* Copies of available documents submitted to OMB may be obtained from Dr. Levine.

SUPPLEMENTARY INFORMATION: This notice informs the public that the Department of Housing and Urban Development has submitted to OMB a request for approval of the Information collection described below. This notice is soliciting comments from members of the public and affecting agencies concerning the proposed collection of information to: (1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (2) Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information; (3) Enhance the quality, utility, and clarity of the information to be collected; and (4) Minimize the burden of the collection of information on those who are to respond; including through the use of appropriate automated collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses.

This notice also lists the following information:

Title of Proposal: Tracking the use of CDBG Homeowners and Small Landlords Disaster Assistance Grants.

OMB Approval Number: 2528–Pending.

Form Numbers: None.

Description of the Need for the Information and Its Proposed Use: This study will evaluate the role of supplemental CDBG disaster recovery funding in housing recovery in the three states most affected by hurricanes Katrina and Rita (Louisiana, Mississippi, and Texas) and identify the most important factors affecting property owners' willingness to rebuild or repair their storm-damaged properties.

Frequency of Submission: On Occasion.

REPORTING BURDEN

Number of respondents	Annual responses	×	Hours per response	=	Burden hours
984	1		0.75		738

Total Estimated Burden Hours: 738.

Status: New Collection.

Authority: Section 3507 of the Paperwork Reduction Act of 1995, 44 U.S.C. 35, as amended.

Dated: April 30, 2010.

Leroy McKinney, Jr.,

Departmental Reports Management Officer, Office of the Chief Information Officer.

[FR Doc. 2010–10747 Filed 5–6–10; 8:45 am]

BILLING CODE 4210–67–M

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–5375–N–17]

Federal Property Suitable as Facilities To Assist the Homeless

AGENCY: Office of the Assistant Secretary for Community Planning and Development, HUD.

ACTION: Notice.

SUMMARY: This Notice identifies unutilized, underutilized, excess, and surplus Federal property reviewed by HUD for suitability for possible use to assist the homeless.

DATES: *Effective Date: May 7, 2010.*

FOR FURTHER INFORMATION CONTACT: Kathy Ezzell, Department of Housing and Urban Development, 451 Seventh Street, SW., Room 7262, Washington, DC 20410; telephone (202) 708–1234; TTY number for the hearing- and speech-impaired (202) 708–2565, (these telephone numbers are not toll-free), or call the toll-free Title V information line at 800–927–7588.

SUPPLEMENTARY INFORMATION: In accordance with the December 12, 1988 court order in *National Coalition for the Homeless* v. *Veterans Administration,* No. 88–2503–OG (D.D.C.), HUD publishes a Notice, on a weekly basis, identifying unutilized, underutilized, excess and surplus Federal buildings and real property that HUD has reviewed for suitability for use to assist the homeless. Today's Notice is for the purpose of announcing that no additional properties have been determined suitable or unsuitable this week.

Dated: April 29, 2010.

Mark R. Johnston,

Deputy Assistant Secretary for Special Needs.

[FR Doc. 2010–10422 Filed 5–6–10; 8:45 am]

BILLING CODE 4210–67–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS–R5–R–2010–N020; BAC–4311–K9 S3]

John Heinz National Wildlife Refuge at Tinicum, Philadelphia and Delaware Counties, PA

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of intent to prepare a comprehensive conservation plan and environmental assessment; request for comments.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), intend to prepare a comprehensive conservation plan (CCP) and environmental assessment (EA) for John Heinz National Wildlife Refuge (NWR) at Tinicum in Philadelphia, Pennsylvania. We provide this notice in compliance with our CCP policy to advise other Federal and State agencies, Tribal Governments, and the public of our intentions, and to obtain suggestions and information on the scope of issues to consider in the planning process. We are also announcing public meetings and requesting public comments.

DATES: To ensure consideration, please send your written comments by June 11, 2010. We will announce opportunities for public input in local news media throughout the CCP process.

ADDRESSES: Send your comments or requests for more information by any of the following methods:

Electronic Mail: *northeastplanning@fws.gov.* Include "John Heinz NWR CCP" in the subject line of the message.

Facsimile: Attention: Nancy McGarigal, 413–253–8468.

U.S. Mail: U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035.

In-Person Drop-off. You may drop off comments during regular business hours at John Heinz NWR at Tinicum, 8601 Lindbergh Blvd., Philadelphia, PA 19153.

FOR FURTHER INFORMATION CONTACT: Gary Stolz, Refuge Manager, John Heinz NWR at Tinicum, 8601 Lindbergh Blvd., Philadelphia, PA 19153; phone: (215) 365–3118; electronic mail: *gary_stolz©fws.gov.*

SUPPLEMENTARY INFORMATION:

Introduction

With this notice, we initiate our process for developing a CCP for John Heinz NWR at Tinicum, in Philadelphia and Delaware Counties, Pennsylvania. This notice complies with our CCP policy to (1) advise other Federal and State agencies, Tribal Governments, and the public of our intention to conduct detailed planning on this refuge, and (2) obtain suggestions and information on the scope of issues to consider in the environmental document and during development of the CCP.

Background

The CCP Process

The National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd–668ee) (Administration Act), as amended by the National Wildlife Refuge System Improvement Act of 1997, requires us to develop a CCP for each national wildlife refuge. The purpose for developing a CCP is to provide refuge managers with a 15-year plan for achieving refuge purposes and contributing to the mission of the National Wildlife Refuge System (NWRS), consistent with sound principles of fish and wildlife management, conservation, legal mandates, and our policies. In addition to outlining broad management direction on conserving wildlife and their habitats, CCPs identify wildlife-dependent recreational opportunities available to the public, including opportunities for hunting, fishing, wildlife observation and photography, and environmental education and interpretation. We will review and update the CCP at least every 15 years in accordance with the Administration Act.

Each unit of the NWRS was established for specific purposes. We use these purposes as the foundation for developing and prioritizing the management goals and objectives for each refuge within the NWRS, and to determine how the public can use each

refuge. The planning process is a way for us and the public to evaluate management goals and objectives that will ensure the best possible approach to wildlife, plant, and habitat conservation, while providing for wildlife-dependent recreation opportunities that are compatible with each refuge's establishing purposes and the mission of the NWRS.

Our CCP process provides participation opportunities for Tribal, State, and local governments, conservation organizations, and the public. At this time, we encourage input in the form of issues, concerns, ideas, and suggestions for the future management of John Heinz NWR.

We will conduct the environmental review of this project and develop an EA in accordance with the requirements of the National Environmental Policy Act of 1969, as amended (NEPA) (42 U.S.C. 4321 *et seq.*); NEPA regulations (40 CFR parts 1500–1508); other appropriate Federal laws and regulations; and our policies and procedures for compliance with those laws and regulations.

John Heinz NWR

Under legislation passed by Congress in 1972, authorization was given to the Secretary of the Interior to acquire 1,200 acres to preserve Tinicum Marsh and establish a "Tinicum National Environmental Center." The Congressional mandate set forth for the refuge was to preserve, restore, and enhance habitat; provide opportunities for the public to study wildlife in its natural habitat; and to promote environmental education. In November 1991, in a bill sponsored by Congressman Curt Weldon (R–PA), the name of the refuge was changed to John Heinz National Wildlife Refuge at Tinicum to honor the late Senator who helped preserve Tinicum Marsh.

The refuge protects five varied habitats: Freshwater tidal marsh, impounded water, woods, meadow, and field. The 200 acres of freshwater tidal marsh represents approximately 80 percent of Pennsylvania's remaining coastal wetlands. The refuge is an important stopover for migratory birds along the Atlantic Flyway, and provides breeding habitat for several State-listed threatened and endangered species. It has over 10 miles of trails, and visitors can actually pass through, or by, most of the habitats using these trails.

John Heinz NWR is the most urban refuge managed by the Service. Over 100,000 visitors come to the refuge each year, and the refuge's urban setting provides unique opportunities for public education and involvement. To better address these opportunities and promote environmental education, the refuge completed construction on the Cusano Environmental Education Center in 2001.

The mission of the Cusano Environmental Education Center is to demonstrate, within an urban setting, the importance of the natural world to the quality of human life and to inspire visitors to become responsible stewards of the environment.

Scoping: Preliminary Issues, Concerns, and Opportunities. The planning team has identified some preliminary issues, concerns, and opportunities to address in the CCP. We list below the categories for issues we have identified. During public scoping, we expect additional issues may be raised.

(1) Ecoregional or ecosystemwide issues, such as climate change, regional land conservation, and protection of water quality throughout the Delaware River estuary;

(2) Biological program issues, such as habitat and species management needs, protection, restoration, monitoring, inventories, and research;

(3) Public use program issues, such as the breadth and quality of programs, public access, user conflicts, and use impacts on natural resources;

(4) Infrastructure and staffing issues, such as appropriateness of facilities, safety, accessibility, and additional staffing needs;

(5) Community relations and outreach issues and opportunities, such as tourism, and local economic impacts; and

(6) Coordination and communication issues and opportunities with other environmental educators, and Federal, State, and Tribal Governments, and with non-governmental conservation partners.

Public Meetings

We will give the public an opportunity to provide input at a public meeting. You can obtain the schedule from the refuge manager (*see* **FOR FURTHER INFORMATION CONTACT**). You may also send comments anytime during the planning process by mail, electronic mail, or facsimile (see **ADDRESSES**). There will be additional opportunities to provide public input once we have prepared a draft CCP.

Public Availability of Comments

Before including your address, phone number, electronic mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: March 29, 2010.

Richard O. Bennett,

Acting Regional Director, Northeast Region, U.S. Fish and Wildlife Service, Hadley, MA 01035.

[FR Doc. 2010–10819 Filed 5–6–10; 8:45 am]

BILLING CODE 4310–55–M

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS–R5–R–2010–N018; BAC–4311–K9 S3]

Montezuma National Wildlife Refuge, Seneca, Wayne, and Cayuga Counties, NY

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of intent to prepare a comprehensive conservation plan and environmental assessment; request for comments.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), intend to prepare a comprehensive conservation plan (CCP) and environmental assessment (EA) for Montezuma National Wildlife Refuge (NWR) in Seneca, Wayne, and Cayuga Counties, New York. We provide this notice in compliance with our CCP policy to advise other Federal and State agencies, Tribal Governments, and the public of our intentions, and to obtain suggestions and information on the scope of issues to consider in the planning process. We are also announcing public meetings and requesting public comments.

DATES: To ensure consideration, please send your written comments by June 30, 2010. We will announce opportunities for public input in local news media throughout the CCP process.

ADDRESSES: Send your comments or requests for more information by any of the following methods:

Electronic mail: northeastplanning@fws.gov. Include "Montezuma NWR CCP" in the subject line of the message.

Facsimile: Attention: Nancy McGarigal, 413–253–8468.

U.S. Mail: U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035.

In-Person Drop-off: You may drop off comments during regular business hours at Montezuma NWR, 3395 U.S. Route 20 East, Seneca Falls, NY 13148–9423.

FOR FURTHER INFORMATION CONTACT: Tom Jasikoff, Refuge Manager, Montezuma NWR, 3395 U.S. 20 East, Seneca Falls, NY 13148–9423; phone: (315) 568–5987; electronic mail: *tom_jasikoff@fws.gov.*

SUPPLEMENTARY INFORMATION:

Introduction

With this notice, we initiate our process for developing a CCP for Montezuma NWR in Seneca, Wayne, and Cayuga Counties, New York. This notice complies with our CCP policy to (1) advise other Federal and State agencies, Tribal Governments, and the public of our intention to conduct detailed planning on this refuge, and (2) obtain suggestions and information on the scope of issues to consider in the environmental document and during development of the CCP.

Background

The CCP Process

The National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd–668ee) (Administration Act), as amended by the National Wildlife Refuge System Improvement Act of 1997, requires us to develop a CCP for each national wildlife refuge. The purpose for developing a CCP is to provide refuge managers with a 15-year plan for achieving refuge purposes and contributing toward the mission of the National Wildlife Refuge System (NWRS), consistent with sound principles of fish and wildlife management, conservation, legal mandates, and our policies. In addition to outlining broad management direction on conserving wildlife and their habitats, CCPs identify wildlife-dependent recreational opportunities available to the public, including opportunities for hunting, fishing, wildlife observation and photography, and environmental education and interpretation. We will review and update the CCP at least every 15 years in accordance with the Administration Act.

Each unit of the NWRS was established for specific purposes. We use these purposes as the foundation for developing and prioritizing the management goals and objectives for each refuge within the NWRS mission, and to determine how the public can use each refuge. The planning process is a way for us and the public to evaluate management goals and objectives that will ensure the best possible approach to wildlife, plant, and habitat conservation, while providing for wildlife-dependent recreation opportunities that are compatible with each refuge's establishing purposes and the mission of the NWRS.

Our CCP process provides participation opportunities for Tribal, State, and local governments, conservation organizations, and the public. At this time, we encourage input in the form of issues, concerns, ideas, and suggestions for the future management of Montezuma NWR.

We will conduct the environmental review of this project and develop an EA in accordance with the requirements of the National Environmental Policy Act of 1969, as amended (NEPA) (42 U.S.C. 4321 *et seq.*); NEPA regulations (40 CFR parts 1500–1508); other appropriate Federal laws and regulations; and our policies and procedures for compliance with those laws and regulations.

Montezuma NWR

Montezuma NWR was established as a refuge in 1938 primarily in recognition of its importance as a stopover area for migratory birds and other wildlife. The refuge provides resting, feeding, and nesting habitat for waterfowl and other migratory birds and is located in the middle of one of the most active migratory bird pathways in the Atlantic Flyway. Over 1,000,000 migrating geese and ducks, and one of the largest concentrations of migrating shorebirds in New York, are observed each year. Located at the north end of Cayuga Lake in the Finger Lakes Region of New York, Montezuma NWR consists of 9,073 acres.

Refuge habitats are very diverse. They consist of approximately 4,700 acres of freshwater wetlands in 16 impoundments; 1,646 acres in floodplain forest; 360 acres in cropland; 700 acres in early or mid-successional forest; 584 acres in grassland, 157 acres in canals, river, or dikes, and the remainder in roads, trails and other infrastructure.

Montezuma NWR hosts over 150,000 visitors annually. Popular activities include driving on the 3-mile auto tour, observing and photographing nature on the 5.5 miles of walking trails, and hunting, fishing, or participating in the many educational and interpretive programs. The refuge visitor center, open from April 1 to November 30 each year, is a popular destination for visitors to the area.

Scoping: Preliminary Issues, Concerns, and Opportunities

The planning team is in the process of identifying preliminary issues, concerns, and opportunities to address in the CCP. We list below the categories for issues we have identified. During public scoping, we expect additional issues may be raised.

(1) Ecoregional or ecosystemwide issues, such as climate change, regional land conservation, and the protection of water quality throughout the West Oswego River watershed;

(2) Biological program issues, such as habitat and species management needs, protection, restoration, monitoring, inventories, and research;

(3) Public-use program issues, such as the breadth and quality of programs, public access, user conflicts, and use impacts on natural resources;

(4) Infrastructure and staffing issues, such as appropriateness of facilities, safety, accessibility, and additional staffing needs;

(5) Community relations and outreach issues and opportunities, such as tourism and local economic impacts; and

(6) Coordination and communication issues and opportunities with Federal, State, and Tribal Governments, and with non-governmental conservation partners.

Public Meetings

We will give the public an opportunity to provide input at a public meeting. You can obtain the schedule from the planning team leader or refuge manager (*see* **FOR FURTHER INFORMATION CONTACT**). You may also send comments anytime during the planning process by mail, electronic mail, or facsimile (*see* **ADDRESSES**). There will be additional opportunities to provide public input once we have prepared a draft CCP.

Public Availability of Comments

Before including your address, phone number, electronic mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: March 26, 2010.

James G. Geiger,

Acting Regional Director, Northeast Region, U.S. Fish and Wildlife Service.

[FR Doc. 2010–10822 Filed 5–6–10; 8:45 am]

BILLING CODE 4310–55–M

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[CACA 49834; L51010000.ER0000 LLCAD09000 LVRWB09B3160]

Notice of Availability of the Draft Environmental Impact Report and Draft Environmental Impact Statement for the Southern California Edison Eldorado-Ivanpah Transmission Project, California and Nevada

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of availability.

SUMMARY: In accordance with the National Environmental Policy Act of 1969, as amended, and the California Environmental Quality Act of 1970, the Department of the Interior, Bureau of Land Management (BLM), together with the California Public Utilities Commission, has prepared a Draft Environmental Impact Report (EIR)/ Environmental Impact Statement (EIS) for the proposed Eldorado-Ivanpah Transmission Project (EITP), and by this notice is announcing the opening of the comment period.

DATES: To ensure that comments will be considered, the BLM must receive written comments on the EITP Draft EIR/EIS within 45 days following the date the Environmental Protection Agency publishes its Notice of Availability in the **Federal Register.** The BLM will announce future meetings or hearings and any other public involvement activities at least 15 days in advance through public notices, media releases, or mailings.

ADDRESSES: You may submit comments related to the proposed EITP Draft EIR/ EIS by any of the following methods:

- *Web site: http://www.blm.gov/ca/st/en/fo/needles.html;*
- *E-mail: caeitp@blm.gov,* subject line EITP;
- *Fax:* (760) 326–7099; or
- *Mail or other delivery service:* George R. Meckfessel, Needles Field Office, 1303 South U.S. Highway 95, Needles, California 92363–4228.

Copies of the EITP Draft EIR/EIS are available in the Needles Field Office at the above address, or at the following Web site: *http://www.blm.gov/ca/st/en/fo/needles.html,* and at the BLM California State Office, 2800 Cottage Way, Sacramento, California 95825. Electronic (CD–ROM) or paper copies may also be obtained by contacting George Meckfessel at (760) 326–7000 or by e-mailing your request to *caeitp@blm.gov* and including your name and mailing address.

FOR FURTHER INFORMATION CONTACT: For further information and/or to have your name added to our mailing list, contact Tom Hurshman, Project Manager, telephone (970) 240–5345; fax (970) 240–5368; address 2465 South Townsend Avenue, Montrose, Colorado 81401; e-mail *Tom_Hurshman@blm.gov.*

SUPPLEMENTARY INFORMATION: The BLM's purpose and need for the EITP project is to respond to Southern California Edison's (SCE) application for a right-of-way (ROW) grant to construct and operate a double circuit 230-kilovolt (kV) transmission line to replace an existing 115-kV transmission line on public lands in compliance with Title V of the Federal Lands Management and Policy Act (FLPMA) (43 U.S.C. 1761–1771), the BLM ROW regulations, and other applicable Federal laws.

The upgraded transmission line would extend approximately 35 miles from southern Clark County, Nevada (28 miles), into northeastern San Bernardino County, California (7 miles). The project would also include a new Ivanpah substation in California near Primm, Nevada, which would serve as a connector hub for solar energy that may be produced by future solar generation projects in the Ivanpah Valley area. The existing Eldorado Substation would be modified to accommodate the new Eldorado-Ivanpah transmission line. The segment of transmission line to be replaced is approximately 36 miles long and originates at the existing Eldorado Substation in T. 25 S., R. 62 E., Sec. 1, Mount Diablo Meridian, and terminates at the proposed Ivanpah Substation in T. 16 N., R. 14 E., Sec. 4, San Bernardino Meridian.

The BLM will decide whether to approve, approve with modification, or deny issuance of a ROW authorization to SCE for the proposed EITP project. The EITP would carry electricity from several renewable energy projects proposed in and around the Ivanpah Valley, including the Ivanpah Solar Energy Generation System planned by BrightSource, LLC. The proposed transmission line and new substation would be constructed within an existing designated utility corridor. Telecommunications lines are also proposed. The public lands in the project area are managed by the BLM in accordance with the California Desert Conservation Area (CDCA) Plan and the Las Vegas Field Office Resource Management Plan.

As proposed by SCE, the transmission line would be sited within an existing ROW corridor designated in the CDCA plan and Las Vegas RMP. In addition to the proposed action and the no action alternatives, the EIR/EIS analyzes seven additional action alternatives that address alternative routes for the transmission and telecommunications lines.

A Notice of Intent to prepare an EIR/ EIS for the EITP project was published in the **Federal Register** on July 27, 2009, and was followed by a 30-day public scoping period. The BLM held an interagency meeting on July 1, 2009, to inform other agencies about the project and held formal scoping meetings for the public on July 28 and 29, 2009. Four primary areas of concern were identified during the public scoping process: (1) Impacts of the project on several biological resources, especially desert tortoise; (2) compatibility of the project with regional land uses such as the planned Southern Nevada Supplemental Airport; (3) compatibility of the project with other existing ROW designations; and (4) cumulative impacts. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Authority: 40 CFR 1506.6, 1506.10, and 43 CFR 1610.2

Thomas Pogacnik,

Deputy State Director.

[FR Doc. 2010–10664 Filed 5–6–10; 8:45 am]

BILLING CODE 4310–40–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[ID–320–1610 DQ–050D]

Notice of Availability of the Proposed Resource Management Plan and Final Environmental Impact Statement for the Pocatello Field Office, Idaho

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of availability.

SUMMARY: In accordance with the National Environmental Policy Act of 1969, as amended, and the Federal Land Policy and Management Act of 1976, as amended, the Bureau of Land Management (BLM) has prepared a Proposed Resource Management Plan/ Final Environmental Impact Statement

(PRMP/FEIS) for the Pocatello Field Office and by this notice is announcing its availability.

DATES: BLM planning regulations at 43 CFR 1610.5–2 state that any person who meets the conditions described may protest the BLM's PRMP/FEIS. A person who meets the conditions and files a protest must file the protest within 30 days of the date that the Environmental Protection Agency publishes its Notice of Availability in the **Federal Register.**

ADDRESSES: Copies of the Pocatello Field Office PRMP/FEIS have been sent to tribal governments, Federal, state, and local government agencies and to other stakeholders. Copies of the PRMP/FEIS are available for public inspection at the Pocatello Field Office, Bureau of Land Management, 4350 Cliffs Drive, Pocatello, Idaho 83204. Interested persons may also review the PRMP/FEIS on the Internet at *http://www.blm.gov/id/st/en/prog/planning.1.html.* All protests must be in writing and mailed to one of the following addresses:

Regular Mail: BLM Director (210), *Attention:* Brenda Williams, P.O. Box 66538, Washington, DC 20035.

Overnight Mail: BLM Director (210), *Attention:* Brenda Williams, 1620 L Street, NW., Suite 1075, Washington, DC 20036.

FOR FURTHER INFORMATION CONTACT: For further information contact Terry Lee Smith, RMP Project Manager, telephone (208) 478–6340; 4350 Cliffs Drive, Pocatello, Idaho 83204; e-mail *Terry_Lee_Smith@blm.gov.*

SUPPLEMENTARY INFORMATION: The planning area covers approximately 613,800 acres of public lands within nine counties in southeastern Idaho. The Pocatello RMP, when completed, will provide management direction for resources and resource uses. Planning issues addressed in the PRMP/FEIS include: Off-highway vehicle management, recreation management, sagebrush ecosystems, public access, and phosphate mining.

The PRMP is essentially the same as the BLM's preferred alternative of the Draft RMP/Draft EIS and provides the most reasonable and practical approach to public lands management in the planning area. The PRMP allows flexibility in adjusting to changing conditions over time while emphasizing a level of protection, restoration, and enhancement to meet the overall needs of the resources, use allocations, and public services into the future.

In addition, the PRMP/FEIS would designate the 400-acre Petticoat Peak Area of Critical Environmental Concern (ACEC) to provide protection to unique native plants. Several decisions associated with the Petticoat Peak ACEC designation include: Designating the area "closed" to off-highway vehicles, excluding rights-of-way and leasing fluid minerals with a "No Surface Occupancy" stipulation. The FEIS also analyzes the direct and indirect effects of fluid minerals leasing with standard terms and conditions and applicable special stipulations.

The Pocatello Draft RMP/Draft EIS was published for public comment on January 5, 2007. During the 90-day public comment period following its release, the BLM received 52 comment letters, e-mails, and faxes. These submissions included about 1,400 individual comments, which the BLM has responded to in the PRMP/FEIS. Comments on the Draft RMP/Draft EIS received from the public and internal BLM review were considered and incorporated as appropriate into the proposed plan. Public comments resulted in minor changes intended to clarify proposed management direction and update the analysis of potential environmental impacts, but did not significantly change proposed land use decisions.

Instructions for filing a protest with the Director of the BLM regarding the PRMP/FEIS may be found in the "Dear Reader Letter" of the Pocatello Field Office PRMP/FEIS and at 43 CFR 1610.5–2. E-mail and faxed protests will not be accepted unless the protesting party also provides the original letter by either regular or overnight mail postmarked by the close of the protest period. Under these conditions, the BLM will consider the e-mail or faxed protest as an advance copy and it will receive full consideration. If you wish to provide the BLM with such advance notification, please direct faxed protests to the attention of the BLM protest coordinator at 202–912–7212, and e-mails to *Brenda_Hudgens-Williams@blm.gov.*

All protests, including the follow-up letter to e-mails or faxes, must be in writing and mailed to the appropriate address, as set forth in the **ADDRESSES** section above.

Before including your phone number, e-mail address, or other personal identifying information in your protest, you should be aware that your entire protest—including your personal identifying information—may be made publicly available at any time. While you can ask us in your protest to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Authority: 40 CFR 1506.6, 1506.10, 43 CFR 1610.2, and 1610.

Peter J. Ditton,

Bureau of Land Management, Acting Idaho State Director.

[FR Doc. 2010–10665 Filed 5–6–10; 8:45 am]

BILLING CODE 4310–GG–P

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Intent To Repatriate Cultural Items: Rochester Museum & Science Center, Rochester, NY

AGENCY: National Park Service, Interior.

ACTION: Notice.

Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate 13 cultural items in the possession of the Rochester Museum & Science Center, Rochester, NY, that meet the definitions of "sacred object" and object of "cultural patrimony" under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the cultural items. The National Park Service is not responsible for the determinations in this notice.

On January 1, 1928, the museum acquired two large wooden medicine faces from Alvin Dewey, Rochester, NY (AE 2870/D 8363/29.259.17 and AE 2872/D 8364/29.259.19). The Dewey catalog card states: "Onondaga Indians. From the John Kilham collection, May 23, 1919."

On August 15, 1966, two large wooden medicine faces were donated to the museum by Mr. & Mrs. Warner Palmer, Albion, NY (AE 10315/66.222.1 and AE 10316/66.222.2). Both faces were made circa 1960, and collected by Charles Palmer.

In 1971, nine miniature wooden medicine faces were donated by the Rochester Museum Association to the museum (E 13.1.345/numbers 71.17.1–9). They are of Onondaga origin and were made circa 1970.

Onondaga Nation traditional religious leaders have identified these medicine faces as being needed for the practice of traditional Native American religions by present-day adherents. In the course of consultations with members of the Onondaga Nation, it was shown that any individual who carved a medicine face

and alienated it to a third party that in turn donated or sold it to the Rochester Museum & Science Center did not have the authority to do so. Museum documentation, supported by oral evidence presented during consultation by the Onondaga Nation NAGPRA representatives and other Haudenosaunee and non-Haudenosaunee parties, indicates that these medicine faces are culturally affiliated with the Onondaga Nation, and are both sacred objects and objects of cultural patrimony.

Officials of the Rochester Museum & Science Center have determined that, pursuant to 25 U.S.C. 3001(3)(C), the 13 cultural items described above are specific ceremonial objects needed by traditional Native American religious leaders for the practice of traditional Native American religions by their present-day adherents. Officials of the Rochester Museum & Science Center have also determined that, pursuant to 25 U.S.C. 3001(3)(D), the 13 cultural items described above have an ongoing historical, traditional, or cultural importance central to the Native American group or culture itself, rather than property owned by an individual. Lastly, officials of the Rochester Museum & Science Center have determined that, pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the sacred objects/objects of cultural patrimony and the Onondaga Nation of New York.

Representatives of any other Indian Nation or tribe that believes itself to be culturally affiliated with the sacred objects/objects of cultural patrimony should contact Adele DeRosa, Rochester Museum & Science Center, Rochester, NY 14607, telephone (585) 271–4552, ext 302, before June 7, 2010. Repatriation of the sacred objects/objects of cultural patrimony to the Onondaga Nation of New York may proceed after that date if no additional claimants come forward.

The Rochester Museum & Science Center is responsible for notifying the Onondaga Nation of New York that this notice has been published.

Dated: April 27, 2010.

David Tarler,

Acting Manager, National NAGPRA Program.

[FR Doc. 2010–10371 Filed 5–6–10; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Intent To Repatriate Cultural Items: Rochester Museum & Science Center, Rochester, NY

AGENCY: National Park Service, Interior.

ACTION: Notice.

Notice is here given in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3005, of the intent to repatriate cultural items in the possession of the Rochester Museum & Science Center, Rochester, NY, that meet the definitions of "sacred objects" and "objects of cultural patrimony" under 25 U.S.C. 3001.

This notice is published as part of the National Park Service's administrative responsibilities under NAGPRA, 25 U.S.C. 3003(d)(3). The determinations in this notice are the sole responsibility of the museum, institution, or Federal agency that has control of the cultural items. The National Park Service is not responsible for the determinations in this notice.

Between 1923 and 1966, the Rochester Museum & Science Center acquired from various sources 10 medicine faces made by members of the Tonawanda Seneca Nation.

In 1923, a large wooden medicine face was collected by Edward D. Putnam, Curator, Rochester Museum, Rochester, NY, on the Tonawanda Reservation. It was accessioned into the museum's collection on August 25, 1923 (AE 383/23.32.61). According to museum documentation, "This is a shaman's mask used by the Seneca False Face Company in curing diseases by invoking the spirit of the myth creature represented by the face."

In 1929, the museum accessioned two large wooden medicine faces that were collected by James Skye from the Tonawanda Reservation (AE 1673/29.270.1, made circa 1900; and AE 1689/29.270.2, made circa 1920).

In 1929, the museum purchased a large wooden medicine face with a medicine bag attached to it from Alvin Dewey, Rochester, NY (AE 2871/D 4974/29.259.18). According to the catalog card by Dewey, it was "Last used by Chauncey Abrams of Tonawanda Reservation."

In 1929, a large wooden medicine face was purchased from Alvin Dewey, Rochester, NY (AE 2873/29.259.20). In June 1916, Mr. Dewey had purchased the medicine face from William S. Wakeman, Batavia, NY. Before selling it to the museum, it was lent to Arthur C. Parker, State Archeologist, on December 23, 1923. At that time, it was reported to have been 75 years old.

In March 1966, the museum purchased five large medicine faces from Kidd Smith that were made on the Tonawanda Seneca Reservation, circa 1960. Four are identified as being simply wooden medicine faces (AE 10256/66.356.1, AE 10271/66.356.3, AE 10272/66.356.4 and AE 10273/66.356.5) with the fifth medicine face being made of basswood (AE 10257/66.356.2).

Museum documentation, supported by oral evidence presented during consultation by Tonawanda Seneca Nation NAGPRA representatives, indicates that these medicine faces are culturally affiliated with the Tonawanda Seneca Nation. Tonawanda Seneca Nation traditional religious leaders have identified these medicine faces as being needed for the practice of traditional Native American religions by present-day adherents. During consultation, it was shown that individuals who carved a face did not have the authority to alienate it to a third party or sell it indirectly to the Rochester Museum & Science Center. Therefore, based on consultation with NAGPRA representatives from the Tonawanda Seneca Nation and other Haudenosaunee and non-Haudenosaunee consultants, the museum has determined that the medicine faces are both sacred objects and objects of cultural patrimony.

Officials of the Rochester Museum & Science Center have determined that, pursuant to 25 U.S.C. 3001(3)(C), the 10 cultural items described above are specific ceremonial objects needed by traditional Native American religious leaders for the practice of traditional Native American religions by their present-day adherents. Officials of the Rochester Museum & Science Center have also determined that, pursuant to 25 U.S.C. 3001(3)(D), the 10 cultural items described above have an ongoing historical, traditional, or cultural importance central to the Native American group or culture itself, rather than property owned by an individual. Lastly, officials of the Rochester Museum & Science Center have determined that, pursuant to 25 U.S.C. 3001(2), there is a relationship of shared group identity that can be reasonably traced between the sacred objects/objects of cultural patrimony and the Tonawanda Band of Seneca Indians of New York.

Representatives of any other Indian Nation or tribe that believes itself to be culturally affiliated with the sacred objects/objects of cultural patrimony should contact Adele DeRosa, NAGPRA

Coordinator/Collections Manager, Rochester Museum & Science Center, 657 East Ave., Rochester, NY 14607, telephone (585) 271–4552, ext 302, before June 7, 2010. Repatriation of the sacred objects/objects of cultural patrimony to the Tonawanda Band of Seneca Indians of New York may proceed after that date if no additional claimants come forward.

The Rochester Museum & Science Center is responsible for notifying the Tonawanda Band of Seneca Indians of New York that this notice has been published.

Dated: April 27, 2010.

David Tarler,

Acting Manager, National NAGPRA Program.

[FR Doc. 2010–10787 Filed 5–6–10; 8:45 am]

BILLING CODE 4312–50–P

DEPARTMENT OF THE INTERIOR

National Park Service

National Register of Historic Places; Notification of Pending Nominations and Related Actions

Nominations for the following properties being considered for listing or related actions in the National Register were received by the National Park Service before April 3, 2010. Pursuant to section 60.13 of 36 CFR Part 60 written comments are being accepted concerning the significance of the nominated properties under the National Register criteria for evaluation. Comments are also being accepted on the following properties being considered for removal pursuant to 36 CFR 60.15. Comments may be forwarded by United States Postal Service, to the National Register of Historic Places, National Park Service, 1849 C St., NW., 2280, Washington, DC 20240; by all other carriers, National Register of Historic Places, National Park Service,1201 Eye St., NW., 8th floor, Washington, DC 20005; or by fax, 202–371–6447. Written or faxed comments should be submitted by May 24, 2010.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

J. Paul Loether,

Chief, National Register of Historic Places/National Historic Landmarks Program.

ALABAMA

Madison County

Warden's Residence, 151 Stone St, Triana, 10000258

COLORADO

Adams County

Eastlake Farers Co-Operative Elevator Company, 126th Ave and Claude Ct, Thornton, 10000259

CONNECTICUT

New Haven County

Hooker, Elizabeth R., House, 123 Edgehill Rd, New Haven, 10000260

IOWA

Cerro Gordo County

Surf Ballroom, 460 N Shore Dr, Clear Lake, 10000261

KANSAS

Ellsworth County

Holyrod Santa Fe Depot, (Railroad Resources of Kansas MPS) Between Main St and Smith St, Holyrod, 10000262

Shawnee County

Uniontown Cemetery, NW Douglas Rd, Willard, 10000263

MICHIGAN

Mason County

Ludington United States Coast Guard Station, 101 S Lakeshore Dr, Ludington, 10000264

MISSOURI

Clay County

Ligon Apartments, 211 E Excelsior St, Excelsior Springs, 10000265

NORTH DAKOTA

Pembina County

Walla Theater, 909 Central Ave, Walhalla, 10000266

TEXAS

Bexar County

University of the Incarnate Word Administration Building, 4301 Broadway, San Antonio, 10000267

Galveston County

The Settlement Historic District, Centered on the intersection of N Bell Dr and the 100 block of S Bell Dr with cross-streets Carve Ave and Eunice St, Texas City, 10000268

WISCONSIN

Oconto County

Chute Pond Dam, Chute Pond County Park, SH 32/64, Town of Mountain, 10000269

[FR Doc. 2010–10767 Filed 5–6–10; 8:45 am]

BILLING CODE 4312–51–P

DEPARTMENT OF THE INTERIOR

Minerals Management Service

Outer Continental Shelf (OCS) Mid-Atlantic Proposed Oil and Gas Lease Sale 220

AGENCY: Minerals Management Service (MMS), Interior.

ACTION: Notice of indefinite postponement of comment period on and cancellation of public meetings to scope for an Environmental Impact Statement (EIS) for Proposed Mid-Atlantic Oil and Gas Lease Sale 220.

SUMMARY: This Notice serves to cancel scoping meetings and to postpone the comment period on scoping for Sale 220 until further notice. Three public scoping meetings that had been scheduled on May 12, 25, and 27, in the **Federal Register** (Vol. 75, No. 82, page 22623) to solicit information to assist MMS in preparing an EIS to evaluate potential environmental effects of proposed Lease Sale 220 are hereby cancelled. Also, the public scoping meeting scheduled for May 12, 2010, in Norfolk, Virginia, to solicit public input on both Sale 220 and the Geological & Geophysical Programmatic EIS on the Mid- and South Atlantic OCS (G&G PEIS) is hereby cancelled. This Notice does not affect the public scoping period for the G&G PEIS. The scoping period for that PEIS ends on May 17, 2010 (see 75 FR 16830).

Pursuant to the regulations implementing the procedural provisions of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq*) (NEPA), MMS had reopened the scoping comment period on the EIS for proposed Lease Sale 220 for a period of 45 days from the date of the **Federal Register** notice on April 29, 2010. The closing date for scoping under that notice was to be June 14, 2010. The scoping period for Lease Sale 220 is now postponed until or unless we provide further notification.

DATES: On April 29, 2010, MMS published a notice in the **Federal Register** (Vol. 75, No. 82, page 22623) announcing the continuation of scoping for a 45-day period and that three public meetings were scheduled on:

- May 12 at Hilton Norfolk Airport in Norfolk, Virginia;
- May 25 at Princess Royale Oceanfront Hotel and Conference Center, Ocean City, Maryland; and
- May 27 at Elizabeth City State University Fine Arts Complex in Elizabeth City, North Carolina.

These meetings are cancelled.

Comments: Comments that are provided in the period between

publication of the notification reopening scoping on April 29, 2010, and this notification of postponed scoping will be held together with comments received during the initial scoping period of November 13, 2008 through January 13, 2009. No further comments are being solicited for scoping of the Lease Sale 220 EIS pending decision by the Secretary of the Interior.

FOR FURTHER INFORMATION CONTACT: For information on the status for the Sale 220 EIS scoping, please contact Mr. Gary D. Goeke, Chief, Environmental Assessment Section, Leasing and Environment (MS 5410), Minerals Management Service, Gulf of Mexico OCS Region, 1201 Elmwood Park Boulevard, New Orleans, LA 70123–2394, telephone (504) 736–3233.

SUPPLEMENTARY INFORMATION: With respect to proposed Lease Sale 220, MMS issued a Notice of Intent to prepare an EIS published in the **Federal Register** on November 13, 2008 (Vol. 73, No. 220, page 67201), and included a 45-day scoping period. No scoping meetings were announced at that time. The MMS decided to extend the comment period and made announcements in a press release and other media. On January 7, 2009, MMS published a notice in the **Federal Register** (Vol. 74, No. 4, page 727) extending the scoping comment period to 60 days. That comment period expired on January 13, 2009. Scoping had been reopened in the **Federal Register** notice published on April 29, 2010 (Vol. 75, No. 82, page 22623). Today's notice postpones indefinitely scoping for the Sale 220 EIS until or unless MMS provides further notification.

Dated: May 4, 2010.

S. Elizabeth Birnbaum,

Director, Minerals Management Service.

[FR Doc. 2010–10981 Filed 5–6–10; 8:45 am]

BILLING CODE 4310–MR–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337–TA–689]

In the Matter of Certain Dual Access Locks and Products Containing Same; Notice of Commission Determination Not To Review an Initial Determination Granting Motions for Summary Determination of Non-Infringement and Finding No Violation of Section 337; Termination of the Investigation

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined not to review an initial determination ("ID") granting two motions for summary determination of non-infringement and no violation of section 337 issued by the presiding administrative law judge ("ALJ") on March 18, 2010, in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Michael K. Haldenstein, Office of the General Counsel, U.S. International Trade Commission, 500 E Street, SW., Washington, DC 20436, telephone (202) 205–3041. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, SW., Washington, DC 20436, telephone (202) 205–2000. General information concerning the Commission may also be obtained by accessing its Internet server at *http://www.usitc.gov.* The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *http://edis.usitc.gov.* Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205–1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on October 21, 2009, under section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337, based on an amended complaint filed on October 5, 2009, by Safe Skies, LLC and David Tropp of Brooklyn, New York. 74 FR 54065 (October 21, 2009). The Commission named the following companies as respondents: C&C Luggage Manufacturing Co., Ltd. of China; Formosa Tai Rank Industrial Corp. of Taiwan; Hangzhou Gema Suitcases & Bags Co., Ltd. of China; La Pearl Luggage and Leather Goods Co., Ltd. of China; Hinomoto Jomae, Ltd. of Japan; Sinox Company, Ltd. of Taiwan; Yi Feng Manufacturing, Co., Ltd. of China; Jin Tay Industries Co., Ltd. of Taiwan; FULLYEAR-Brother Enterprise, Co., Ltd. of Taiwan; Zhuhai SkyGood Tech. Industrial Corp., Ltd. of China; Ningbo Xianfeng Art & Craft Co., Ltd. of China; Paloma Enterprises Co., Ltd. of Taiwan; Tekraft Industrial Co., Ltd. of Taiwan; Hangzhou Travelsky Co., Ltd. of China; The Sun Lock Company Ltd. of Hong Kong; Alloy Metal Manufactory, Ltd. of Hong Kong; Cometform, Ltd. of England; Design Go Ltd. of England; Franzen International of Germany; M–Power Lock Manufactory of Hong Kong.

The complaint alleged violations of section 337 based upon the importation into the United States, the sale for importation, and the sale within the United States after importation of certain dual access locks and products containing same that infringe claims 1–21 of U.S. Patent No. 7,021,537 and claims 1–20 of U.S. Patent No. 7,036,728. The complaint further alleged that an industry in the United States exists as required by subsection (a)(2) of section 337. The complainants requested that the Commission issue a general exclusion order and cease and desist orders.

On March 18, 2010, the ALJ issued an ID (Order No. 6) granting a motion of the Commission investigative attorney ("IA") and a joint motion on behalf of 19 of the above-named respondents for summary determination of non-infringement of all asserted claims. Only respondent Formosa Tai Ran Industrial Corp. did not join in the joint motion for summary determination. On April 1, 2010, complainants filed a petition for review of the ID. On April 8, 2010, the IA filed an opposition to the petition for review. On April 9, 2010, the 19 respondents filed a joint opposition to the petition for review and a motion for leave to file their response out of time, which the Commission has granted.

Having examined the record in this investigation, including the ALJ's ID, the petition for review and the responses thereto, the Commission has determined not to review the ID and terminate the investigation with a finding of no violation of section 337.

The authority for the Commission's determination is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), and in sections 210.42–.46 of the Commission's Rules of Practice and Procedure (19 CFR 210.42–.46).

By order of the Commission.

Issued: May 3, 2010.

Marilyn R. Abbott,

Secretary to the Commission.

[FR Doc. 2010–10758 Filed 5–6–10; 8:45 am]

BILLING CODE 7020–02–P

DEPARTMENT OF JUSTICE

Office of Justice Programs

[OMB Number 1121–0166]

Agency Information Collection Activities: Extension of a Currently Approved Collection: Comments Requested

ACTION: 30-Day Notice of information collection under review: Extension of a

currently approved collection. *Bureau of Justice Assistance Application Form: Public Safety Officers' Disability Benefits.*

The Department of Justice, Office of Justice Programs, will be submitting the following information collection request to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995. The proposed information collection is published to obtain comments from the public and affected agencies. This proposed information collection was previously published in the **Federal Register** [Volume 75, Number 42, page 9928–9929 on March 4, 2010], allowing for a 60-day comment period.

The purpose of this notice is to allow for an additional 30 days for public comment until June 7, 2010. This process is conducted in accordance with 5 CFR 1320.10.

Written comments and/or suggestions regarding the items contained in this notice, especially the estimated public burden and associated response time, should be directed to OMB, Office of Information and Regulatory Affairs, Attention: Department of Justice Desk Officer, Washington, DC 20503. In addition, comments may be submitted to OMB via facsimile to (202) 395–5806. Comments may also be submitted to M. Berry by phone at 202–616–6500/1–866–268–0079; by mail at Bureau of Justice Assistance, Office of Justice Programs, U.S. Department of Justice, 810 7th Street, NW., Washington, DC 20531; via facsimile at 202–305–1367; or by e-mail at *M.A.Berry@ojp.usdoj.gov*.

Written comments and suggestions from the public and affected agencies concerning the proposed collection of information are encouraged. Your comments should do one or more of the following:

—Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
—Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
—Enhance the quality, utility, and clarity of the information to be collected; and
—Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.*, permitting electronic submission of responses.

Overview of This Information Collection

(1) *Type of Information Collection:* Extension of a currently approved collection.

(2) *Title of the Form/Collection: Public Safety Officers' Disability Benefits.*

(3) *Agency form number, if any, and the applicable component of the Department of Justice sponsoring the collection: OJP FORM 3650/7 Public Safety Officers' Disability Benefits.*

(4) *Affected public who will be asked or required to respond, as well as a brief abstract:*

Primary: Dependents of public safety officers who were killed or permanently and totally disabled in the line of duty.

Abstract: The Public Safety Officers' Benefits Act of 1976, 42 U.S.C. 3796, authorizes the Public Safety Officers' Benefits Office, Bureau of Justice Assistance, Office of Justice Programs, U.S. Department of Justice to pay a benefit to claimant public safety officers found to have been permanently and totally disabled as the direct result of a catastrophic line-of-duty injury sustained on or after November 29, 1990.

Others: None.

(5) *An estimate of the total number of respondents and the amount of time needed for an average respondent to respond is as follows:* It is estimated that no more than 100 respondents will apply a year. Each application takes approximately 120 minutes to complete.

(6) *An estimate of the total public burden (in hours) associated with the collection: Total Annual Reporting Burden:* 100 × 120 minutes per application = 12,000 minutes/60 minutes per hour = 200 hours.

If additional information is required, please contact Lynn Bryant, Department Clearance Officer, United States Department of Justice, Justice Management Division, Policy and Planning Staff, Patrick Henry Building, Suite 1600, 601 D Street, NW., Washington, DC 20530.

Dated: May 4, 2010.

Lynn Bryant,

Department Clearance Officer, PRA, United States Department of Justice.

[FR Doc. 2010–10863 Filed 5–6–10; 8:45 am]

BILLING CODE 4410–18–P

DEPARTMENT OF JUSTICE

Antitrust Division

Notice Pursuant to the National Cooperative Research and Production Act of 1993—Rare Earth Industry and Technology Association

Notice is hereby given that, on March 22, 2010, pursuant to Section 6(a) of the National Cooperative Research and Production Act of 1993, 15 U.S.C. 4301 *et seq.* ("the Act"), the Rare Earth Technology Consortium ("RETC") has filed written notifications simultaneously with the Attorney General and the Federal Trade Commission disclosing (1) the identities of the parties to the venture and (2) the nature and objectives of the venture. The notifications were filed for the purpose of invoking the Act's provisions limiting the recovery of antitrust plaintiffs to actual damages under specified circumstances.

Pursuant to Section 6(b) of the Act, the identities of the parties to the venture are: Rare Earth Industry and Tecimology Association, Greenwood Village, CO; Global Tungsten & Powders Corp., Towanda, PA; General Electric Company, Niskayuna, NY; Arnold Magnetic Technologies Corp., Rochester, NY; Electron Energy Corp., Landisville, PA; Colorado School of Mines, Golden, CO; Worcester Polytechnic Institute, Worcester, MA; Iowa State University, Ames, IA; University of Delaware, Newark, DE; Rare Element Resources, Vancouver, British Columbia, CANADA; and Molycorp Minerals LLC, Greenwood Village, CO. The general areas of RETC's planned activities are to (a) improve the business conditions of entities engaged in all points of the production chain for rare earths magnets and other materials and products beginning with extraction of rare earths and ending with marketing and sale of such materials and products ("Rare Earth Companies"), while providing guidance for such companies to act as responsible stewards of rare earth resources; (b) promote the common business interests of Rare Earth Companies by establishing a consortium compromised of commercial, charitable, academic and state and local government organizations that work together to identify, develop, manage and implement rare earth projects that benefit for profit, nonprofit, government and charitable entities, including, without limitation, military and commercial entities, and in doing so to commercialize rare earth research, technology and use for dual-purpose

military/civilian use; (c) create an effective teaming environment among its members for purposes of identifying rare earth related opportunities that can be developed into applications that serve military and commercial markets through shared public and private investment; and (d) enter into, or coordinate with Rare Earth Industry and Technology Association (REITA) and/or the individual members of the Consortium as they enter into, agreements with the U.S. Army (REITA and the U.S. Army shall designate the parties to each such agreement) known as a "Section 845 Other Transactions Agreement" or "OTA" for the purpose of funding certain work to be conducted in partnership with the U.S. government and the Consortium or any one or more of its members acting through the Consortium for the benefit of the U.S. Army Armament Research, Development and Engineering Center ("ARDEC") to utilize rare earth products and technology to enhance the U.S. military's war fighting capabilities for the national defense.

Patricia A. Brink,

Deputy Director of Operations, Antitrust Division.

[FR Doc. 2010–10465 Filed 5–6–10; 8:45 am]

BILLING CODE 4410–11–M

DEPARTMENT OF JUSTICE

Antitrust Division

Notice Pursuant to the National Cooperative Research and Production Act of 1993—High Definition Metrology and Process-2 Micron Manufacturing Under ATP Award No. 70NANB77041

Notice is hereby given that, on March 10, 2010, pursuant to Section 6(a) of the National Cooperative Research and Production Act of 1993, 15 U.S.C. 4301 *et seq.* ("the Act"), High Definition Metrology and Process-2 Micron Manufacturing under ATP Award No. 70NANB7H7041 has filed written notifications simultaneously with the Attorney General and the Federal Trade Commission disclosing changes in its membership. The notifications were filed for the purpose of extending the Act's provisions limiting the recovery of antitrust plaintiffs to actual damages under specified circumstances. Specifically, MAG, Port Huron, MI, has been added as a party to this venture. Also, Superior Controls, Plymouth, MI, has withdrawn as a party to this venture.

No other changes have been made in either the membership or planned activity of the group research project. Membership in this research project remains open, and High Definition Metrology intends to file additional written notifications disclosing all changes in membership.

On December 13, 2007, High Definition Metrology filed its original notification pursuant to Section 6(a) of the Act. The Department of Justice published a notice in the **Federal Register** pursuant to Section 6(b) of the Act on March 10, 2008 (73 FR 12762).

The last notification was filed with the Department on September 17, 2008. A notice was published in the **Federal Register** pursuant to Section 6(b) of the Act on October 21, 2008 (73 FR 62542).

Patricia A. Brink,

Deputy Director of Operations, Antitrust Division.

[FR Doc. 2010–10466 Filed 5–6–10; 8:45 am]

BILLING CODE 4410–11–M

DEPARTMENT OF JUSTICE

Antitrust Division

Notice Pursuant to the National Cooperative Research and Production Act of 1993—DVD Copy Control Association

Notice is hereby given that, on March 10, 2010, pursuant to Section 6(a) of the National Cooperative Research and Production Act of 1993, 15 U.S.C. 4301 *et seq.* ("the Act"), DVD Copy Control Association ("DVD CCA") has filed written notifications simultaneously with the Attorney General and the Federal Trade Commission disclosing changes in its membership. The notifications were filed for the purpose of extending the Act's provisions limiting the recovery of antitrust plaintiffs to actual damages under specified circumstances. Specifically, Chongqing Xugang Electronic Co., Ltd., Jiangbei, Chongqing, PEOPLE'S REPUBLIC OF CHINA; Huizhou Aihua Multimedia Co., Ltd., Huizhou, Guangdong, PEOPLE'S REPUBLIC OF CHINA; digiCon AG, Kornwestheim, GERMANY; Mimeos V0F, Baarlo Noord Limburg, THE NETHERLANDS; MIT Technology Co., Ltd., Dongguan, Guangdong, PEOPLE'S REPUBLIC OF CHINA; ShenZhen Sea Star Technology Co., Ltd., Longhua Town, Baoan, Shenzhen, PEOPLE'S REPUBLIC OF CHINA; and Yuban & Co., Nan-Kang, Taipei, TAIWAN, have been added as parties to this venture.

Also, ATI Technologies, Inc., Unionville, Ontario, CANADA; Axiom Technologies Mfg Pte Ltd., Singapore, SINGAPORE; DOCdata media b.v., Tilburg, THE NETHERLANDS; Mattel Inc., El Segundo, CA; nVidia Corporation, Santa Clara, CA; OPT Corporation, Tokyo, JAPAN; Seagate Technology LLC, Longmont, CO; Tonic Electronics Limited, Kowloon, HONG KONG-CHINA; and Toppan Printing Co., Ltd., Tokyo, JAPAN, have withdrawn as parties to this venture. In addition, Mediachain Co., Ltd. has changed its name to SD RAY Co., Ltd., Hwasung-Si, Kyounggi-do, REPUBLIC OF KOREA.

No other changes have been made in either the membership or planned activity of the group research project. Membership in this group research project remains open, and DVD CCA intends to file additional written notifications disclosing all changes in membership.

On April 11, 2001, DVD CCA filed its original notification pursuant to Section 6(a) of the Act. The Department of Justice published a notice in the **Federal Register** pursuant to Section 6(b) of the Act on August 3, 2001 (66 FR 40727).

The last notification was filed with the Department on December 3, 2009. A notice was published in the **Federal Register** pursuant to Section 6(b) of the Act on January 19, 2010 (75 FR 2890).

Patricia A. Brink,

Deputy Director of Operations, Antitrust Division.

[FR Doc. 2010–10464 Filed 5–6–10; 8:45 am]

BILLING CODE 4410–11–M

DEPARTMENT OF JUSTICE

Antitrust Division

Notice Pursuant to the National Cooperative Research and Production Act of 1993—Joint Venture To Perform Project Entitled Versatile Onboard Traffic Embedded Roaming Sensors

Notice is hereby given that, on April 5, 2010, pursuant to Section 6(a) of the National Cooperative Research and Production Act of 1993, 15 U.S.C. 4301 *et seq.* ("the Act"), Joint Venture to Perform Project Entitled Versatile Onboard Traffic Embedded Roaming Sensors ("VOTERS") has filed written notifications simultaneously with the Attorney General and the Federal Trade Commission disclosing changes in its membership. The notifications were filed for the purpose of extending the Act's provisions limiting the recovery of antitrust plaintiffs to actual damages under specified circumstances. Specifically, Trilion Quality Systems, Plymouth Meeting, PA, has been added as a party to this venture. Also, Witten Technologies, Inc., Somerville, MA, has withdrawn as a party to this venture.

No other changes have been made in either the membership or planned activity of the group research project. Membership in this group research project remains open, and VOTERS intends to file additional written notifications disclosing all changes in membership.

On February 10, 2009, VOTERS filed its original notification pursuant to Section 6(a) of the Act. The Department of Justice published a notice in the **Federal Register** pursuant to Section 6(b) of the Act on March 13, 2009 (74 FR 10967).

Patricia A. Brink,

Deputy Director of Operations, Antitrust Division.

[FR Doc. 2010–10460 Filed 5–6–10; 8:45 am]

BILLING CODE 4410–11–M

DEPARTMENT OF LABOR

Workforce Investment Act of 1998 (WIA); Notice of Incentive Funding Availability Based on Program Year (PY) 2008 Performance

AGENCY: Employment and Training Administration.

ACTION: Notice.

SUMMARY: The Department of Labor, in collaboration with the Department of Education, announces that ten states are eligible to apply for Workforce Investment Act (WIA) (Pub. L. 105–220, 29 U.S.C. 2801 *et seq.*) incentive grant awards authorized by section 503 of the WIA.

DATES: The ten eligible states must submit their applications for incentive funding to the Department of Labor by June 21, 2010.

ADDRESSES: Submit applications to the Employment and Training Administration, Office of Policy Development and Research, Division of System Accomplishments, 200 Constitution Avenue NW., Room S–5206, Washington, DC 20210, *Attention:* Karen Staha and Gail Sather, *Telephone number:* 202–693–3995 (this is not a toll-free number). *Fax:* 202–693–3490. *E-mail: staha.karen@dol.gov* and *sather.gail@dol.gov.* Information may also be found at the ETA Performance *Web site: http://www.doleta.gov/performance.*

SUPPLEMENTARY INFORMATION: Ten states (*see* Appendix) qualify to receive a share of the $9.7 million available for incentive grant awards under WIA section 503. These funds, which were contributed by the Department of Education from appropriations for the Adult Education and Family Literacy Act, are available for the eligible states to use through June 30, 2012, to support innovative workforce development and education activities that are authorized under title IB (Workforce Investment Systems) or title II (the Adult Education and Family Literacy Act (AEFLA)) of WIA, or under the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV), 20 U.S.C. 2301 *et seq.,* as amended by Public Law 109–270. In order to qualify for a grant award, a state must have exceeded its performance levels for WIA title IB and adult education (AEFLA). (Due to the lack of availability of PY 2008 performance data under the Carl D. Perkins Vocational and Technical Education Act of 1998 (Perkins III), the Department of Labor and the Department of Education did not consider states' performance levels under the Perkins Act in determining incentive grants eligibility.) The goals included employment after training and related services, retention in employment, and improvements in literacy levels, among other measures. After review of the performance data submitted by states to the Department of Labor and to the Department of Education, each Department determined for its program(s) which states exceeded their performance levels (the Appendix at the bottom of this notice lists the eligibility of each state by program). These lists were compared, and states that exceeded their performance levels for both programs are eligible to apply for and receive an incentive grant award. The amount that each state is eligible to receive was determined by the Department of Labor and the Department of Education, based on the provisions in WIA section 503(c) (20 U.S.C. 9273(c)), and is proportional to the total funding received by these states for WIA title IB and AEFLA programs.

The states eligible to apply for incentive grant awards and the amounts they are eligible to receive are listed in the following chart:

State	Amount of award
1. Colorado	$870,920
2. Connecticut	844,169
3. Illinois	1,238,005
4. Iowa	806,297
5. Kentucky	964,785
6. Minnesota	881,593
7. Missouri	988,456
8. Nebraska	784,251
9. New York	1,405,909
10. Tennessee	976,065

Dated: May 4, 2010.

Jane Oates,

Assistant Secretary for Employment and Training.

Appendix

State	Incentive grants PY 2008–FY 2009 exceeded state performance levels		
	WIA (title IB)	AEFLA (adult education)	WIA title IB; AEFLA
Alabama		X	
Alaska			
Arizona		X	
Arkansas		X	
California			
Colorado	X	X	X
Connecticut	X	X	X
District of Columbia			
Delaware		X	
Florida	X		
Georgia		X	
Hawaii			
Idaho		X	
Illinois	X	X	X
Indiana		X	
Iowa	X	X	X
Kansas			

State	Incentive grants PY 2008–FY 2009 exceeded state performance levels		
	WIA (title IB)	AEFLA (adult education)	WIA title IB; AEFLA
Kentucky	X	X	X
Louisiana			
Maine		X	
Maryland			
Massachusetts		X	
Michigan	X		
Minnesota	X	X	X
Mississippi		X	
Missouri	X	X	X
Montana		X	
Nebraska	X	X	X
Nevada			
New Hampshire			
New Jersey			
New Mexico			
New York	X	X	X
North Carolina		X	
North Dakota	X		
Ohio		X	
Oklahoma			
Oregon			
Pennsylvania		X	
Puerto Rico	X		
Rhode Island		X	
South Carolina			
South Dakota		X	
Tennessee	X	X	X
Texas		X	
Utah			
Vermont			
Virginia			
Washington			
West Virginia		X	
Wisconsin		X	
Wyoming			

States in **bold** exceeded their performance levels for both AEFLA and WIA Title IB programs.

[FR Doc. 2010–10930 Filed 5–6–10; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

Workforce Investment Act; Lower Living Standard Income Level

AGENCY: Employment and Training Administration, Labor.

ACTION: Notice of Determination of Lower Living Standard Income Level.

SUMMARY: Under Title I of the Workforce Investment Act (WIA) of 1998 (Pub. L. 105–220), the Secretary of Labor annually determines the Lower Living Standard Income Level (LLSIL) for uses described in the law. WIA defines the term "Low Income Individual" as one who qualifies under various criteria, including an individual who received income for a six-month period that does not exceed the higher level of the poverty line or 70 percent of the LLSIL. This issuance provides the Secretary's annual LLSIL for 2010 and references the current 2009 Health and Human Services "Poverty Guidelines." Congress has taken action to keep the 2009 HHS poverty guidelines in effect until at least May 31, 2010.

DATES: *Effective Date:* This notice is effective on the date of publication in the **Federal Register**.

ADDRESSES: Send questions about the Lower Living Standard Income Level calculations: Mr. Samuel Wright, Department of Labor, Employment and Training Administration, 200 Constitution Avenue, NW., Room S–4231, Washington, DC 20210.

Send written youth program comments to: Mr. Evan Rosenberg, Department of Labor, Employment and Training Administration, 200 Constitution Avenue, NW., Room N–4464, Washington, DC 20210.

For Further Information on LLSIL: Please contact Mr. Samuel Wright, Telephone 202–693–2870; Fax 202–693–3015 (these are not toll free numbers); e-mail address *wright.samuel.e@dol.gov*.

For Further Information on Federal Youth Programs: Evan Rosenberg, Telephone 202–693–3593; Fax 202–693–3532 (these are not toll free numbers).

SUPPLEMENTARY INFORMATION: It is the purpose of the Workforce Investment Act of 1998 "to provide workforce investment activities, through statewide and local workforce investment systems, that increase the employment, retention, and earnings of participants, and increase occupational skill attainment by participants, and as a result, improve the quality of the workforce, reduce welfare dependency, and enhance the productivity and competitiveness of the Nation."

The LLSIL is used for several purposes under WIA. Specifically, WIA Section 101(25) defines the term "low income individual" for eligibility purposes, and Sections 127(b)(2)(C) and 132(b)(1)(B)(v)(IV) define the terms "disadvantaged youth" and "disadvantaged adult" in terms of the

poverty line or LLSIL for state formula allotments. The Governor and state/local workforce investment boards (WIBs) use the LLSIL for determining eligibility for youth, eligibility for employed adult workers for certain services and for the Work Opportunity Tax Credit (WOTC). We encourage the Governors and state/local WIBs to consult WIA regulations and the preamble to the WIA Final Rule (published at 65 FR 49294 August 11, 2000) for more specific guidance in applying the LLSIL to program requirements. The Department of Health and Human Services (HHS) published the most current poverty-level guidelines in the **Federal Register** at 74 FR 4199–4201 on Jan. 23, 2009. The HHS 2009 Poverty guidelines may also be found on the Internet at: *http://aspe.hhs.gov/poverty/09fedreg.pdf*. ETA plans to have the 2010 LLSIL available on its Web site at [*http://www.doleta.gov/llsil/2010/*].

WIA Section 101(24) defines the LLSIL as "that income level (adjusted for regional, metropolitan, urban and rural differences and family size) determined annually by the Secretary [of Labor] based on the most recent lower living family budget issued by the Secretary." The most recent lower living family budget was issued by the Secretary in the fall of 1981. The four-person urban family budget estimates, previously published by the Bureau of Labor Statistics (BLS), provided the basis for the Secretary to determine the LLSIL. BLS terminated the four-person family budget series in 1982, after publication of the fall 1981 estimates. Currently, BLS provides data to ETA through which ETA develops the LLSIL tables, as provided in the Appendices.

ETA published the 2009 updates to the LLSIL in the **Federal Register** of March 26, 2009, at 74 FR 13262. This notice again updates the LLSIL to reflect cost of living increases for 2009, by applying the percentage change in the most recent 2009 Consumer Price Index for All Urban Consumers (CPI–U) for an area, compared with the 2008 CPI–U to each of the March 26, 2009 LLSIL figures. Those updated figures for a family-of-four are listed in Appendix A, Table 1, by region for both metropolitan and non-metropolitan areas. Figures in all of the accompanying tables, in the Appendices, are rounded up to the nearest dollar. Since low income individuals, "disadvantaged adult" and "disadvantaged youth" may be determined by family income at 70 percent of the LLSIL, pursuant to WIA Sections 101(25), 127(b)(2)(C), and 132(b)(1)(B)(v)(IV), respectively, those figures are listed as well.

Jurisdictions included in the various regions, based generally on Census Divisions of the U.S. Department of Commerce, are as follows:

Northeast

Connecticut
Maine
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Rhode Island
Vermont
Virgin Islands

Midwest

Illinois
Indiana
Iowa
Kansas
Michigan
Minnesota
Missouri
Nebraska
North Dakota
Ohio
South Dakota
Wisconsin

South

Alabama
American Samoa
Arkansas
Delaware
District of Columbia
Florida
Georgia
Northern Marianas
Oklahoma
Palau
Puerto Rico
South Carolina
Kentucky
Louisiana
Marshall Islands
Maryland
Micronesia
Mississippi
North Carolina
Tennessee
Texas
Virginia
West Virginia

West

Arizona
California
Colorado
Idaho
Montana
Nevada
New Mexico
Oregon
Utah
Washington
Wyoming

Additionally, separate figures have been provided for Alaska, Hawaii, and Guam as indicated in Appendix B, Table 2.

For Alaska, Hawaii, and Guam, the year 2009 figures were updated from the April, 2009 "State Index" based on the ratio of the urban change in the state (using Anchorage for Alaska and Honolulu for Hawaii and Guam) compared to the West regional metropolitan change, and then applying that index to the West regional metropolitan change.

Data on 23 selected MSAs are also available. These are based on semiannual CPI–U changes for a 12-month period ending in June 2009. The updated LLSIL figures for these MSAs and 70 percent of the LLSIL are reported in Appendix C, Table 3.

Appendix D, Table 4 lists each of the various figures at 70 percent of the updated 2009 LLSIL for family sizes of one to six persons. Because tables 1–3 only list the LLSIL for a family of four, table 4 can be used to determine the LLSIL for families of one to six persons. For families larger than six persons, an amount equal to the difference between the six-person and the five-person family income levels should be added to the six-person family income level for each additional person in the family. Where the poverty level for a particular family size is greater than the corresponding LLSIL figure, the figure is indicated in parentheses. A modified Excel version of Appendix D, Table 4, with the area names, will be available on the Department of Labor, Employment and Training Administration LLSIL Webpage at [*http://www.doleta.gov/llsil/2010/*]. Appendix E, Table 5, indicates 100 percent of LLSIL for family sizes of one to six and is used to determine self-sufficiency as noted at 20 CFR 663.230 of the WIA regulations and WIA Section 134(d)(3)(A)(ii).

Use of These Data

Governors should designate the appropriate LLSILs for use within the state from Appendices A, B, and C, containing Tables 1 through 3. Appendices D and E, which contain Tables 4 and 5, which adjusts a family of four figure for larger and smaller families, may be used with any LLSIL designated. The Governor's designation may be provided by disseminating information on MSAs and metropolitan and non-metropolitan areas within the state or it may involve further calculations. For example, the State of New Jersey may have four or more LLSIL figures for Northeast metropolitan, Northeast non-metropolitan, portions of the State in the New York City MSA, and those in

the Philadelphia MSA. If a workforce investment area includes areas that would be covered by more than one figure, the Governor may determine which is to be used.

Under 20 CFR 661.110, a state's policies and measures for the workforce investment system shall be accepted by the Secretary to the extent that they are consistent with the WIA and the WIA regulations.

Disclaimer on Statistical Uses

It should be noted, the publication of these figures is only for the purpose of meeting the requirements specified by WIA as defined in the law and regulations. BLS has not revised the lower living family budget since 1981, and has no plans to do so. The four-person urban family budget estimates series has been terminated. The CPI–U adjustments used to update the LLSIL for this publication are not precisely comparable, most notably because certain tax items were included in the 1981 LLSIL, but are not in the CPI–U. Thus, these figures should not be used for any statistical purposes, and are valid only for those purposes under WIA as defined in the law and regulations.

Lower Living Standard Income Level for 2010

Under Title I of the Workforce Investment Act of 1998 (Pub. L. 105–220), the Secretary of Labor annually determines the Lower Living Standard Income Level (LLSIL). This Notice announces the LLSIL Tables for 2010. WIA requires the Department of Labor to update and publish the LLSIL tables annually. The LLSIL tables are used for several purposes under WIA, including determining eligibility for youth and for the Work Opportunity Tax Credit.

Signed at Washington, DC, this 30th day of April 2010.

Jane Oates,

Assistant Secretary, Employment and Training Administration.

Attachments

Appendix A

TABLE 1—LOWER LIVING STANDARD INCOME LEVEL (FOR A FAMILY OF FOUR PERSONS) BY REGION [1]

Region [2]	2010 adjusted LLSIL	70 percent LLSIL
Northeast:		
Metro	$38,759	$27,131
Non-Metro [3]	37,060	25,942
Midwest:		
Metro	34,161	23,913
Non-Metro	33,026	23,118
South:		
Metro	33,043	23,130
Non-Metro	32,318	22,623
West:		
Metro	37,471	26,230
Non-Metro [4]	35,758	25,031

[1] For ease of use, these figures are rounded to the next highest dollar.

[2] Metropolitan area measures were calculated from the weighted average CPI–Us for city size classes A and B/C. Non-metropolitan area measures were calculated from the CPI–Us for city size class D.

[3] Non-metropolitan area percent changes for the Northeast region are no longer available. The Non-metropolitan percent change was calculated using the U.S. average CPI–U for city size class D.

[4] Non-metropolitan area percent changes for the West region are unpublished data.

Appendix B

TABLE 2—LOWER LIVING STANDARD INCOME LEVEL (FOR A FAMILY OF FOUR PERSONS)—ALASKA, HAWAII AND GUAM [1]

Region	2010 adjusted LLSIL	70 percent LLSIL
Alaska:		
Metro	$45,047	$31,533
Non-Metro [2]	44,866	31,406
Hawaii, Guam:		
Metro	48,432	33,902
Non-Metro [2]	47,898	33,529

[1] For ease of use, these figures are rounded to the next highest dollar.

[2] Non-Metropolitan percent changes for Alaska, Hawaii and Guam were calculated from the CPI–Us for city size class D in the Western Region.

Appendix C

TABLE 3—LOWER LIVING STANDARD INCOME LEVEL (FOR A FAMILY OF FOUR PERSONS) 23 MSAS [1]

Metropolitan statistical areas (MSAs)	2010 Adjusted LLSIL	70 Percent LLSIL
Anchorage, AK	$46,172	$32,320
Atlanta, GA	31,353	21,947
Boston—Brockton—Nashua, MA/NH/ME/CT	41,891	29,324
Chicago—Gary—Kenosha, IL/IN/WI	35,821	25,075
Cincinnati—Hamilton, OH/KY/IN	34,327	24,029
Cleveland—Akron, OH	35,129	24,590
Dallas—Ft. Worth, TX	31,646	22,152
Denver—Boulder—Greeley, CO	35,695	24,987
Detroit—Ann Arbor—Flint, MI	32,916	23,041
Honolulu, HI	49,497	34,648
Houston—Galveston—Brazoria, TX	30,562	21,393
Kansas City, MO/KS	33,064	23,145
Los Angeles—Riverside—Orange County, CA	39,521	27,665
Milwaukee—Racine, WI	34,073	23,851
Minneapolis—St. Paul, MN/WI	34,156	23,909
New York—Northern NJ—Long Island, NY/NJ/CT/PA	41,130	28,791
Philadelphia—Wilmington—Atlantic City, PA/NJ/DE/MD	37,407	26,185
Pittsburgh, PA	41,025	28,718
St. Louis, MO/IL	32,268	22,588
San Diego, CA	43,298	30,309
San Francisco—Oakland—San Jose, CA	39,916	27,941
Seattle—Tacoma—Bremerton, WA	40,784	28,549
Washington—Baltimore, DC/MD/VA/WV [2]	41,669	29,168

[1] For ease of use, these figures are rounded to the next highest dollar.

[2] Baltimore and Washington are now calculated as a single metropolitan statistical area.

Appendix D

Table 4—Seventy Percent of Updated 2010 Lower Living Standard Income Level (LLSIL), by Family Size

To use the seventy percent LLSIL value, where it is stipulated for WIA programs, begin by locating the region or metropolitan area where they reside. These are listed in Tables 1, 2 and 3. After locating the appropriate region or metropolitan statistical area, find the seventy percent LLSIL amount for that location. The seventy percent LLSIL figures are listed in the last column to the right on each of the three tables. These figures apply to a family of four. Larger and smaller family eligibility is based on a percentage of the family of four. To determine eligibility for other size families consult Table 4 and the instructions below.

To use Table 4, locate the seventy percent LLSIL value that applies to the individual's region or metropolitan area from Tables 1, 2 or 3. Find the same number in the "family of four" column of Table 4. Move left or right across that row to the size that corresponds to the individual's family unit. That figure is the maximum household income the individual is permitted in order to qualify as economically disadvantaged under WIA.

Where the HHS poverty level for a particular family size is greater than the corresponding LLSIL figure, the LLSIL figure appears in a shaded block. Individuals from these size families may consult the 2009 HHS poverty guidelines found in the **Federal Register**, Vol. 74, No. 14, January 23, 2009, pp. 4199–4201 (on the Internet at *http://aspe.hhs.gov/poverty/09fedreg.htm*) to find the higher eligibility standard. Individuals from Alaska and Hawaii should consult the HHS guidelines for the generally higher poverty levels that apply in their states.

Family of one	Family of two	Family of three	Family of four	Family of five	Family of six
7,708	12,628	17,332	21,393	25,248	29,527
7,902	12,951	17,784	21,947	25,901	30,289
7,980	13,077	17,949	22,152	26,146	30,575
8,138	13,332	18,299	22,588	26,657	31,172
8,151	13,353	18,326	22,623	26,697	31,222
8,298	13,595	18,667	23,041	27,190	31,796
8,329	13,644	18,730	23,118	27,287	31,910
8,331	13,650	18,736	23,130	27,299	31,928
8,331	13,658	18,753	23,145	27,314	31,944
8,587	14,074	19,322	23,851	28,148	32,918
8,611	14,110	19,372	23,909	28,218	33,000
8,609	14,112	19,370	23,913	28,217	33,006
8,653	14,183	19,469	24,029	28,358	33,163
8,854	14,515	19,921	24,590	29,021	33,936
8,999	14,747	20,245	24,987	29,486	34,486
9,013	14,770	20,279	25,031	29,541	34,550
9,028	14,800	20,311	25,075	29,593	34,610
9,342	15,312	21,020	25,942	30,617	35,801
9,431	15,453	21,213	26,185	30,904	36,138
9,443	15,476	21,247	26,230	30,951	36,201
9,771	16,014	21,978	27,131	32,020	37,444
9,960	16,322	22,409	27,665	32,645	38,182
10,064	16,491	22,633	27,941	32,974	38,564
10,284	16,846	23,128	28,549	33,692	39,400
10,344	16,950	23,267	28,718	33,893	39,635
10,366	16,991	23,321	28,791	33,974	39,738
10,505	17,216	23,631	29,168	34,425	40,261
10,559	17,303	23,759	29,324	34,607	40,468
10,917	17,884	24,555	30,309	35,768	41,832
11,311	18,530	25,442	31,406	37,062	43,341
11,358	18,606	25,546	31,533	37,212	43,522
11,641	19,076	26,183	32,320	38,146	44,604
12,074	19,787	27,161	33,529	39,565	46,271
12,212	20,005	27,466	33,902	40,008	46,792
12,478	20,444	28,065	34,648	40,886	47,821

Appendix E

Table 5—Updated 2010 LLSIL (100%), By Family Size

To use the LLSIL to determine the minimum level for establishing self-sufficiency criteria at the state or local level, begin by locating the metropolitan area or region from Table 1, 2 or 3. Then locate the appropriate region or metropolitan statistical area and then find the 2010 Adjusted LLSIL amount for that location. These figures apply to a family of four. Locate the corresponding number in the family of four in the column below. Move left or right across that row to the size that corresponds to the individual's family unit. That figure is the minimum figure States must set for determining whether employment leads to self-sufficiency under WIA programs.

Family of one	Family of two	Family of three	Family of four	Family of five	Family of six
$11,011	$18,040	$24,760	$30,562	$36,069	$42,182
11,289	18,501	25,406	31,353	37,002	43,270
11,400	18,681	25,641	31,646	37,352	43,678
11,625	19,045	26,142	32,268	38,081	44,531
11,644	19,075	26,180	32,318	38,139	44,603
11,854	19,421	26,667	32,916	38,843	45,423
11,899	19,491	26,757	33,026	38,981	45,586
11,901	19,500	26,765	33,043	38,999	45,611

Family of one	Family of two	Family of three	Family of four	Family of five	Family of six
11,902	19,511	26,790	33,064	39,020	45,634
12,267	20,106	27,603	34,073	40,211	47,025
12,301	20,157	27,674	34,156	40,312	47,143
12,299	20,160	27,671	34,161	40,310	47,151
12,361	20,261	27,813	34,327	40,511	47,375
12,649	20,736	28,459	35,129	41,459	48,480
12,856	21,067	28,922	35,695	42,123	49,265
12,875	21,100	28,970	35,758	42,201	49,357
12,897	21,143	29,015	35,821	42,275	49,443
13,345	21,874	30,028	37,060	43,739	51,144
13,473	22,075	30,304	37,407	44,149	51,625
13,490	22,108	30,353	37,471	44,216	51,716
13,958	22,877	31,397	38,759	45,743	53,491
14,229	23,317	32,013	39,521	46,636	54,546
14,377	23,558	32,333	39,916	47,105	55,092
14,692	24,065	33,040	40,784	48,131	56,285
14,777	24,214	33,238	41,025	48,418	56,622
14,809	24,273	33,316	41,130	48,534	56,769
15,007	24,594	33,758	41,669	49,179	57,515
15,084	24,719	33,941	41,891	49,438	57,811
15,596	25,548	35,078	43,298	51,097	59,760
16,159	26,472	36,346	44,866	52,945	61,916
16,225	26,580	36,494	45,047	53,160	62,174
16,630	27,252	37,404	46,172	54,494	63,720
17,249	28,267	38,801	47,898	56,522	66,102
17,445	28,578	39,237	48,432	57,154	66,845
17,826	29,205	40,093	49,497	58,409	68,316

[FR Doc. 2010–10794 Filed 5–6–10; 8:45 am]

BILLING CODE 4510–FT–P

NATIONAL LABOR RELATIONS BOARD

Sunshine Act Meetings

TIME AND DATES:

All meetings are held at 2:30 p.m.

Tuesday, May 4, Wednesday, May 5, Thursday, May 6, 2010;

Tuesday, May 11, Wednesday, May 12, Thursday, May 13, 2010;

Tuesday, May 18, Wednesday, May 19, Thursday, May 20, 2010;

Tuesday, May 25, Wednesday, May 26, Thursday, May 27, 2010.

PLACE: Board Agenda Room, No. 11820, 1099 14th St., NW., Washington DC 20570.

STATUS: Closed.

MATTERS TO BE CONSIDERED: Pursuant to § 102.139(a) of the Board's Rules and Regulations, the Board or a panel thereof will consider "the issuance of a subpoena, the Board's participation in a civil action or proceeding or an arbitration, or the initiation, conduct, or disposition … of particular representation or unfair labor practice proceedings under section 8, 9, or 10 of the [National Labor Relations] Act, or any court proceedings collateral or ancillary thereto." *See also* 5 U.S.C. 552b(c)(10).

CONTACT PERSON FOR MORE INFORMATION: Lester A. Heltzer, Executive Secretary, (202) 273–1067.

Lester A. Heltzer,

Executive Secretary.

[FR Doc. 2010–11012 Filed 5–5–10; 4:15 pm]

BILLING CODE 7545–01–P

NATIONAL SCIENCE FOUNDATION

Notice of Permit Applications Received Under the Antarctic Conservation Act of 1978 (Pub. L. 95–541)

AGENCY: National Science Foundation.

ACTION: Notice of Permit Applications Received under the Antarctic Conservation Act of 1978, Public Law 95–541.

SUMMARY: The National Science Foundation (NSF) is required to publish notice of permit applications received to conduct activities regulated under the Antarctic Conservation Act of 1978. NSF has published regulations under the Antarctic Conservation Act at Title 45 Part 670 of the Code of Federal Regulations. This is the required notice of permit applications received.

DATES: Interested parties are invited to submit written data, comments, or views with respect to this permit application by June 7, 2010. This application may be inspected by interested parties at the Permit Office, address below.

ADDRESSES: Comments should be addressed to Permit Office, Room 755, Office of Polar Programs, National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230.

FOR FURTHER INFORMATION CONTACT: Nadene G. Kennedy at the above address or (703) 292–7405.

SUPPLEMENTARY INFORMATION: The National Science Foundation, as directed by the Antarctic Conservation Act of 1978 (Pub. L. 95–541), as amended by the Antarctic Science, Tourism and Conservation Act of 1996, has developed regulations for the establishment of a permit system for various activities in Antarctica and designation of certain animals and certain geographic areas requiring special protection. The regulations establish such a permit system to designate Antarctic Specially Protected Areas.

The applications received are as follows:

1. *Applicant:* Permit Application No. 2011–004. Sam Feola, Director, Raytheon Polar Services Company, 7400 S. Tucson Way, Centennial, CO 80112.

Activity for Which Permit is Requested

Introduce into Antarctica. The applicant plans to import commercially available bacterial host cell, Escherichia coli, for experimental use at the science laboratories at McMurdo and Palmer Stations. The experimental purpose is to generate clones of genes and gene fragments. In both cases the

recombinant DNA is introduced into E. coli which can be cultured to produce large quantities of the recombinant DNA for analysis and sequencing. E. coli engineered for routine cloning purposes belongs to the K–12 strain, which generally cannot survive outside the Lab. All cells will be autoclaved within the Lab to destroy all active cells.

Location: Palmer and McMurdo Station laboratories.

Dates: August 13, 2010 to March 1, 2011.

Nadene G. Kennedy,

Permit Officer, Office of Polar Programs.

[FR Doc. 2010–10756 Filed 5–6–10; 8:45 am]

BILLING CODE 7555–01–P

NUCLEAR REGULATORY COMMISSION

[DOCKET NO. 70–143; NRC–2010–0175]

Nuclear Fuel Services, Inc.; Environmental Assessment and Finding of No Significant Impact for Proposed Extension of Deadline for Inventory of Special Nuclear Material

AGENCY: Nuclear Regulatory Commission.

ACTION: Environmental Assessment and Finding of No Significant Impact.

FOR FURTHER INFORMATION CONTACT: Kevin M. Ramsey, Project Manager, Fuel Cycle Facilities Branch, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Mail Stop EBB–2C40M, Rockville, MD 20555–0001, Telephone (301) 492–3123; Fax (301) 492–3359; e-mail *kevin.ramsey@nrc.gov.*

SUPPLEMENTARY INFORMATION:

I. Introduction

The U.S. Nuclear Regulatory Commission (NRC) staff is considering the issuance of a license amendment to Materials License SNM–124 to Nuclear Fuel Services, Inc. (NFS) (the licensee) to grant a one-time exemption from an inventory requirement for strategic special nuclear material. NRC regulations at Title 10 of the *Code of Federal Regulations* (10 CFR) 74.59(f)(1) state that a physical inventory of strategic special nuclear material must occur every six months. By letter dated March 10, 2010, NFS requested a temporary exemption from this requirement.

The NRC has prepared an Environmental Assessment (EA) in support of this amendment and exemption request in accordance with the requirements of 10 CFR Part 51. Based on the EA, the NRC has concluded that a Finding of No Significant Impact (FONSI) is appropriate; therefore, an Environmental Impact Statement (EIS) will not be prepared.

II. Environmental Assessment

Background

The NFS facility in Erwin, Tennessee is authorized, under License SNM–124 to manufacture high-enriched nuclear reactor fuel. In addition, NFS is authorized to blend highly enriched uranium with natural uranium and manufacture low-enriched nuclear reactor fuel. Currently, several processing lines are in a safe-shutdown mode, in accordance with Confirmatory Action Letter No. 02–2010–001 dated January 7, 2010. Operations were shut down without the usual material processing/clean-out that is required to be undertaken as part of a measured physical inventory. NFS is currently in the process of implementing program improvements and conducting operational readiness reviews which must be reviewed and approved by NRC before each process line is restarted. After operations are authorized, each process line must be operated to process the material to a suitable form that will enable a measurable physical inventory to occur. NFS requests that the inventory reporting date be extended until 90 days after all processing lines are authorized to restart operations, a date which is currently unknown.

Review Scope

The purpose of this EA is to assess the environmental impacts of the requested license amendment and exemption. It does not approve the request. This EA is limited to the proposed exemption and any cumulative impacts on existing plant operations. The existing conditions and operations for the Erwin facility were evaluated by NRC for environmental impacts in a 1999 EA related to the renewal of the NFS license (Ref. 1) and a 2002 EA related to the first amendment for the Blended Low-Enriched Uranium (BLEU) Project (Ref. 2). The 2002 EA assessed the impact of the entire BLEU Project using information available at that time. A 2003 EA (Ref. 3) and a 2004 EA (Ref. 4), related to additional BLEU Project amendments, confirmed the FONSI issued in 2002.

Proposed Action

The proposed action is to amend NRC Materials License SNM–124 to grant a one-time exemption from the requirement to take a physical inventory of strategic special nuclear material every six months. The exemption would authorize NFS to submit the physical inventory results after NRC has authorized the restart of all operations currently shutdown, and after NFS has had an opportunity to then process the material and complete the inventory. The proposed action is limited to the reporting deadline only. No change to processing, packaging, or storage operations is requested, and no construction of new facilities is requested.

Need for Proposed Action

The proposed action is being requested because NFS had to secure operations in several processing lines to implement program improvements. NFS has committed to maintain the processing lines in a safe-shutdown mode until NRC authorizes restart of operations. Regulations in 10 CFR 74.59(f)(1) require a physical inventory of strategic special nuclear material every six months. To comply with this regulation, the material must be processed into a form that can be inventoried. Material in the processing lines is not in a form that can be inventoried, and it cannot be processed into the proper form until the restart of operations is authorized.

Alternatives

The alternatives available to NRC are:

1. Approve the requested action as described, or
2. No action (*i.e.,* deny the request).

Affected Environment

The affected environment for the proposed action and the no action alternative is the NFS site. The NFS facility is located in Unicoi County, Tennessee, about 32 km (20 mi) southwest of Johnson City, Tennessee. The facility is within the Erwin city limits. The affected environment is identical to the affected environment assessed in the 2002 EA related to the first amendment for the BLEU Project (Ref. 2). A full description of the site and its characteristics are given in the 2002 EA. Additional information can be found in the 1999 EA related to the renewal of the NFS license (Ref. 1). The site occupies about 28 hectares (70 acres). The site is bounded to the northwest by the CSX Corporation (CSX) railroad property and the Nolichucky River; and by Martin Creek to the northeast. The plant elevation is about 9 m (30 ft) above the nearest point on the Nolichucky River.

The area adjacent to the site consists primarily of residential, industrial, and

commercial areas, with a limited amount of farming to the northwest. Privately owned residences are located to the east and south of the facility. Tract size is relatively large, leading to a low housing density in the areas adjacent to the facility. The CSX railroad right-of-way is parallel to the western boundary of the site. Industrial development is located adjacent to the railroad on the opposite side of the right-of-way. The site is bounded by Martin Creek to the north with privately owned, vacant property and low-density residences.

Environmental Impacts of Proposed Action and Alternatives

1. Occupational and Public Health

Proposed Action

The occupational and public health impacts from the proposed action are essentially the same as those considered in the previous environmental assessments. If the exemption is granted, inactive processing lines will remain in a safe-shutdown mode, which will reduce the emissions from normal operations and reduce the risk of accidents. However, the reductions would be so small that the differences would be negligible.

No Action

Denying this amendment request would not result in any significant difference in the occupational and public health impacts when compared to the proposed action. If this amendment and exemption request is denied, the licensee may be cited for failing to submit a required report. However, the material cannot be inventoried until it is processed into an appropriate form. The facility will continue to implement NRC-approved radiation safety procedures for storing and handling radioactive materials. Thus, the impacts under the "no action" alternative will remain within acceptable regulatory limits.

2. Effluent Releases, Environmental Monitoring, Water Resources, Geology, Soils, Air Quality, Demography, Biota, Cultural and Historic Resources

Proposed Action

The NRC staff has determined that the approval of the proposed action will not impact effluent releases, environmental monitoring, water resources, geology, soils, air quality, demography, biota, or cultural or historic resources at or near the NFS site.

No Action

The NRC staff has determined that denial of the proposed action will not impact effluent releases, environmental monitoring, water resources, geology, soils, air quality, demography, biota, or cultural or historic resources at or near the NFS site.

Conclusion

Based on its review, the NRC has concluded that the environmental impacts associated with the proposed action are not significant and, therefore, do not warrant the preparation of an EIS. The NRC has determined that the proposed action, approval of the license amendment and exemption as described, is the appropriate alternative for selection. Based on an evaluation of the environmental impacts of the proposed action, the NRC has determined that the proper action is to issue a FONSI.

Agencies and Persons Contacted

On April 26, 2010, the NRC staff contacted the Division of Radiological Health in the Tennessee Department of Environment and Conservation (TDEC) concerning this EA. On April 30, 2010, TDEC responded that it had reviewed the draft EA and had no comments (Ref. 6).

The NRC staff has determined that the proposed action will not affect listed species or critical habitat. Therefore, no consultation is required under Section 7 of the Endangered Species Act. Likewise, the NRC staff has determined that the proposed action is not the type of activity that has the potential to cause effects on historic properties. Therefore, no consultation is required under Section 106 of the National Historic Preservation Act.

References

1. U.S. Nuclear Regulatory Commission, "Environmental Assessment for Renewal of Special Nuclear Material License No. SNM–124," January 1999, ADAMS Accession No. ML050600258.
2. U.S. Nuclear Regulatory Commission, "Environmental Assessment for Proposed License Amendments to Special Nuclear Material License No. SNM–124 Regarding Downblending and Oxide Conversion of Surplus High-Enriched Uranium," June 2002, ADAMS Accession No. ML050540096.
3. U.S. Nuclear Regulatory Commission, "Environmental Assessment and Finding of No Significant Impact for the BLEU Preparation Facility," September 2003, ADAMS Accession No. ML032390428.
4. U.S. Nuclear Regulatory Commission, "Environmental Assessment and Finding of No Significant Impact for the Oxide Conversion Building and the Effluent Processing Building at the BLEU Complex," June 2004, ADAMS Accession No. ML041470176.
5. Nuclear Fuel Services, "Request for One-Time Exemption," March 10, 2010, ADAMS Accession No. ML100760326.
6. R. Crosslin, Tennessee Division of Radiological Health, e-mail to K. Ramsey, U.S. Nuclear Regulatory Commission, "EA for NFS Exemption," April 30, 2010, ADAMS Accession No. ML101200082.

III. Finding of No Significant Impact

Pursuant to 10 CFR part 51, the NRC staff has considered the environmental consequences of amending NRC Materials License SNM–124 to grant a one-time exemption from the physical inventory deadline for strategic special nuclear material. On the basis of this EA, the NRC has concluded that there are no significant environmental impacts associated with the proposed amendment and has determined not to prepare an EIS for the proposed amendment.

IV. Further Information

The documents referenced in this Notice may be made available to interested parties pursuant to a protective order and subject to applicable security requirements upon a showing that the party has an interest that may be affected by the proposed action.

Dated at Rockville, Maryland, this 30th day of April 2010.

For the Nuclear Regulatory Commission.

Peter J. Habighorst,

Chief, Fuel Cycle Facilities Branch, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 2010–10828 Filed 5–6–10; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards (ACRS) Meeting of the ACRS Subcommittee on ESBWR

The ACRS Subcommittee on ESBWR will hold a meeting on May 18–19, 2010, Room T–2B1, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance, with the exception of a portion that may be closed to protect information that is proprietary to General Electric-Hitachi Nuclear Americas, LLC (GEH) and its contractors pursuant to 5 U.S.C. 552b(c)(4).

The agenda for the subject meeting shall be as follows:

Tuesday, May 18, 2010—8:30 a.m. until 5 p.m.; Wednesday, May 19, 2010—8:30 a.m.–12 p.m.

The Subcommittee will discuss Chapters 4, 8, 6, and 9 of the Safety Evaluation Report associated with the

ESBWR design certification; Topical Reports related to fuel design; and the resolution of control room habitability issues. The Subcommittee will hear presentations by and hold discussions with representatives of the NRC staff, GE Hitachi Nuclear Energy, and other interested persons regarding this matter. The Subcommittee will gather information, analyze relevant issues and facts, and formulate proposed positions and actions, as appropriate, for deliberation by the Full Committee.

Members of the public desiring to provide oral statements and/or written comments should notify the Designated Federal Official (DFO), Mr. Christopher Brown (Telephone 301–415–7111 or E-mail *Christopher.Brown@nrc.gov*) five days prior to the meeting, if possible, so that appropriate arrangements can be made. Thirty-five hard copies of each presentation or handout should be provided to the DFO thirty minutes before the meeting. In addition, one electronic copy of each presentation should be e-mailed to the DFO one day before the meeting. If an electronic copy cannot be provided within this timeframe, presenters should provide the DFO with a CD containing each presentation at least thirty minutes before the meeting. Electronic recordings will be permitted only during those portions of the meeting that are open to the public. Detailed procedures for the conduct of and participation in ACRS meetings were published in the **Federal Register** on October 14, 2010, (74 FR 58268–58269).

Detailed meeting agendas and meeting transcripts are available on the NRC Web site at *http://www.nrc.gov/reading-rm/doc-collections/acrs.* Information regarding topics to be discussed, changes to the agenda, whether the meeting has been canceled or rescheduled, and the time allotted to present oral statements can be obtained from the website cited above or by contacting the identified DFO. Moreover, in view of the possibility that the schedule for ACRS meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should check with these references if such rescheduling would result in a major inconvenience.

Dated: April 28, 2010.

Cayetano Santos,

Chief, Reactor Safety Branch A, Advisory Committee on Reactor Safeguards.

[FR Doc. 2010–10817 Filed 5–6–10; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards (ACRS) Meeting of the ACRS Subcommittee on Regulatory Policies and Practices

The ACRS Subcommittee on Regulatory Policies and Practices will hold a meeting on May 19, 2010, Room T–2B1, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows:

Wednesday, May 19, 2010—1 p.m. until 5 p.m.

The Subcommittee will review Draft Final Regulatory Guide 1.216 (previously DG–1203) "Containment Structural Integrity Evaluation for Internal Pressure Loadings Above Design-Basis Pressure". The DG was issued for public comment and subsequently revised in order to incorporate some of the public comments and/or to improve on the newly proposed guidelines. The Subcommittee will hear presentations by and hold discussions with representatives of the NRC staff, and other interested persons regarding this matter. The Subcommittee will gather information, analyze relevant issues and facts, and formulate proposed positions and actions, as appropriate, for deliberation by the Full Committee.

Members of the public desiring to provide oral statements and/or written comments should notify the Designated Federal Official (DFO), Mrs. Zena Abdullahi (Telephone 301–415–8716 or E-mail *Zena.Abdullahi@nrc.gov*) five days prior to the meeting, if possible, so that appropriate arrangements can be made. Thirty-five hard copies of each presentation or handout should be provided to the DFO thirty minutes before the meeting. In addition, one electronic copy of each presentation should be emailed to the DFO one day before the meeting. If an electronic copy cannot be provided within this timeframe, presenters should provide the DFO with a CD containing each presentation at least thirty minutes before the meeting. Electronic recordings will be permitted only during those portions of the meeting that are open to the public. Detailed procedures for the conduct of and participation in ACRS meetings were published in the **Federal Register** on October 14, 2010, (74 FR 58268–58269).

Detailed meeting agendas and meeting transcripts are available on the NRC Web site at *http://www.nrc.gov/reading-rm/doc-collections/acrs.* Information regarding topics to be discussed, changes to the agenda, whether the meeting has been canceled or rescheduled, and the time allotted to present oral statements can be obtained from the website cited above or by contacting the identified DFO. Moreover, in view of the possibility that the schedule for ACRS meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should check with these references if such rescheduling would result in a major inconvenience.

Dated: April 28, 2010.

Antonio Dias,

Chief, Reactor Safety Branch B, Advisory Committee on Reactor Safeguards.

[FR Doc. 2010–10825 Filed 5–6–10; 8:45 am]

BILLING CODE 7590–01–P

POSTAL REGULATORY COMMISSION

[Docket Nos. CP2010–40, CP2010–41, CP2010–42, CP2010–43, CP2010–44, CP2010–45 and CP2010–46; Order No. 451]

New Postal Products

AGENCY: Postal Regulatory Commission.

ACTION: Notice.

SUMMARY: The Commission is noticing a recently-filed Postal Service filing to add new Global Expedited Packages Services 2 products to the Competitive Product List. This notice addresses procedural steps associated with the filing.

DATES: Comments are due: May 10, 2010.

ADDRESSES: Submit comments electronically via the Commission's Filing Online system at *http://www.prc.gov.* Commenters who cannot submit their views electronically should contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section by telephone for advice on alternatives to electronic filing.

FOR FURTHER INFORMATION CONTACT: Stephen L. Sharfman, General Counsel, 202–789–6820 and *stephen.sharfman@prc.gov.*

SUPPLEMENTARY INFORMATION:

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I. Introduction
II. Notice of Filing
III. Ordering Paragraphs

I. Introduction

On April 29, 2010, the Postal Service filed a notice announcing that it has entered into seven additional Global

Expedited Package Services 2 (GEPS 2) contracts.[1] The Postal Service believes the instant contracts are functionally equivalent to previously submitted GEPS 2 contracts, and are supported by Governors' Decision No. 08–7, attached to the Notice and originally filed in Docket No. CP2008–4. *Id.* at 1, Attachment 3. The Notice also explains that Order No. 86, which established GEPS 1 as a product, also authorized functionally equivalent agreements to be included within the product, provided that they meet the requirements of 39 U.S.C. 3633. *Id.* at 1. In Order No. 290, the Commission approved the GEPS 2 product.[2]

The instant contracts. The Postal Service filed the instant contracts pursuant to 39 CFR 3015.5. In addition, the Postal Service contends that each contract is in accordance with Order No. 86. The term of each contract is 1 year from the date the Postal Service notifies the customer that all necessary regulatory approvals have been received. Notice at 2–3.

In support of its Notice, the Postal Service filed four attachments as follows:

- Attachments 1A, 1B, 1C, 1D, 1E, 1F and 1G—redacted copies of the seven contracts and applicable annexes;
- Attachments 2A, 2B, 2C, 2D, 2E, 2F and 2G—a certified statement required by 39 CFR 3015.5(c)(2) for each of the seven contracts;
- Attachment 3—a redacted copy of Governors' Decision No. 08–7 which establishes prices and classifications for GEPS contracts, a description of applicable GEPS contracts, formulas for prices, an analysis and certification of the formulas and certification of the Governors' vote; and
- Attachment 4—an application for non-public treatment of materials to maintain redacted portions of the contracts and supporting documents under seal.

The Notice advances reasons why the instant GEPS 2 contracts fit within the Mail Classification Schedule language for GEPS 2. The Postal Service identifies customer-specific information, general contract terms and other differences that distinguish the instant contracts from the baseline GEPS 2 agreement, all of which are highlighted in the Notice. *Id.* at 3–6. These modifications as described in the Postal Service's Notice apply to each of the instant contracts.

The Postal Service contends that the instant contracts are functionally equivalent to the GEPS 2 contracts filed previously notwithstanding these differences. *Id.* at 6–7.

The Postal Service asserts that several factors demonstrate the contracts' functional equivalence with previous GEPS 2 contracts, including the product being offered, the market in which it is offered, and its cost characteristics. *Id.* at 3. The Postal Service concludes that because the GEPS agreements "incorporate the same cost attributes and methodology, the relevant cost and market characteristics are similar, if not the same..." despite any incidental differences. *Id.* at 6.

The Postal Service contends that its filings demonstrate that each of the new GEPS 2 contracts complies with the requirements of 39 U.S.C. 3633 and is functionally equivalent to previous GEPS 2 contracts. It also requests that the contracts be included within the GEPS 2 product. *Id.* at 7.

II. Notice of Filing

The Commission establishes Docket Nos. CP2010–40, CP2010–41, CP2010–42, CP2010–43, CP2010–44, CP2010–45 and CP2010–46 for consideration of matters related to the contracts identified in the Postal Service's Notice.

These dockets are addressed on a consolidated basis for purposes of this order. Filings with respect to a particular contract should be filed in that docket.

Interested persons may submit comments on whether the Postal Service's contracts are consistent with the policies of 39 U.S.C. 3632, 3633 or 3642. Comments are due no later than May 10, 2010. The public portions of these filings can be accessed via the Commission's Web site *(http://www.prc.gov)*.

The Commission appoints Paul L. Harrington to serve as Public Representative in the captioned proceedings.

III. Ordering Paragraphs

It is ordered:

1. The Commission establishes Docket Nos. CP2010–40, CP2010–41, CP2010–42, CP2010–43, CP2010–44, CP2010–45 and CP2010–46 for consideration of matters raised by the Postal Service's Notice.

2. Comments by interested persons in these proceedings are due no later than May 10, 2010.

3. Pursuant to 39 U.S.C. 505, Paul L. Harrington is appointed to serve as the officer of the Commission (Public Representative) to represent the interests of the general public in these proceedings.

4. The Secretary shall arrange for publication of this order in the **Federal Register**.

By the Commission.

Shoshana M. Grove,

Secretary.

[FR Doc. 2010–10858 Filed 5–6–10; 8:45 am]

BILLING CODE 7710–FW–S

[1] Notice of United States Postal Service Filing of Seven Functionally Equivalent Global Expedited Package Services 2 Negotiated Service Agreements and Application for Non-Public Treatment of Materials Filed Under Seal, April 29, 2010 (Notice).

[2] Docket No. CP2009–50, Order Granting Clarification and Adding Global Expedited Package Services 2 to the Competitive Product List, August 28, 2009 (Order No. 290).

SMALL BUSINESS ADMINISTRATION

[Disaster Declaration #12147 and #12148]

Mississippi Disaster #MS–00035

AGENCY: Small Business Administration.

ACTION: Notice.

SUMMARY: This is a Notice of the Presidential declaration of a major disaster for the State of Mississippi (FEMA–1906–DR), dated 04/29/2010.

Incident: Severe Storms, Tornadoes, and Flooding.

Incident Period: 04/23/2010 through 04/24/2010.

Effective Date: 04/29/2010.

Physical Loan Application Deadline Date: 06/28/2010.

Economic Injury (EIDL) Loan Application Deadline Date: 01/29/2011.

ADDRESSES: Submit completed loan applications to: Small Business Administration, Processing and Disbursement Center, 14925 Kingsport Road, Fort Worth, TX 76155.

FOR FURTHER INFORMATION CONTACT: A. Escobar, Office of Disaster Assistance, U.S. Small Business Administration, 409 3rd Street, SW., Suite 6050, Washington, DC 20416.

SUPPLEMENTARY INFORMATION: Notice is hereby given that as a result of the President's major disaster declaration on 04/29/2010, applications for disaster loans may be filed at the address listed above or other locally announced locations.

The following areas have been determined to be adversely affected by the disaster:

Primary Counties (Physical Damage and Economic Injury Loans): Attala, Choctaw, Holmes, Warren, Yazoo.

Contiguous Counties and Parishes (Economic Injury Loans Only):

Mississippi: Carroll, Claiborne, Hinds, Humphreys, Issaquena, Leake, Leflore, Madison, Montgomery, Neshoba, Oktibbeha, Sharkey, Webster, Winston.

Louisiana: East Carroll, Madison, Tensas.

The Interest Rates are:

	Percent
For Physical Damage:	
Homeowners With Credit Available Elsewhere	5.500
Homeowners Without Credit Available Elsewhere	2.750
Businesses With Credit Available Elsewhere	6.000
Businesses Without Credit Available Elsewhere	4.000
Non-Profit Organizations With Credit Available Elsewhere	3.625
Non-Profit Organizations Without Credit Available Elsewhere	3.000
For Economic Injury:	
Businesses & Small Agricultural Cooperatives Without Credit Available Elsewhere	4.000
Non-Profit Organizations Without Credit Available Elsewhere	3.000

The number assigned to this disaster for physical damage is 12147C and for economic injury is 121480.

(Catalog of Federal Domestic Assistance Numbers 59002 and 59008)

Joseph P. Loddo,

Acting Associate Administrator for Disaster Assistance.

[FR Doc. 2010–10774 Filed 5–6–10; 8:45 am]

BILLING CODE 8025–01–P

SMALL BUSINESS ADMINISTRATION

[Disaster Declaration #12138 and #12139]

Massachusetts Disaster Number MA–00027

AGENCY: U.S. Small Business Administration.

ACTION: Amendment 1.

SUMMARY: This is an amendment of the Presidential declaration of a major disaster for Public Assistance Only for the Commonwealth of Massachusetts (FEMA–1895–DR), dated 04/22/2010.

Incident: Severe Storms and Flooding.

Incident Period: 03/12/2010 through 04/26/2010.

Effective Date: 04/26/2010.

Physical Loan Application Deadline Date: 06/21/2010.

Economic Injury (EIDL) Loan Application Deadline Date: 01/24/2011.

ADDRESSES: Submit completed loan applications to: U.S. Small Business Administration, Processing And Disbursement Center, 14925 Kingsport Road, Fort Worth, TX 76155.

FOR FURTHER INFORMATION CONTACT: A. Escobar, Office of Disaster Assistance, U.S. Small Business Administration, 409 3rd Street, SW., Suite 6050, Washington, DC 20416.

SUPPLEMENTARY INFORMATION: The notice of the President's major disaster declaration for Private Non-Profit organizations in the Commonwealth of Massachusetts, dated 04/22/2010, is hereby amended to establish the incident period for this disaster as beginning 03/12/2010 and continuing through 04/26/2010.

All other information in the original declaration remains unchanged.

(Catalog of Federal Domestic Assistance Numbers 59002 and 59008)

Joseph P. Loddo,

Acting Associate Administrator for Disaster Assistance.

[FR Doc. 2010–10776 Filed 5–6–10; 8:45 am]

BILLING CODE 8025–01–P

SMALL BUSINESS ADMINISTRATION

[Disaster Declaration #12149 and #12150]

Mississippi Disaster #MS–00036

AGENCY: Small Business Administration.

ACTION: Notice.

SUMMARY: This is a Notice of the Presidential declaration of a major disaster for Public Assistance Only for the State of Mississippi (FEMA–1906–DR), dated 04/29/2010.

Incident: Severe Storms, Tornadoes, and Flooding.

Incident Period: 04/23/2010 through 04/24/2010.

Effective Date: 04/29/2010.

Physical Loan Application Deadline Date: 06/28/2010.

Economic Injury (EIDL) Loan Application Deadline Date: 01/29/2011.

ADDRESSES: Submit completed loan applications to: Small Business Administration, Processing and Disbursement Center, 14925 Kingsport Road, Fort Worth, TX 76155.

FOR FURTHER INFORMATION CONTACT: A. Escobar, Office of Disaster Assistance, U.S. Small Business Administration, 409 3rd Street, SW., Suite 6050, Washington, DC 20416.

SUPPLEMENTARY INFORMATION: Notice is hereby given that as a result of the President's major disaster declaration on 04/29/2010, Private Non-Profit organizations that provide essential services of governmental nature may file disaster loan applications at the address listed above or other locally announced locations.

The following areas have been determined to be adversely affected by the disaster:

Primary Counties

Choctaw, Yazoo.

The Interest Rates are:

	Percent
For Physical Damage:	
Non-Profit Organizations with Credit Available Elsewhere	3.625
Non-Profit Organizations without Credit Available Elsewhere	3.000
For Economic Injury:	
Non-Profit Organizations without Credit Available Elsewhere	3.000

The number assigned to this disaster for physical damage is 12149C and for economic injury is 12150C.

(Catalog of Federal Domestic Assistance Numbers 59002 and 59008)

Joseph P. Loddo,

Acting Associate Administrator for Disaster Assistance.

[FR Doc. 2010–10775 Filed 5–6–10; 8:45 am]

BILLING CODE 8025–01–P

SMALL BUSINESS ADMINISTRATION

[Disaster Declaration #12100 and #12101]

Massachusetts Disaster Number MA–00025

AGENCY: U.S. Small Business Administration.

ACTION: Amendment 1.

SUMMARY: This is an amendment of the Presidential declaration of a major disaster for the Commonwealth of Massachusetts (FEMA–1895–DR), dated 03/29/2010.

Incident: Severe Storms and Flooding.

Incident Period: 03/12/2010 and continuing through 04/26/2010.

Effective Date: 04/26/2010.

Physical Loan Application Deadline Date: 05/28/2010.

EIDL Loan Application Deadline Date: 12/29/2010.

ADDRESSES: Submit completed loan applications to: U.S. Small Business Administration, Processing and Disbursement Center, 14925 Kingsport Road, Fort Worth, TX 76155.

FOR FURTHER INFORMATION CONTACT: A. Escobar, Office of Disaster Assistance, U.S. Small Business Administration, 409 3rd Street, SW., Suite 6050, Washington, DC 20416.

SUPPLEMENTARY INFORMATION: The notice of the President's major disaster declaration for the Commonwealth of Massachusetts, dated 03/29/2010 is hereby amended to establish the incident period for this disaster as beginning 03/12/2010 and continuing through 04/26/2010.

All other information in the original declaration remains unchanged.

(Catalog of Federal Domestic Assistance Numbers 59002 and 59008)

Joseph P. Loddo,

Acting Associate Administrator for Disaster Assistance.

[FR Doc. 2010–10777 Filed 5–6–10; 8:45 am]

BILLING CODE 8025–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–62012; File No. SR–ISE–2010–36]

Self-Regulatory Organizations; International Securities Exchange, LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change Relating to the Options Regulatory Fee

April 30, 2010.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the "Act"),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on April 26, 2010, the International Securities Exchange, LLC (the "Exchange" or the "ISE") filed with the Securities and Exchange Commission the proposed rule change as described in Items I, II, and III, below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The ISE is proposing to amend the Options Regulatory Fee. The text of the proposed rule change is available on the Exchange's Web site (*http://www.ise.com*), at the principal office of the Exchange, at the Commission's Public Reference Room, and on the Commission's Web site at *http://www.sec.gov.*

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The self-regulatory organization has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of the proposed rule change is to amend the Options Regulatory Fee ("ORF"). The Exchange notes that the total monthly charges to be assessed in a given month will be rounded to the nearest $0.01. The Exchange currently charges an ORF of $0.0035 per contract to each member for all options transactions executed or cleared by the member that are cleared by The Options Clearing Corporation ("OCC") in the customer range, *i.e.*, transactions that clear in the customer account of the member's clearing firm at OCC. The ORF is collected indirectly from members through their clearing firms by OCC on behalf of the Exchange. There is a minimum one-cent charge per trade.[3] The Exchange does not calculate the ORF on a trade-by-trade basis. ISE calculates the ORF based on the aggregate number of contracts executed by each clearing firm every month. Accordingly, the Exchange proposes to remove the minimum one-cent charge per trade. The Exchange believes eliminating the one-cent charge per trade should reduce the fee related to the ORF for members.

This proposed fee change will be operative on May 1, 2010.

2. Statutory Basis

The basis under the Securities Exchange Act of 1934 (the "Exchange Act") for this proposed rule change is the requirement under Section 6(b)(4) that an exchange have an equitable allocation of reasonable dues, fees and other charges among its members and other persons using its facilities. The Exchange believes this proposed rule change is equitable because it eliminates the minimum one-cent charge per trade thereby reducing the monthly ORF charge to all members.

B. Self-Regulatory Organization's Statement on Burden on Competition

The proposed rule change does not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange has not solicited, and does not intend to solicit, comments on this proposed rule change. The Exchange has not received any unsolicited written comments from members or other interested parties.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A)(ii) of the Act[4] and paragraph (f)(2) of Rule 19b–4[5] thereunder. At any time within 60 days of the filing of the proposed rule change, the Commission may summarily abrogate such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an e-mail to *rule-comments@sec.gov*. Please include File Number SR–ISE–2010–36 on the subject line.

Paper Comments

- Send paper comments in triplicate to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, 100 F Street, NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–ISE–2010–36. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 61154 (December 11, 2009), 74 FR 67278 (December 18, 2009) (SR–ISE–2009–105).

[4] 15 U.S.C. 78s(b)(3)(A)(ii).

[5] 17 CFR 240.19b–4(f)(2).

Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street, NE., Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–ISE–2010–36 and should be submitted on or before May 28, 2010.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[6]

Florence E. Harmon,

Deputy Secretary.

[FR Doc. 2010–10830 Filed 5–6–10; 8:45 am]

BILLING CODE 8010–01–P

[6] 17 CFR 200.30–3(a)(12).

DEPARTMENT OF STATE

[Public Notice: 6990]

30-Day Notice of Proposed Information Collection: DS–4100, Iran Program Grants Vetting, Information Collection 1405–0176

ACTION: Notice of request for public comments and submission to OMB of proposed collection of information.

SUMMARY: The Department of State has submitted the following information collection request to the Office of Management and Budget (OMB) for approval in accordance with the Paperwork Reduction Act of 1995.

Title of Information Collection: Iran Program Grants.

- *OMB Control Number:* 1405–0176.
- *Type of Request:* Extension of a Currently Approved Collection.
- *Originating Office:* Office of Iranian Affairs, Bureau of Near Eastern Affairs (NEA/IR).
- *Form Number:* DS–4100.
- *Respondents:* Potential grantees and participants for Iran programs.
- *Estimated Number of Respondents:* 200.
- *Estimated Number of Responses:* 200.
- *Average Hours per Response:* 1.
- *Total Estimated Burden:* 200.
- *Frequency:* On occasion.
- *Obligation to Respond:* Required to obtain benefits.

DATES: The Department will accept comments from the public up to 30 days from May 7, 2010.

ADDRESSES: Direct comments to the Department of State Desk Officer in the Office of Information and Regulatory Affairs at the Office of Management and Budget (OMB). You may submit comments by the following methods:

- *E-mail: oira_submission@omb.eop.gov.* You must include the DS form number, information collection title, and OMB control number in the subject line of your message.
- *Fax:* 202–395–5806. Attention: Desk Officer for Department of State.

FOR FURTHER INFORMATION CONTACT: Direct requests for additional information regarding the collection listed in this notice, including requests for copies of the proposed information collection and supporting documents, to Danika Walters, Bureau of Near Eastern Affairs, U.S. Department of State, Washington, DC 20520, who may be reached on 202–647–1347, or via e-mail at *WaltersDL@state.gov.*

SUPPLEMENTARY INFORMATION:

We are soliciting public comments to permit the Department to:

- Evaluate whether the proposed information collection is necessary for the proper performance of our functions.
- Evaluate the accuracy of our estimate of the burden of the proposed collection, including the validity of the methodology and assumptions used.
- Enhance the quality, utility, and clarity of the information to be collected.
- Minimize the reporting burden on those who are to respond, including the use of automated collection techniques or other forms of technology.

Abstract of Proposed Collection

The State Department has made the awarding of grants a key component of its Iran policy. As a condition of licensing these activities, the Office of Foreign Assets Control (OFAC) mandate that the Department conduct a vetting of potential Iran programs grantees and sub-grantees for counter-terrorism purposes. To conduct this vetting the Department envisions collecting information from grantees and sub-grantees regarding the identity and background of their key employees, board of directors, and program participants.

Methodology

We will collect this information either through fax or electronic submission.

Dated: May 3, 2010.

Jillian Burns,

Office Director, Office of Iranian Affairs, Bureau of Near Eastern Affairs, Department of State.

[FR Doc. 2010–10838 Filed 5–6–10; 8:45 am]

BILLING CODE 4710–31–P

DEPARTMENT OF STATE

[Public Notice 6984]

Request for Nominations of Experts for Consideration as Authors and/or Editors for the Fifth Global Environment Outlook (GEO–5)

ACTION: This is an announcement of an opportunity to recommend experts to the U.S. Government for nomination as Coordinating Lead Authors, Lead Authors, Contributing Authors and Review Editors for the Fifth Global Environment Outlook (GEO–5).

SUMMARY: Governments, along with other stakeholder groups, relevant institutions, and United Nations agencies, have been invited to nominate experts to participate in the GEO–5 assessment. The Department of State is coordinating the recommendation of experts to the United Nations Environment Programme (UNEP) for GEO–5. The purpose of GEO–5 is to provide a comprehensive, integrated, and scientifically credible global environmental assessment to support decision-making processes at appropriate levels. Individuals may seek to nominate others (or themselves) directly on *http://www.unep.org/geo/nominations/*, or through the U.S. government. For those who wish to submit their nominations through the U.S. government, your nomination must be submitted to UNEP at the Web site above, and the nomination must also be received at the U.S. Department of State, Office of Environmental Policy, which is coordinating the U.S. Government nomination process, no later than May 12, 2010. The remainder of this announcement provides background information and describes how to submit recommendations.

The Global Environment Outlook is the primary assessment process of the UN Environment Programme (UNEP), which helps keep the global environment under review. It is a tool that informs decision-making, focusing on assessment priorities and analyzing policy challenges and opportunities to provide policy response options. It is

also a communications tool that brings together diverse stakeholder groups, builds capacity and aims to raise awareness on the status and trends of the environment.

Experts are expected to have a thorough understanding in one or more of the following areas: Environmental science; environment and development priorities, challenges and policy; and environmental management or governance. UNEP will select nominees by matching expertise to specific roles, paying due regard to disciplinary, gender and geographical balance. Details of the GEO–5 nominating process may be found online at *http://www.unep.org/geo/nominations/* and *http://www.globalchange.gov/globalenvironmentoutlook*. To access the nominations form on the UNEP Web site, please use *Username:* geo5_2012 and *Password:* nominee. Nominations may be made on *http://www.unep.org/geo/nominations/*. For nominations to be considered within the U.S. Government nomination process, they must also be submitted to the United States Department of State. GEO–5 will review the nominations from all participating governments, individuals and organizations and make final decisions on nominees.

Selection as a U.S. Government nominee does not guarantee selection by GEO–5 itself. Participants in the GEO process volunteer their time. Nominated individuals should agree in advance to fulfill the role for which they are nominated, should they be selected to do so by GEO. Nomination by the U.S. Government to GEO–5 does not imply a commitment by the U.S. Government to provide financial support for participation.

UNEP may provide travel and subsistence costs for non-Federal participants if requested by the participant, subject to the availability of resources. Additional guidance on compensation of expenses and remuneration of services will be available on the UNEP Web site.

How to Recommend Experts

1. Refer to the GEO–5 Web site *http://www.unep.org/geo/nominations/* for detailed background information on the 5th Assessment Report. To access the nominations form on the UNEP Web site, please use *Username:* geo5_2012 and *Password:* nominee. The document on GEO–5 nominations identifies the substantive areas covered in each of the chapters of the report. It is important to note that the time commitment required to carry out different roles in the GEO–5 process varies greatly.

2. Make sure that any of the experts that you wish to recommend are willing to serve in the role for which they are nominated.

3. Nominations to be considered within the U.S. Government nomination process must be submitted to the U.S. Department of State, Office of Environmental Policy no later than May 12, 2010. Complete the GEO–5 nomination form, one for each nominee, including an up-to-date CV, identification of the relevant chapters, and the role for which the individual is being nominated. Send this information by e-mail to *rosenmanrg@state.gov* by May 12. Please note that partial nomination packages will not be considered.

What happens next?

In a process coordinated through the U.S. Department of State, Bureau of Oceans and International Environmental and Scientific Affairs, Office of Environmental Policy, technical experts and managers of relevant science and technology programs within the U.S. government will make and review recommendations and forward a slate of nominees to GEO–5 on the basis of their qualifications. Submission of a nomination to the State Department does not guarantee that the nomination will be forwarded by the U.S. Government to UNEP.

For Further Information

Richard Rosenman of the Office of Environmental Policy, U.S. Department of State, is serving as the coordinator of this nomination process. Mr. Rosenman can be reached at 1–202–647–1126, e-mail *rosenmanrg@state.gov*.

Disclaimer: This Public Notice is a request for nominations, and is not a request for applications. No granting or money is directly associated with this request for suggestions for GEO–5. There is no expectation of U.S. Government resources or funding associated with any nominations.

Dated: May 3, 2010.

Willem H. Brakel,

Director, Office of Environmental Policy, Department of State.

[FR Doc. 2010–10842 Filed 5–6–10; 8:45 am]

BILLING CODE 4710–09–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Winnebago County, IL and Rock County, WI

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement will not be prepared for the corridor extending from the intersection of Wisconsin Route 213 and Nye School Road northwest of Beloit, Rock County, Wisconsin to the interchange of Rockton Road and I–90 southeast of South Beloit, Winnebago County, Illinois.

FOR FURTHER INFORMATION CONTACT: Norman R. Stoner, P.E., Division Administrator, Federal Highway Administration, 3250 Executive Park Drive, Springfield, Illinois 62703, Phone: (217) 492–4600. George F. Ryan, P.E., Region Two Engineer, District 2, Illinois Department of Transportation, 819 Depot Avenue, Dixon, Illinois 61021, Phone: (815) 284–2271.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Illinois Department of Transportation, published a notice of intent to prepare an Environmental Impact Statement (EIS) in the **Federal Register** dated October 26, 1995 (Volume 60, Number 207, pp. 54910–54911) to study a proposal to construct a highway on new alignment over a distance of approximately eight miles to better serve the transportation needs of the Beloit and Janesville Urbanized Areas.

Due to public opposition, lack of regional support and a change in the conditions in the region that warranted the study, this project has been cancelled and no further project activities will occur.

Comments or questions concerning this notice should be directed to FHWA or the Illinois Department of Transportation at the addresses provided above.

Issued on: April 30, 2010.

Norman R. Stoner,

Division Administrator, Springfield, Illinois.

[FR Doc. 2010–10768 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Cook County, IL

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing this Notice to advise the public that an Environmental Impact Statement (EIS) will be prepared for the 75th Street Corridor Improvement Project, which involves construction of new railroad main tracks, two new rail flyover bridges, and a new rail/roadway grade separation structure within existing rail corridors in the cities of Chicago and Hometown, Cook County, Illinois.

FOR FURTHER INFORMATION CONTACT: Norman R. Stoner, P.E., Division Administrator, Federal Highway Administration, Springfield, Illinois 62703, Phone: (217) 492–4600. George Weber, Chief, Bureau of Railroads, Illinois Department of Transportation, 100 W Randolph Street, Suite 6–600, Chicago, Illinois 60601–3229, Phone: (312) 793–4222.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Illinois Department of Transportation, Bureau of Railroads, will prepare an EIS on a proposal to reconfigure freight and passenger rail tracks within an existing approximately 12-mile corridor generally centered along 75th Street in south Chicago. The proposed project comprises several elements of the overall Chicago Region Environmental and Transportation Efficiency Program (CREATE), a joint effort of the Illinois Department of Transportation, the Chicago Department of Transportation, and the Association of American Railroads to restructure, modernize, and expand freight and passenger rail facilities and highway grade separations in the Chicago metropolitan area. Alternative configurations of rail flyovers and track realignments will be considered and refined. The no-action alternative will also be evaluated. A preferred alternative will be presented at a public hearing. Preliminary measures to minimize harm, construction cost estimates, and estimated right-of-way and relocation requirements will also be developed.

The proposed action will reduce rail congestion and delays by eliminating conflicts between four freight railroads and two passenger railroads operating in the corridor, improve roadway safety by eliminating an existing at-grade roadway crossing, and allow passenger rail access from the Metra Southwest Service to the LaSalle Street Station, thereby reducing congestion at Union Station. The project area consists of urban residential and industrial land uses, so no natural resource impacts are anticipated. Potential impacts may include residential relocations, effects on community cohesion and travel patterns, impacts to publicly-owned parks, and impacts to properties potentially eligible for listing on the National Register of Historic Places. There is also the potential for noise and air quality impacts.

To ensure that the full range of issues related to this proposed action are addressed, and all substantive issues are identified, this project is being developed using the principles of Context Sensitive Solutions per the Illinois Department of Transportation's Policies and Procedures. A Stakeholder Involvement Plan (SIP) will be developed that will detail the public involvement activities that will be conducted as part of this study, and will address the Coordination Plan requirements of 23 U.S.C. 139(g) within the context of the NEPA process. Under the SIP, an interdisciplinary Project Study Group will be formed to develop the project, and a Community Advisory Group will be formed to provide input to the study process. As part of the EIS process, a scoping meeting for obtaining input from Resource Agencies will be held on June 11, 2010. Public informational meetings, focus meetings with stakeholders, a public hearing, newsletters, a project Web site and interest group meetings will provide opportunities for public involvement. The project's Draft EIS will be available for public and agency review prior to the public hearing. The time and location of the public hearing will be announced in local newspapers. Comments or questions concerning this proposed action and the Draft EIS should be directed to FHWA or the Illinois Department of Transportation at the addresses provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation of Federal program and activities apply to this program.)

Issued on: April 28, 2010.

Norman R. Stoner,

Division Administrator.

[FR Doc. 2010–10770 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Notice of Final Federal Agency Actions on Proposed Expanded Intermodal Freight Terminal in Michigan

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Decision by FHWA and Notice of Limitation of Claims for Judicial Review of Actions by FHWA and Other Federal Agencies.

SUMMARY: This notice announces the availability of a Record of Decision by FHWA pursuant to the requirements of the National Environmental Protection Policy Act of 1969 (NEPA), 42 U.S.C. 4321, as amended and the Council on Environmental Quality Regulations (40 CFR Parts 1500–1508). In addition, this Notice announces actions taken by FHWA and other Federal agencies that are final within the meaning of 23 U.S.C. 139(1)(1). These actions relate to proposed improvements to the Livernois-Junction Yard, also known as the Detroit Intermodal Freight Terminal (DIFT) and associated external-to-terminal road and rail improvements in Wayne County, Michigan. These actions grant approvals for the project.

DATES: By this notice, the FHWA is advising the public of final agency actions subject to 23 U.S.C. 771 and 23 U.S.C. 139(1)(1). A claim seeking judicial review of the Federal Agency actions on the highway project will be barred unless the claim is filed on or before November 3rd, 2010 (180 days from May 7th). If the Federal law that authorizes that judicial review of a claim provides a time period of less than 180 days for filing such claim, then that shorter time period still applies.

FOR FURTHER INFORMATION CONTACT: Mr. David Williams, Environmental Program Manager, Federal Highway Administration Michigan Division, 315 West Allegan Street, Room 201, Lansing, MI 48933; phone: (517) 702–1820, Fax: (517) 377–1804; and e-mail: *David.Williams@dot.gov*. Mr. Ryan Rizzo, Major Project Manager, Federal Highway Administration Michigan Division, 315 West Allegan Street, Room 201, Lansing, MI 48933; phone: (517) 702–1833, Fax: (517) 377–1844; e-mail: *Ryan.Rizzo@dot.gov.*

SUPPLEMENTARY INFORMATION: Notice is hereby given that the FHWA and other Federal agencies have taken final agency actions by issuing approvals for the following expansion project in the State of Michigan: Detroit Intermodal Freight Terminal. The selected alternative will: Expand the Norfolk Southern (NS) and

CSX intermodal operations at the Livernois-Junction Yard; provide the opportunity to shift the NS Triple Crown operations from Melvindale and Willow Run in Romulus to the Livernois-Junction Yard; move the CP Oak intermodal operation to the Livernois-Junction Yard; provide for external rail improvements, with participation by all four Class I railroads in Michigan (NS, CSX, CP, and CN); make roadway and yard entry gate changes; and provide enhancements to the community. The selected alternatives are primarily between John Kronk and Livernois Avenue in Southwest Detroit and east Dearborn, in Wayne County, Michigan.

The actions by the Federal agencies, and the laws under which such actions were taken, are described in the Final Environmental Impact Statement for the project approved on December 1, 2009; in the FHWA Record of Decision (ROD) issued on April 22, 2010; and in other project records. The FEIS, ROD, and other documents in the FHWA project file are available by contacting the FHWA. The FHWA FEIS and ROD can be viewed and downloaded from the project Web site at: *http://www.michigan.gov/mdot/0,1607,7-151-9621_11058---,00.html* or viewed at public libraries in the project area.

This notice applies to all Federal agency decisions on the listed projects as of the issuance date of this notice and all laws under which such actions were taken, including but not limited to:

1. *General:* National Environmental Policy Act [42 U.S.C. 4321–4351]; Federal-Aid Act [23 U.S.C. 109].
2. *Air:* Clean Air Act, as amended [42 U.S.C. 7401–7671(q)].
3. *Land:* Section 4(f) of the Department of Transportation Act of 1966 [49 U.S.C. 303]; Landscaping and Scenic Enhancement (Wildflowers) [23 U.S.C. 319].
4. *Wildlife and Plants:* Endangered Species Act [16 U.S.C. 1531–1544].
5. *Historic and Cultural Resources:* Section 106 of the National Historic Preservation Act of 1966, as amended [16 U.S.C. 470(f) *et seq.*]; Archeological Resources Protection Act of 1977 [16 U.S.C. 470(aa)–11]; Archeological and Historic Preservation Act [16 U.S.C. 469–469(c)].
6. *Social and Economic:* Civil Rights Act of 1964 [42 U.S.C. 2000(d)–2000(d)(1)]; American Indians Religious Freedom Act [42 U.S.C. 1996]; Farmland Protection Act [7 U.S.C. 4201–4209]; the Uniform Relocation Assistance and Real Property Acquisition Policies of 1970, as amended [42 U.S.C. 61].
7. *Wetlands and Water Resources:* Clean Water Act [33 U.S.C. 1251–1377 (Section 404, Section 401, Section 319)]; Coastal Zone Management Act [14 U.S.C. 1451–1465]; Land and Water Conservation Fund [16 U.S.C. 4601–4604]; Safe Drinking Water Act [42 U.S.C. 300(f)–300(j)(6)]; Rivers and Harbors Act of 1899 [42 U.S.C. 401–406]; TEA–21 Wetland Mitigation [23 U.S.C. 103(b)(6)(m), 133(b)(11)]; Flood Disaster Protection Act [42 U.S.C. 4001–4128].
8. *Hazardous Materials:* Comprehensive Environmental Response, Compensation and Liability Act [42 U.S.C. 9501–9675]; Superfund Amendments and Reauthorization Act of 1986 [PL 99–499]; Resource, Conservation and Recovery Act [42 U.S.C. 6901–6992(k)].
9. *Executive Orders:* E.O. 11990, Protection of Wetlands; E.O. 11988, Floodplains Management; E.O. 12898, Federal Actions to Address Environmental Justice in Minority and Low Income Populations; E.O. 11593, Protection and Enhancement of Cultural Resources; E.O. 13007, Indian Sacred Sites; E.O. 13112, Invasive Species; E.O. 13274, Environmental Stewardship and Transportation Infrastructure Project Reviews.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on federal programs and activities apply to this program.)

Authority: 23 U.S.C. 139(l)(1).

Issued on: April 30, 2010.

Russell L. Jorgenson,

Division Administrator, Federal Highway Administration, Lansing, Michigan.

[FR Doc. 2010–10783 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[Docket No. FD 35374]

Port Harbor Railroad, Inc.—Lease and Operation Exemption—Line of Tri-City Regional Port District

Port Harbor Railroad, Inc. (Port Harbor), a noncarrier, has filed a verified notice of exemption under 49 CFR 1150.31 to lease from Tri-City Regional Port District (Tri-City), and to operate, a 2.97-mile line of railroad extending between milepost 0.00 and milepost 2.97 in Madison County, Ill.

The transaction is expected to be consummated on or after June 10, 2010.

Port Harbor certifies that its projected annual revenues as a result of this transaction will not exceed those that would qualify it as a Class III rail carrier. Port Harbor further certifies that its projected annual revenues as a result of this transaction will not exceed $5 million.

According to Port Harbor, Tri-City is not a common carrier and has no intention of becoming one. Port Harbor states that, at the present time, the industries located on Tri-City's property receive service over the rail lines of the Terminal Railroad Association of St. Louis that end at milepost 0.00. From milepost 0.00 to milepost 2.97, service is performed by a contractor hired by Tri-City to provide switching service. Port Harbor explains that the proposed transaction will provide more coordinated service to shippers by licensing Port Harbor as a common carrier on the 2.97-mile line and through industrial track agreements with Port Harbor to provide switching service. The lease and operation agreement covers all track and railroad rights-of-way between milepost 0.00 and milepost 2.97, including all appurtenances thereto, and any bridges, culverts or other structures over which such track or tracks may be constructed. Port Harbor states that the proposed transaction will not involve any agreement that would limit future interchange traffic with a third-party connecting carrier.

If the verified notice contains false or misleading information, the exemption is void *ab initio.* Petitions to revoke the exemption under 49 U.S.C. 10502(d) may be filed at any time. The filing of a petition to revoke will not automatically stay the effectiveness of the exemption. Stay petitions must be filed no later than May 14, 2010 (at least 7 days before the exemption becomes effective).

An original and 10 copies of all pleadings, referring to Docket No. FD 35374, must be filed with the Surface Transportation Board, 395 E Street, SW., Washington, DC 20423–0001. In addition, one copy of each pleading must be served on Andrew P. Goldstein, McCarthy, Sweeney & Harkaway, P.C., 1825 K Street, NW., Suite 700, Washington, DC 20006.

Board decisions and notices are available on our Web site at *www.stb.dot.gov.*

Decided: May 3, 2010.

By the Board, Rachel D. Campbell, Director, Office of Proceedings.

Jeffrey Herzig,

Clearance Clerk.

[FR Doc. 2010–10788 Filed 5–6–10; 8:45 am]

BILLING CODE 4915–01–P

DEPARTMENT OF TRANSPORTATION

Maritime Administration

[Docket No. MARAD 2010 0047]

Requested Administrative Waiver of the Coastwise Trade Laws

AGENCY: Maritime Administration, Department of Transportation.

ACTION: Invitation for public comments on a requested administrative waiver of the Coastwise Trade Laws for the vessel EROS.

SUMMARY: As authorized by 46 U.S.C. 12121, the Secretary of Transportation, as represented by the Maritime Administration (MARAD), is authorized to grant waivers of the U.S.-build requirement of the coastwise laws under certain circumstances. A request for such a waiver has been received by MARAD. The vessel, and a brief description of the proposed service, is listed below. The complete application is given in DOT docket MARAD–2010–0047 at *http://www.regulations.gov.* Interested parties may comment on the effect this action may have on U.S. vessel builders or businesses in the U.S. that use U.S.-flag vessels. If MARAD determines, in accordance with 46 U.S.C. 12121 and MARAD's regulations at 46 CFR part 388 (68 FR 23084; April 30, 2003), that the issuance of the waiver will have an unduly adverse effect on a U.S.-vessel builder or a business that uses U.S.-flag vessels in that business, a waiver will not be granted. Comments should refer to the docket number of this notice and the vessel name in order for MARAD to properly consider the comments. Comments should also state the commenter's interest in the waiver application, and address the waiver criteria given in § 388.4 of MARAD's regulations at 46 CFR part 388.

DATES: Submit comments on or before June 7, 2010.

ADDRESSES: Comments should refer to docket number MARAD–2010–0047. Written comments may be submitted by hand or by mail to the Docket Clerk, U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590. You may also send comments electronically via the Internet at *http://www.regulations.govhttp://smses.dot.gov/submit/.* All comments will become part of this docket and will be available for inspection and copying at the above address between 10 a.m. and 5 p.m., E.T., Monday through Friday, except federal holidays. An electronic version of this document and all documents entered into this docket is available on the World Wide Web at *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Joann Spittle, U.S. Department of Transportation, Maritime Administration, 1200 New Jersey Avenue, SE., Room W21–203, Washington, DC 20590. Telephone 202–366–5979.

SUPPLEMENTARY INFORMATION: As described by the applicant the intended service of the vessel EROS is:

Intended Commercial Use Of Vessel: "Occasional small charter groups."

Geographic Region: "California, Alaska, Washington, U.S. Virgin Islands."

Privacy Act

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78).

By Order of the Maritime Administrator.

Dated: April 29, 2010.

Christine Gurland,

Secretary, Maritime Administration.

[FR Doc. 2010–10898 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–81–P

DEPARTMENT OF TRANSPORTATION

Maritime Administration

[Docket No. MARAD–2010–0049]

Requested Administrative Waiver of the Coastwise Trade Laws

AGENCY: Maritime Administration, Department of Transportation.

ACTION: Invitation for public comments on a requested administrative waiver of the Coastwise Trade Laws for the vessel PEGASUS.

SUMMARY: As authorized by 46 U.S.C. 12121, the Secretary of Transportation, as represented by the Maritime Administration (MARAD), is authorized to grant waivers of the U.S.-build requirement of the coastwise laws under certain circumstances. A request for such a waiver has been received by MARAD. The vessel, and a brief description of the proposed service, is listed below. The complete application is given in DOT docket MARAD–2010–0049 at *http://www.regulations.gov.* Interested parties may comment on the effect this action may have on U.S. vessel builders or businesses in the U.S. that use U.S.-flag vessels. If MARAD determines, in accordance with 46 U.S.C. 12121 and MARAD's regulations at 46 CFR part 388 (68 FR 23084; April 30, 2003), that the issuance of the waiver will have an unduly adverse effect on a U.S.-vessel builder or a business that uses U.S.-flag vessels in that business, a waiver will not be granted. Comments should refer to the docket number of this notice and the vessel name in order for MARAD to properly consider the comments. Comments should also state the commenter's interest in the waiver application, and address the waiver criteria given in § 388.4 of MARAD's regulations at 46 CFR part 388.

DATES: Submit comments on or before June 7, 2010.

ADDRESSES: Comments should refer to docket number MARAD–2010–0049. Written comments may be submitted by hand or by mail to the Docket Clerk, U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590. You may also send comments electronically via the Internet at *http://www.regulations.gov http://smses.dot.gov/submit/.* All comments will become part of this docket and will be available for inspection and copying at the above address between 10 a.m. and 5 p.m., E.T., Monday through Friday, except federal holidays. An electronic version of this document and all documents entered into this docket is available on the World Wide Web at *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Joann Spittle, U.S. Department of Transportation, Maritime Administration, 1200 New Jersey Avenue, SE., Room W21–203, Washington, DC 20590. Telephone 202–366–5979.

SUPPLEMENTARY INFORMATION: As described by the applicant the intended service of the vessel PEGASUS is:

Intended Commercial Use of Vessel: "Cruising charters carrying passengers for pleasure trips only, no fishing."

Geographic Region: "ME, NH, RI, MA, CT, NY, NJ, FL."

Privacy Act

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if

submitted on behalf of an association, business, labor union, *etc.*). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78).

By Order of the Maritime Administrator.

Christine Gurland,

Secretary, Maritime Adminstration.

[FR Doc. 2010–10903 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–81–P

DEPARTMENT OF TRANSPORTATION

Maritime Administration

[Docket No. MARAD 2010 0046]

Requested Administrative Waiver of the Coastwise Trade Laws

AGENCY: Maritime Administration, Department of Transportation.

ACTION: Invitation for public comments on a requested administrative waiver of the Coastwise Trade Laws for the vessel AMICUS II.

SUMMARY: As authorized by 46 U.S.C. 12121, the Secretary of Transportation, as represented by the Maritime Administration (MARAD), is authorized to grant waivers of the U.S.-build requirement of the coastwise laws under certain circumstances. A request for such a waiver has been received by MARAD. The vessel, and a brief description of the proposed service, is listed below. The complete application is given in DOT docket MARAD–2010–0046 at *http://www.regulations.gov.* Interested parties may comment on the effect this action may have on U.S. vessel builders or businesses in the U.S. that use U.S.-flag vessels. If MARAD determines, in accordance with 46 U.S.C. 12121 and MARAD's regulations at 46 CFR part 388 (68 FR 23084; April 30, 2003), that the issuance of the waiver will have an unduly adverse effect on a U.S.-vessel builder or a business that uses U.S.-flag vessels in that business, a waiver will not be granted. Comments should refer to the docket number of this notice and the vessel name in order for MARAD to properly consider the comments. Comments should also state the commenter's interest in the waiver application, and address the waiver criteria given in § 388.4 of MARAD's regulations at 46 CFR part 388.

DATES: Submit comments on or before June 7, 2010.

ADDRESSES: Comments should refer to docket number MARAD–2010–0046. Written comments may be submitted by hand or by mail to the Docket Clerk, U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590. You may also send comments electronically via the Internet at *http://www.regulations.govhttp://smses.dot.gov/submit/.* All comments will become part of this docket and will be available for inspection and copying at the above address between 10 a.m. and 5 p.m., E.T., Monday through Friday, except federal holidays. An electronic version of this document and all documents entered into this docket is available on the World Wide Web at *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Joann Spittle, U.S. Department of Transportation, Maritime Administration, 1200 New Jersey Avenue, SE., Room W21–203, Washington, DC 20590. Telephone 202–366–5979.

SUPPLEMENTARY INFORMATION:

As described by the applicant the intended service of the vessel AMICUS II is:

Intended Commercial Use Of Vessel: "Primarily recreational day trips on Lake Superior of two to eight hours in length originating from Knife River Marina in Knife River, MN. We will carry a maximum of six passengers per trip. We will also do several 3–7 day trips per year along the south shore of Lake Superior and along the North Shore of Lake Superior. Our operating season is mid May to October."

Geographic Region: "MN, WI, MI."

Privacy Act

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78).

By Order of the Maritime Administrator.

Dated: April 29, 2010.

Christine Gurland,

Secretary, Maritime Administration.

[FR Doc. 2010–10901 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–81–P

DEPARTMENT OF TRANSPORTATION

Maritime Administration

[Docket No. MARAD–2010–0044]

Requested Administrative Waiver of the Coastwise Trade Laws

AGENCY: Maritime Administration, Department of Transportation.

ACTION: Invitation for public comments on a requested administrative waiver of the Coastwise Trade Laws for the vessel GAME DAY.

SUMMARY: As authorized by 46 U.S.C. 12121, the Secretary of Transportation, as represented by the Maritime Administration (MARAD), is authorized to grant waivers of the U.S.-build requirement of the coastwise laws under certain circumstances. A request for such a waiver has been received by MARAD. The vessel, and a brief description of the proposed service, is listed below. The complete application is given in DOT docket MARAD–2010–0044 at *http://www.regulations.gov.* Interested parties may comment on the effect this action may have on U.S. vessel builders or businesses in the U.S. that use U.S.-flag vessels. If MARAD determines, in accordance with 46 U.S.C. 12121 and MARAD's regulations at 46 CFR part 388 (68 FR 23084; April 30, 2003), that the issuance of the waiver will have an unduly adverse effect on a U.S.-vessel builder or a business that uses U.S.-flag vessels in that business, a waiver will not be granted. Comments should refer to the docket number of this notice and the vessel name in order for MARAD to properly consider the comments. Comments should also state the commenter's interest in the waiver application, and address the waiver criteria given in § 388.4 of MARAD's regulations at 46 CFR part 388.

DATES: Submit comments on or before June 7, 2010.

ADDRESSES: Comments should refer to docket number MARAD–2010–0044. Written comments may be submitted by hand or by mail to the Docket Clerk, U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590. You may also send comments electronically via the Internet at *http://www.regulations.gov http://smses.dot.gov/submit/.* All comments will become part of this docket and will be available for inspection and copying at the above address between 10 a.m. and 5 p.m., E.T., Monday through Friday, except

federal holidays. An electronic version of this document and all documents entered into this docket is available on the World Wide Web at *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT: Joann Spittle, U.S. Department of Transportation, Maritime Administration, 1200 New Jersey Avenue, SE., Room W21–203, Washington, DC 20590. Telephone 202–366–5979.

SUPPLEMENTARY INFORMATION: As described by the applicant the intended service of the vessel GAME DAY is:

Intended Commercial Use Of Vessel: "Part time day and weekend sport fishing trips carrying passengers only."

Geographic Region: "Florida."

Privacy Act

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78).

Dated: April 22, 2010.

By Order of the Maritime Administrator.

Christine Gurland,

Secretary, Maritime Administration.

[FR Doc. 2010–10882 Filed 5–6–10; 8:45 am]

BILLING CODE 4910–81–P

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[Docket No. FD 35373]

Stillwater Central Railroad, Inc.—Trackage Rights Exemption—Wichita, Tillman and Jackson Railway Company, Inc., and Hollis & Eastern Railroad Company

Pursuant to a written trackage rights agreement (Trackage Agreement) dated January 22, 1992, Wichita, Tillman & Jackson Railway Co. (WTJ) granted approximately 4.6 miles of restricted overhead trackage rights to Hollis & Eastern Railroad Company (H&E), extending between milepost 74.0 at Altus, Okla., and the end of the line at milepost 78.6 near Altus.[1] Now, pursuant to the Trackage Agreement and a First Supplement,[2] H&E has agreed to assign the restricted overhead trackage rights to Stillwater Central Railroad, Inc. (SLWC), over the same trackage, including the wye track connecting to SLWC and all interchange tracks connecting with BNSF Railway Company (BNSF) and Farmrail Corporation (FMRC). The assignment is being made pursuant to an Assignment Assumption Agreement and a Lease and Transportation Services Agreement between H&E and SLWC.

The transaction is scheduled to be consummated on May 21, 2010, the effective date of the exemption (30 days after the exemption is filed). The purpose of the assigned trackage rights is to enable SLWC to interchange traffic originating or terminating on a line SLWC leases between Duke, Okla., and Altus with BNSF and FMRC.

As a condition to this exemption, any employees affected by the trackage rights will be protected by the conditions imposed in *Norfolk and Western Railway—Trackage Rights—Burlington Northern, Inc.,* 354 I.C.C. 605 (1978), as modified in *Mendocino Coast Railway—Lease and Operate—California Western Railroad,* 360 I.C.C. 653 (1980), and any employees affected by the discontinuance of those trackage rights will be protected by the conditions set out in *Oregon Short Line Railroad and The Union Pacific Railroad—Abandonment Portion Goshen Branch Between Firth and Ammon, in Bingham and Bonneville Counties, Idaho,* 360 I.C.C. 91 (1979).

This notice is filed under 49 CFR 1180.2(d)(7). If the notice contains false or misleading information, the exemption is void *ab initio.* Petitions to revoke the exemption under 49 USC 10502(d) may be filed at any time. The filing of a petition to revoke will not automatically stay the effectiveness of the exemption. Stay petitions must be filed by May 14, 2010 (at least 7 days before the exemption becomes effective).

An original and 10 copies of all pleadings, referring to Docket No. FD 35373, must be filed with the Surface Transportation Board, 395 E Street, SW., Washington, DC 20423–0001. In addition, a copy of each pleading must be served on Karl Morell, Suite 225, 1455 F Street, NW., Washington, DC 20005.

Board decisions and notices are available on our Web site at *http://www.stb.dot.gov.*

Decided: May 3, 2010.

By the Board, Rachel D. Campbell, Director, Office of Proceedings.

Jeffrey Herzig,

Clearance Clerk.

[FR Doc. 2010–10793 Filed 5–6–10; 8:45 am]

BILLING CODE 4915–01–P

[1] The line is owned by the State of Oklahoma and is leased, operated, and maintained by WTJ. H&E acquired the authority in *Hollis & Eastern Railroad Company—Trackage Rights Exemption—Wichita, Tillman & Jackson Railway Co.,* Docket No. FD 32147 (ICC served Sept. 21, 1992).

[2] The parties indicate that the first supplement is awaiting approval from the State.

DEPARTMENT OF THE TREASURY

Community Development Financial Institutions Fund

Proposed Collection; Comment Request

ACTION: Notice and request for comments.

SUMMARY: The Department of the Treasury, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on continuing information collections, as required by the Paperwork Reduction Act of 1995,44 U.S.C. 3506(c)(2)(A) Currently, the Community Development Financial Institutions (CDFI) Fund, Department of the Treasury, is soliciting comments concerning the Community Development Financial Institutions Program Awardee/Allocatee Annual Report (OMB Number 1559–0027), comprised by the Institution Level Report and the Transaction Level Report. The two documents comprise certain reporting requirements for participants in the CDFI Program, the Native American CDFI Assistance (NACA) Program, and the New Markets Tax Credits (NMTC) Program. The Annual Report forms (and related documents, including the CDFI Program assistance agreement, the NACA Program assistance agreement, and the NMTC Program allocation agreement) may be found at the CDFI Fund's Web site at *www.cdfifund.gov.*

DATES: Written comments must be received on or before July 6, 2010 to be assured of consideration.

ADDRESSES: All comments on the Annual CIIS Report must be submitted in writing and sent to Greg Bischak, Program Manager for Financial Strategies and Research, Community Development Financial Institutions Fund, U.S. Department of the Treasury, 601 13th Street, NW., Suite 200 South, Washington, DC 20005, by e-mail to *cdfihelp@cdfi.treas.gov,* or by facsimile to (202) 622–7754. Please note this is not a toll free number.

FOR FURTHER INFORMATION CONTACT: Greg Bischak, Program Manager for Financial Strategies and Research, Community Development Financial Institutions

Fund, U.S. Department of the Treasury, 601 13th Street, NW., Suite 200 South, Washington, DC 20005, by e-mail to *cdfihelp@cdfi.treas.gov,* or by facsimile to (202) 622–7754. Please note this is not a toll free number.

SUPPLEMENTARY INFORMATION:

Title: CDFI Program and NMTC Program Annual Report including CIIS.

OMB Number: 1559–0027.

Abstract: The mission is to expand the capacity of financial institutions to provide credit, capital and financial services to underserved populations and communities in the United States. The CDFI Fund's strategic goal is to improve the economic conditions of underserved communities by providing capital and technical assistance to CDFIs, capital to insured depository institutions, and NMTC allocations to Community Development Entities (CDEs), which provide credit, capital, financial services, and development services to these markets. The CDFI Fund certifies entities as CDFIs and/or CDEs.

Annual Reporting Requirements: The Annual Report consists of quantitative information at the institution and transaction levels for CDFIs and CDEs and is used to assess: (1) The awardee's/allocatee's activities as detailed in its application materials; (2) the awardee's/allocatee's approved use of the assistance; (3) the awardee's/allocatee's financial condition; (4) the socio-economic characteristics of awardee's/allocatee's borrowers/investees, loan and investment terms, repayment status, and community development impacts; and (4) overall compliance with the terms and conditions of the assistance/allocation agreement entered into by the CDFI Fund and the awardee/allocatee.

A CDFI Program awardee or a NACA Program awardee must submit an Annual Report that comprises several sections, depending on the program and the type of award. The specific components that comprise an awardee's Annual Report are set forth in the assistance agreement that the awardee enters into with the CDFI Fund in order to receive a CDFI Program or a NACA Program award. In summary:

1. A CDFI Program or NACA/NATA Program awardee that is a non-regulated entity and that receives Financial Assistance (FA) only must submit an Annual Report that comprises: (i) A Financial Report (Financial Statement) reviewed or audited by an independent certified public accountant; (ii) Single Audit A–133 (if applicable); (iii) an Institution Level Report (ILR) and a Transaction Level Report (TLR) (which include, among others, questions that measure the awardee's achievement of the Performance Goals and Measures set forth in its assistance agreement); (iv) a Uses of Financial Assistance and Matching Funds Report; and (v) an Explanation of Noncompliance (if applicable).

2. A CDFI Program or NACA Program awardee that is a regulated entity and that receives FA only must submit an Annual Report that comprises: (i) An ILR and a TLR; (ii) a Uses of Financial Assistance and Matching Funds Report; (iii) an Explanation of Noncompliance (if applicable); and (iv) a Single Audit A–133 (if applicable).

3. A CDFI Program or NACA Program awardee that receives an award from the CDFI Fund that is in the form of an equity investment must also submit a Shareholder Report.

4. A CDFI Program or NACA Program awardee that receives Technical Assistance (TA) must submit an Annual Report that comprises: (i) The documents set forth in either (1) or (2) above, as applicable, if the awardee also receives FA; (ii) Uses of Technical Assistance Report; and (iii) OMB form 269A (Financial Status Report), which can be found on the website at *http://www.cdfifund.gov.*

A NMTC Program allocatee must submit an Annual Report that comprises: (i) A financial statement that has been audited by an independent certified public accountant; (ii) an ILR (including the IRS Compliance Questions section), if the allocatee has issued any Qualified Equity Investments; and (iii) a TLR if the allocatee has issued any Qualified Low-Income Community Investments in the form of loans or investments. The components that comprise an allocatee's Annual Report are set forth in the allocation agreement that the allocatee enters into with the CDFI Fund in order to receive a NMTC Program allocation.

Current Action: Extension of a currently approved collection.

Type of review: Regular review.

Affected Public: Not-for-profit institutions, businesses or other for-profit institutions and tribal entities.

Estimated Number of Annual Respondents:

CDFI Annual ILR only: 75
CDFI Annual TLR and ILR: 159
NMTC Annual Report: 207

Burden per Report Type:

CDFI Program TA awardees Estimated Time Burden: 22 hours
CDFI Program FA ILR only awardees Estimated Time Burden: 32 hours
CDFI Program FA TLR/ILR awardees Estimated Time Burden: 64 hours
NMTC Program allocatees Estimated Time Burden: 65 hours

Total Estimated Burden per Reporting Type:

CDFI Program TA reports: 1,518 hours
CDFI Program FA ILR only reports: 2,400 hours
CDFI Program FA TLR/ILR reports: 10,176 hours
NMTC Program CDE reports: 13,455 hours

Estimated Total Annual Burden Hours = 27,549 hours

Request for Comments: Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval. All comments will become a matter of public record. Comments are invited on all aspects of the information collections, but commentators may wish to focus particular attention on: (a) The cost for CDFIs and CDEs to operate and maintain the services/systems required to provide the required information; (b) ways to enhance the quality, utility, and clarity of the information to be collected; (c) whether the collection of information is necessary for the proper evaluation of the effectiveness and impact of the CDFI Fund's programs, including whether the information shall have practical utility; (d) the accuracy of the CDFI Fund's estimate of the burden of the collection of information; (e) ways to minimize the burden of the collection of information including through the use of technology, such as software for internal accounting and geocoding to capture geographic detail while streamlining and aggregating TLR reporting for upload to CIIS, and; (f) what methods might be used to improve the data quality, internal accounting and efficiency of reporting transactions for serving other targeted populations.

Authority: 12 U.S.C.4707 *et seq.*; 26 U.S.C. 45D; 12 CFR part 1805.

Dated: May 3, 2010.

Donna J. Gambrell,

Director, Community Development Financial Institutions Fund.

[FR Doc. 2010–10867 Filed 5–6–10; 8:45 am]

BILLING CODE 4810–70–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Community Volunteer Income Tax Assistance (VITA) Matching Grant Program—Availability of Application Packages; Correction

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Correction to a notice.

SUMMARY: This document contains a correction to a notice of the Community Volunteer Income Tax Assistance (VITA) Matching Grant Program, which was published in the **Federal Register** on Wednesday, April 28, 2010 (75 FR 22437). This notice provides notice of the availability of application packages for the 2011 Community Volunteer Income Tax Assistance (VITA) Matching Grant Program.

FOR FURTHER INFORMATION CONTACT: The Grant Program Office at (404) 338–7894 (not a toll free number) or by e-mail at *Grant.Program.Office@irs.gov.*

SUPPLEMENTARY INFORMATION:

Background

Authority for the 2011 Community Volunteer Income Tax Assistance (VITA) Matching Grant Demonstration Program for tax return preparation is contained in the Consolidated Appropriation Act, 2010, Public Law 111–117, signed December 16, 2009.

Need for Correction

As published, the notice of the Community Volunteer Income Tax Assistance (VITA) Matching Grant Program contains an error which may prove to be misleading and is in need of clarification.

Correction of Publication

Accordingly, the publication of the Community Volunteer Income Tax Assistance (VITA) Matching Grant Program, which was the subject of FR Doc. 2010–9771, is corrected as follows:

On page 22437, column 1, under the caption **DATES**: The language "Application packages are available from the IRS at this time. The deadline for submitting an application to the IRS for the Community VITA Matching Grant Program is July 9, 2010." is corrected to read "Application packages are available from the IRS beginning June 1, 2010. The deadline for submitting an application to the IRS for the Community VITA Matching Grant Program is July 9, 2010.".

LaNita Van Dyke,

Chief, Publications and Regulations Branch, Legal Processing Division, Associate Chief Counsel (Procedure and Administration).

[FR Doc. 2010–10974 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Area 5 Taxpayer Advocacy Panel (Including the States of Iowa, Kansas, Minnesota, Missouri, Nebraska, Oklahoma, and Texas)

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Area 5 Taxpayer Advocacy Panel will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Sunday, June 6, 2010, Monday, June 7, 2010 and Tuesday, June 8, 2010.

FOR FURTHER INFORMATION CONTACT: Patricia Robb at 1–888–912–1227 or 414–231–2360.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that a meeting of the Area 5 Taxpayer Advocacy Panel will be held Sunday, June 6, 2010 from 1 p.m. to 5 p.m., Monday, June 7, 2010 from 8 a.m. to 5 p.m., and Tuesday, June 8, 2010 from 8 a.m. to 12 p.m. Central Time in Minneapolis, MN. The public is invited to make oral comments or submit written statements for consideration. Notification of intent to participate must be made with Patricia Robb. For more information please contact Ms. Robb at 1–888–912–1227 or 414–231–2360, or write TAP Office Stop 1006MIL, 211 West Wisconsin Avenue, Milwaukee, WI 53203–2221, or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: May 3, 2010.

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10740 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Area 6 Taxpayer Advocacy Panel (Including the States of Arizona, Colorado, Idaho, Montana, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming)

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Area 6 Taxpayer Advocacy Panel will be conducted. The Taxpayer Advocacy Panel is soliciting public comment, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Tuesday, June 1, 2010.

FOR FURTHER INFORMATION CONTACT: Janice Spinks at 1–888–912–1227 or 206–220–6098.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Area 6 Taxpayer Advocacy Panel will be held Tuesday, June 1, 2010, at 1 p.m. Pacific Time via telephone conference. The public is invited to make oral comments or submit written statements for consideration. Due to limited conference lines, notification of intent to participate must be made with Janice Spinks. For more information, please contact Ms. Spinks at 1–888–912–1227 or 206–220–6098, or write TAP Office, 915 2nd Avenue, MS W–406, Seattle, WA 98174 or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: May 3, 2010.

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10738 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Area 7 Taxpayer Advocacy Panel (Including the States of Alaska, California, Hawaii, and Nevada)

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Area 7 Taxpayer Advocacy Panel will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Monday, June 7, 2010 and Tuesday, June 8, 2010.

FOR FURTHER INFORMATION CONTACT: Janice Spinks at 1–888–912–1227 or 206–220–6098.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that a meeting of the Area 7 Taxpayer Advocacy Panel will be held Monday, June 7, 2010, from 8 a.m. to 5 p.m. and Tuesday, June 8, 2010, from 8 a.m. to 5 p.m. Pacific Time in San Diego, CA. The public is invited to make oral comments or submit written statements for consideration. Notification of intent to participate must be made with Janice Spinks. For more information please contact Ms. Spinks at 1–888–912–1227 or 206–220–6098, or write TAP Office, 915 2nd Avenue, MS W–406, Seattle, WA 98174 or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: *May 3, 2010.*

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10737 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Taxpayer Advocacy Panel Earned Income Tax Credit Project Committee

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Taxpayer Advocacy Panel Earned Income Tax Credit Project Committee will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be Wednesday, June 23, 2010.

FOR FURTHER INFORMATION CONTACT: Marianne Ayala at 1–888–912–1227 or 954–423–7978.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Taxpayer Advocacy Panel Earned Income Tax Credit Project Committee will be held Wednesday, June 23, 2010, at 1 p.m. Eastern Time via telephone conference. The public is invited to make oral comments or submit written statements for consideration. Due to limited conference lines, notification of intent to participate must be made with Marianne Ayala. For more information, please contact Ms. Ayala at 1–888–912–1227 or 954–423–7978, or write TAP Office, 1000 South Pine Island Road, Suite 340, Plantation, FL 33324, or contact us at the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: *May 3, 2010.*

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10736 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Taxpayer Advocacy Panel Tax Forms and Publications/MLI Project Committee

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Taxpayer Advocacy Panel Tax Forms and Publications/MLI Project Committee will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Friday, June 25, 2010 and Saturday, June 26, 2010.

FOR FURTHER INFORMATION CONTACT: Marisa Knispel at 1–888–912–1227 or 718–488–3557.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Taxpayer Advocacy Panel Tax Forms and Publications/MLI Project Committee will be held Friday, June 25, 2010, from 8:30 a.m. to 5 p.m. and Saturday, June 26, 2010 from 8:30 a.m. to 12 p.m., Central Time in San Antonio, TX. The public is invited to make oral comments or submit written statements for consideration. Notification of intent to participate must be made with Marisa Knispel. For more information, please contact Ms. Knispel at 1–888–912–1227 or 718–488–3557, or write TAP Office, 10 MetroTech Center, 625 Fulton Street, Brooklyn, NY 11201, or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: *May 3, 2010.*

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10735 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Taxpayer Advocacy Panel Joint Committee

AGENCY: Internal Revenue Service (IRS) Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Taxpayer Advocacy Panel Joint Committee will be conducted. The Taxpayer Advocacy Panel is soliciting public comment, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Tuesday, June 22, 2010.

FOR FURTHER INFORMATION CONTACT: Susan Gilbert at 1–888–912–1227 or (515) 564–6638.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Taxpayer Advocacy Panel Joint Committee will be held Tuesday, June 22, 2010, at 3 p.m. Eastern Time via telephone conference. The public is invited to make oral comments or submit written statements for consideration. Due to limited conference lines, notification of intent to participate must be made with Susan Gilbert. For more information please contact Ms. Gilbert at 1–888–912–1227 or (515) 564–6638 or write: TAP Office, 210 Walnut Street, Stop 5115, Des Moines, IA 50309 or contact us at the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: *May 3, 2010.*

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10734 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of Taxpayer Advocacy Panel Notice Improvement Project Committee

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Taxpayer Advocacy Panel Notice Improvement Project Committee will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Wednesday, June 9, 2010.

FOR FURTHER INFORMATION CONTACT: Audrey Y. Jenkins at 1–888–912–1227 or 718–488–2085.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Taxpayer Advocacy Panel Notice Improvement Project Committee will be held Wednesday, June 9, 2010, at 2 p.m. Eastern Time via telephone conference. The public is invited to make oral comments or submit written statements for consideration. Due to limited conference lines, notification of intent to participate must be made with Audrey Y. Jenkins. For more information, please contact Ms. Jenkins at 1–888–912–1227 or 718–488–2085, or write TAP Office, 10 MetroTech Center, 625 Fulton Street, Brooklyn, NY 11201, or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: *May 3, 2010.*

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10733 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Taxpayer Advocacy Panel Small Business/Self Employed Issue Committee

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Taxpayer Advocacy Panel Small Business/Self Employed Issue Committee will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Monday, June 28, 2010 and Tuesday, June 29, 2010.

FOR FURTHER INFORMATION CONTACT: Janice Spinks at 1–888–912–1227 or 206–220–6098.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Taxpayer Advocacy Panel Small Business/Self Employed Issue Committee will be held Monday, June 28, 2010 from 8 a.m. to 5 p.m. and Tuesday, June 29, 2010 from 8 a.m. to 5 p.m. Central Time in Dallas, TX. The public is invited to make oral comments or submit written statements for consideration. Notification of intent to participate must be made with Janice Spinks. For more information, please contact Ms. Spinks at 1–888–912–1227 or 206–220–6098 or write TAP Office, 915 2nd Avenue, MS W–406, Seattle, WA 98174, or contact us at the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: May 3, 2010.

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10732 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Taxpayer Advocacy Panel Taxpayer Assistance Center Committee

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Taxpayer Advocacy Panel Taxpayer Assistance Center Committee will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Sunday, June 27, 2010, Monday, June 28, 2010 and Tuesday, June 29, 2010.

FOR FURTHER INFORMATION CONTACT: Ellen Smiley at 1–888–912–1227 or 414–231–2360.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Taxpayer Advocacy Panel Taxpayer Assistance Center Committee will be held Sunday, June 27, 2010, from 2 p.m. to 6 p.m., Monday, June 28, 2010 from 8 a.m. to 5 p.m., and Tuesday, June 29, 2010 from 8 a.m. to 12 p.m. Central Time in Milwaukee, WI. The public is invited to make oral comments or submit written statements for consideration. Notification of intent to participate must be made with Ellen Smiley. For more information please contact Ms. Smiley at 1–888–912–1227 or 414–231–2360, or write TAP Office Stop 1006MIL, 211 West Wisconsin Avenue, Milwaukee, WI 53203–2221, or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: May 3, 2010.

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10731 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Taxpayer Advocacy Panel Volunteer Income Tax Assistance Issue Committee

AGENCY: Internal Revenue Service (IRS) Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Taxpayer Advocacy Panel Volunteer Income Tax Issue Committee will be conducted. The Taxpayer Advocacy Panel is soliciting public comment, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Tuesday, June 8, 2010.

FOR FURTHER INFORMATION CONTACT: Donna Powers at 1–888–912–1227 or 954–423–7977.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that a meeting of the Taxpayer Advocacy Panel Volunteer Income Tax Issue Committee will be held Tuesday, June 8, 2010, at 2 p.m. Eastern Time via telephone conference. The public is invited to make oral comments or submit written statements for consideration. Due to limited conference lines, notification of intent to participate must be made with Donna Powers. For more information, please contact Ms. Powers at 1–888–912–1227 or 954–423–7977, or write TAP Office, 1000 South Pine Island Road, Suite 340, Plantation, FL 33324, or contact us at the *Web site: http://www.improveirs.org.*

The agenda will include various IRS Issues.

Dated: May 3, 2010.

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10745 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Area 1 Taxpayer Advocacy Panel (Including the States of New York, Connecticut, Massachusetts, Rhode Island, New Hampshire, Vermont and Maine)

AGENCY: Internal Revenue Service (IRS) Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Area 1 Taxpayer Advocacy Panel will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Friday, June 4, 2010 and Saturday, June 5, 2010.

FOR FURTHER INFORMATION CONTACT: Audrey Y. Jenkins at 1–888–912–1227 or 718–488–2085.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Area 1 Taxpayer Advocacy Panel will be held Friday, June 4, 2010 from 8 a.m. to 4:30 p.m. and Saturday, June 5, 2010 from 8 a.m. to 12 p.m. Eastern Time in Brooklyn, NY. The public is invited to make oral comments or submit written statements for consideration. Notification of intent to participate must be made with Audrey Y. Jenkins. For more information please contact Ms. Jenkins at 1–888–912–1227 or 718–488–2085, or write TAP Office, 10 MetroTech Center, 625 Fulton Street, Brooklyn, NY 11201, or contact us at the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: *May 3, 2010.*

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10744 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Area 2 Taxpayer Advocacy Panel (Including the States of Delaware, North Carolina, South Carolina, New Jersey, Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia)

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Area 2 Taxpayer Advocacy Panel will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Wednesday, June 16, 2010.

FOR FURTHER INFORMATION CONTACT: Marianne Ayala at 1–888–912–1227 or 954–423–7978.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that an open meeting of the Area 2 Taxpayer Advocacy Panel will be held Wednesday, June 16, 2010, at 2:30 p.m. Eastern Time via telephone conference. The public is invited to make oral comments or submit written statements for consideration. Due to limited conference lines, notification of intent to participate must be made with Marianne Ayala. For more information please contact Mrs. Ayala at 1–888–912–1227 or 954–423–7978, or write TAP Office, 1000 South Pine Island Road, Suite 340, Plantation, FL 33324, or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: May 3, 2010.

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10743 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Area 3 Taxpayer Advocacy Panel (Including the States of Florida, Georgia, Alabama, Mississippi, Louisiana, Arkansas, and the Territory of Puerto Rico)

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Area 3 Taxpayer Advocacy Panel will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Monday, June 14, 2010.

FOR FURTHER INFORMATION CONTACT: Donna Powers at 1–888–912–1227 or 954–423–7977.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that a meeting of the Area 3 Taxpayer Advocacy Panel will be held Monday, June 14, 2010, at 2:30 p.m. Eastern Time via telephone conference. The public is invited to make oral comments or submit written statements for consideration. Due to limited conference lines, notification of intent to participate must be made with Donna Powers. For more information, please contact Ms. Powers at 1–888–912–1227 or 954–423–7977, or write TAP Office, 1000 South Pine Island Road, Suite 340, Plantation, FL 33324, or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: May 3, 2010.

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10742 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Open Meeting of the Area 4 Taxpayer Advocacy Panel (Including the States of Illinois, Indiana, Kentucky, Michigan, Ohio, Tennessee, and Wisconsin)

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Notice of meeting.

SUMMARY: An open meeting of the Area 4 Taxpayer Advocacy Panel will be conducted. The Taxpayer Advocacy Panel is soliciting public comments, ideas, and suggestions on improving customer service at the Internal Revenue Service.

DATES: The meeting will be held Tuesday, June 15, 2010.

FOR FURTHER INFORMATION CONTACT: Ellen Smiley at 1–888–912–1227 or 414–231–2360.

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to Section

10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988) that a meeting of the Area 4 Taxpayer Advocacy Panel will be held Tuesday, June 15, 2010, at 1 p.m. Central Time via telephone conference. The public is invited to make oral comments or submit written statements for consideration. Due to limited conference lines, notification of intent to participate must be made with Ellen Smiley. For more information please contact Ms. Smiley at 1–888–912–1227 or 414–231–2360, or write TAP Office Stop 1006MIL, 211 West Wisconsin Avenue, Milwaukee, WI 53203–2221, or post comments to the Web site: *http://www.improveirs.org.*

The agenda will include various IRS issues.

Dated: May 3, 2010.

Shawn F. Collins,

Director, Taxpayer Advocacy Panel.

[FR Doc. 2010–10741 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Tax Counseling for the Elderly (TCE) Program Availability of Application Packages; Correction

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Correction to a notice.

SUMMARY: This document contains a correction to a notice of the Tax Counseling for the Elderly (TCE) Program Availability of Application Packages, which was published in the **Federal Register** on Wednesday, April 28, 2010 (75 FR 22437). This notice provides notice of the availability of application packages for the 2011 Tax Counseling for the Elderly (TCE) Program.

FOR FURTHER INFORMATION CONTACT: The Grant Program Office at (404) 338–7894 (not a toll free number) or by e-mail at *tce.grant.office@irs.gov.*

SUPPLEMENTARY INFORMATION:

Background

Authority for the 2011 Tax Counseling for the Elderly (TCE) Program for tax return preparation is contained in Section 163 of the Revenue Act of 1978, Public Law 95–600, (92 Stat. 12810), November 6, 1978. Regulations were published in the **Federal Register** at 44 FR 72113 on December 13, 1979. Section 163 gives the IRS authority to enter into cooperative agreements with private or public non-profit agencies or organizations to establish a network of trained volunteers to provide free tax information and return preparation assistance to elderly individuals. Elderly individuals are defined as individuals age 60 and over at the close of their taxable year. Because applications are being solicited before the FY 2011 budget has been approved, cooperative agreements will be entered into subject to appropriation of funds.

Need for Correction

As published, the notice of the Tax Counseling for the Elderly (TCE) Program contains an error which may prove to be misleading and is in need of clarification.

Correction of Publication

Accordingly, the publication of the Tax Counseling for the Elderly (TCE) Program, which was the subject of FR Doc. 2010–9772, is corrected as follows:

On page 22437, column 3, under the caption **DATES**: The language "Application packages are available from the IRS at this time. The deadline for submitting an application to the IRS for the Tax Counseling for the Elderly (TCE) Program is July 9, 2010." is corrected to read "Application packages are available from the IRS beginning June 1, 2010. The deadline for submitting an application to the IRS for the Tax Counseling for the Elderly (TCE) Program is July 9, 2010." .

LaNita Van Dyke,

Chief, Publications and Regulations Branch, Legal Processing Division, Associate Chief Counsel, (Procedure and Administration).

[FR Doc. 2010–10975 Filed 5–6–10; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF VETERANS AFFAIRS

[OMB Control No. 2900—New (DES)]

Agency Information Collection (Survey of Satisfaction With the Disability Evaluation System (DES)) Activities Under OMB Review

AGENCY: Veterans Benefits Administration, Department of Veterans Affairs.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–3521), this notice announces that the Veterans Benefits Administration (VBA), Department of Veterans Affairs, will submit the collection of information abstracted below to the Office of Management and Budget (OMB) for review and comment. The PRA submission describes the nature of the information collection and its expected cost and burden and it includes the actual data collection instrument.

DATES: Comments must be submitted on or before June 7, 2010.

ADDRESSES: Submit written comments on the collection of information through *http://www.Regulations.gov;* or to VA's OMB Desk Officer, OMB Human Resources and Housing Branch, New Executive Office Building, Room 10235, Washington, DC 20503 (202) 395–7316. Please refer to "OMB Control No. 2900–New (DES)" in any correspondence.

FOR FURTHER INFORMATION CONTACT: Denise McLamb, Enterprise Records Service (005R1B), Department of Veterans Affairs, 810 Vermont Avenue, NW., Washington, DC 20420, (202) 461–7485, FAX (202) 273–0443 or e-mail: *denise.mclamb@va.gov.* Please refer to "OMB Control No. 2900–New (DES)."

SUPPLEMENTARY INFORMATION:

Title: Survey of Satisfaction with the Disability Evaluation System (DES).

OMB Control Number: 2900–New (DES).

Type of Review: New collection.

Abstract: Data obtained through the DES survey will be used to evaluate and, if necessary, revise the way the DES Pilot is conducted in an effort to raise customer service standards.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The **Federal Register** Notice with a 60-day comment period soliciting comments on this collection of information was published on March 1, 2010, at page 9279.

Affected Public: Individuals or households.

Estimated Annual Burden: 37 hours.

Estimated Average Burden per Respondent: 15 minutes.

Frequency of Response: One time.

Estimated Number of Respondents: 149.

Dated: May 4, 2010.

By direction of the Secretary.

Denise McLamb,

Program Analyst, Enterprise Records Service.

[FR Doc. 2010–10795 Filed 5–6–10; 8:45 am]

BILLING CODE 8320–01–P

DEPARTMENT OF VETERANS AFFAIRS

[OMB Control No. 2900–0219]

Agency Information Collection (Application for CHAMPVA Benefits) Activities Under OMB Review

AGENCY: Veterans Health Administration, Department of Veterans Affairs.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–21), this notice announces that the Veterans Health Administration (VHA), Department of Veterans Affairs, has submitted the collection of information abstracted below to the Office of Management and Budget (OMB) for review and comment. The PRA submission describes the nature of the information collection and its expected cost and burden and includes the actual data collection instrument.

DATE: Comments must be submitted on or before June 7, 2010.

ADDRESSES: Submit written comments on the collection of information through *www.Regulations.gov;* or to VA's OMB Desk Officer, OMB Human Resources and Housing Branch, New Executive Office Building, Room 10235, Washington, DC 20503, (202) 395–7316. Please refer to "OMB Control No. 2900–0219" in any correspondence.

FOR FURTHER INFORMATION CONTACT: Denise McLamb, Enterprise Records Service (005R1B), Department of Veterans Affairs, 810 Vermont Avenue, NW., Washington, DC 20420, (202) 461–7485, fax (202) 273–0443 or e-mail *denise.mclamb@va.gov.* Please refer to "OMB Control No. 2900–0219."

SUPPLEMENTARY INFORMATION:

Titles:

a. Application for CHAMPVA Benefits, VA Form 10–10d.

b. CHAMPVA Claim Form, VA Form 10–7959a.

c. CHAMPVA Other Health Insurance (OHI) Certification, VA Form 10–7959c.

d. CHAMPVA Potential Liability Claim, VA Form 10–7959d.

e. Claim for Miscellaneous Expenses, VA Form 10–7959e.

OMB Control Number: 2900–0219.

Type of Review: Revision of a currently approved collection.

Abstracts:

a. VA Form 10–10d is used to determine eligibility of persons applying for healthcare benefits under the CHAMPVA program.

b. VA Form 10–7959a is used to accurately adjudicate and process beneficiaries claims for payment/reimbursement of related healthcare expenses.

c. VA Form 10–7959c is used to systematically obtain other health insurance information and to correctly coordinate benefits among all liable parties.

d. VA Form 10–7959d is used to gather additional information relative to the injury or illness as well as third party claim information.

e. Beneficiaries complete VA Form 10–7959e to claim payment/reimbursement of expenses related to spina bifida and certain covered birth defects.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The **Federal Register** Notice with a 60-day comment period soliciting comments on this collection of information was published on March 1, 2010, at pages 9276–9277.

Affected Public: Individuals or households, business or other for-profit, and not-for-profit institutions.

Estimated Annual Burden:

a. VA Form 10–10d—4,411 hours.

b. VA Form 10–7959a—37,336 hours.

c. VA Form 10–7959c—13,456 hours.

d. VA Form 10–7959d—467 hours.

e. VA Form 10–7959e—725 hours.

Estimated Average Burden Per Respondent:

a. VA Form 10–10d—10 minutes.

b. VA Form 10–7959a—10 minutes.

c. VA Form 10–7959c—10 minutes.

d. VA Form 10–7959d—7 minutes.

e. VA Form 10–7959e—10 minutes.

Frequency of Response: On occasion.

Estimated Number of Respondents:

a. VA Form 10–10d—26,468.

b. VA Form 10–7959a—224,018.

c. VA Form 10–7959c—80,733.

d. VA Form 10–7959d—4,000.

e. VA Form 10–7959e—4,400.

Dated: May 4, 2010.

By direction of the Secretary.

Denise McLamb,

Program Analyst, Enterprise Records Service.

[FR Doc. 2010–10796 Filed 5–6–10; 8:45 am]

BILLING CODE 8320–01–P

DEPARTMENT OF VETERANS AFFAIRS

[OMB Control No. 2900–0712]

Agency Information Collection (Nation-wide Customer Satisfaction Surveys) Activities Under OMB Review

AGENCY: Veterans Health Administration, Department of Veterans Affairs.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–3521), this notice announces that the Veterans Health Administration, Department of Veterans Affairs, will submit the collection of information abstracted below to the Office of Management and Budget (OMB) for review and comment. The PRA submission describes the nature of the information collection and its expected cost and burden and includes the actual data collection instrument.

DATES: Comments must be submitted on or before June 7, 2010.

ADDRESSES: Submit written comments on the collection of information through *www.Regulations.gov* or to VA's OMB Desk Officer, OMB Human Resources and Housing Branch, New Executive Office Building, Room 10235, Washington, DC 20503 (202) 395–7316. Please refer to "OMB Control No. 2900–0712" in any correspondence.

FOR FURTHER INFORMATION CONTACT: Denise McLamb, Enterprise Records Service (005R1B), Department of Veterans Affairs, 810 Vermont Avenue, NW., Washington, DC 20420, (202) 461–7485, fax (202) 273–0443 or e-mail *denise.mclamb@va.gov.* Please refer to "OMB Control No. 2900–0712."

SUPPLEMENTARY INFORMATION:

Title: Nation-wide Customer Satisfaction Surveys, VA Forms 1465–2 through 1465–4.

OMB Control Number: 2900–0712.

Type of Review: Revision of a currently approved collection.

Abstract: The Survey of Health Experience of Patients (SHEP) Survey is used to obtain information from VA patients that will be used to identify problems or compliant and to improve the quality of health care services delivered to veterans. Data will be use to measure improvement toward the goal of matching or exceeding non-VA external benchmark performance.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The **Federal Register** Notice with a 60-day comment period soliciting comments on this collection of information was published on March 1, 2010, at page 9277.

Affected Public: Individuals or households.

Estimated Annual Burden:

a. Inpatient Short Form, VA Form 10–1465–2—18,750 hours.

b. Ambulatory Care Long Form, VA Form 10–1465–3—9,802 hours.

c. Ambulatory Care Short Form, VA Form 10–1465–4—67,573 hours.

Estimated Average Burden per Respondent:

a. Inpatient Short Form, VA Form 10–1465–2—15 minutes.

b. Ambulatory Care Long Form, VA Form 10–1465–3—25 minutes.

c. Ambulatory Care Short Form, VA Form 10–1465–4—20 minutes.

Frequency of Response: On occasion.

Estimated Number of Respondents:

a. Inpatient Short Form, VA Form 10–1465–2—75,000.

b. Ambulatory Care Long Form, VA Form 10–1465–3—23,524.

c. Ambulatory Care Short Form, VA Form 10–1465–4—202,720.

Dated: May 4, 2010.

By direction of the Secretary.

Denise McLamb,

Program Analyst, Enterprise Records Service.

[FR Doc. 2010–10797 Filed 5–6–10; 8:45 am]

BILLING CODE 8320–01–P

DEPARTMENT OF VETERANS AFFAIRS

[OMB Control No. 2900—New (VA Form 0924)]

Agency Information Collection (VA National Rehabilitation Special Events, Event Registration Applications) Activities Under OMB Review

AGENCY: Office of National Programs and Special Events, Department of Veterans Affairs.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–21), this notice announces that the Office of National Programs and Special Events, Department of Veterans Affairs, will submit the collection of information abstracted below to the Office of Management and Budget (OMB) for review and comment. The PRA submission describes the nature of the information collection and its expected cost and burden; it includes the actual data collection instrument.

DATES: Comments must be submitted on or before *June 7, 2010.*

ADDRESSES: Submit written comments on the collection of information through *www.Regulations.gov* or to VA's OMB Desk Officer, OMB Human Resources and Housing Branch, New Executive Office Building, Room 10235, Washington, DC 20503, (202) 395–7316. Please refer to "OMB Control No. 2900–New (VA Form 0924)" in any correspondence.

FOR FURTHER INFORMATION CONTACT: Denise McLamb, Enterprise Records Service (005R1B), Department of Veterans Affairs, 810 Vermont Avenue, NW., Washington, DC 20420, (202) 461–7485, fax (202) 273–0443 or e-mail *denise.mclamb@va.gov.* Please refer to "OMB Control No. 2900–New (VA Form 0924)".

SUPPLEMENTARY INFORMATION:

Titles:

a. National Disabled Veterans Winter Sports Clinic Application, VA Form 0924a series.

b. National Veterans Wheelchair Games Application, VA Form 0925a series.

c. National Veterans Golden Age Games Application, VA Form 0926a series.

d. National Veterans TEE Tournament Application, VA Form 0927a series.

e. National Veterans Summer Sports Clinic Application, VA Form 0928a series.

f. National Veterans Creative Arts Festival Application, VA Form 0929a series.

Type of Review: Existing collection in use without an OMB control number.

Abstract: Veterans who are enrolled for VA health care may apply to participate in therapeutic rehabilitation programs such as the National Veterans Wheelchair Games, National Veterans Golden Age Games, National Veterans Creative Arts Festival, National Veterans TEE Tournament, National Disabled Veterans Winter Sports Clinic and the National Veterans Summer Sports Clinic. The data collected will be used to plan, distribute and utilize resources and to allocate clinical and administrative support to patient treatment services.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The **Federal Register** Notice with a 60-day comment period soliciting comments on this collection of information was published on March 1, 2010, at pages 9277–9278.

Affected Public: Individuals or households.

Estimated Annual Burden:

a. VA Form 0924a series—233 hours.

b. VA Form 0925a series—238 hours.

c. VA Form 0926a series—533 hours.

d. VA Form 0927a series—133 hours.

e. VA Form 0928a series—53 hours.

f. VA Form 0929a series—67 hours.

Estimated Average Burden per Respondent: 20 minutes.

Frequency of Response: On occasion.

Estimated Number of Respondents:

a. VA Form 0924a series—700.

b. VA Form 0925a series—715.

c. VA Form 0926a series—1,600.

d. VA Form 0927a series—400.

e. VA Form 0928a series—160.

f. VA Form 0929a series—200.

Dated: May 4, 2010.

By direction of the Secretary.

Denise McLamb,

Enterprise Records Service.

[FR Doc. 2010–10798 Filed 5–6–10; 8:45 am]

BILLING CODE 8320–01–P

DEPARTMENT OF VETERANS AFFAIRS

[OMB Control No. 2900–0600]

Agency Information Collection (Regulation for Reconsideration of Denied Claims) Activity Under OMB Review

AGENCY: Veterans Health Administration, Department of Veterans Affairs.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–3521), this notice announces that the Veterans Health Administration, Department of Veterans Affairs, has submitted the collection of information abstracted below to the Office of Management and Budget (OMB) for review and comment. The PRA submission describes the nature of the information collection and its expected cost and burden and includes the actual data collection instrument.

DATES: Comments must be submitted on or before June 7, 2010.

ADDRESSES: Submit written comments on the collection of information through *http://www.Regulations.gov* or to VA's OMB Desk Officer, OMB Human Resources and Housing Branch, New Executive Office Building, Room 10235, Washington, DC 20503, (202) 395–7316. Please refer to "OMB Control No. 2900–0600" in any correspondence.

FOR FURTHER INFORMATION CONTACT: Denise McLamb, Enterprise Records Service (005R1B), Department of Veterans Affairs, 810 Vermont Avenue, NW., Washington, DC 20420, (202) 461–7485, fax (202) 273–0443 or e-mail *denise.mclamb@va.gov.* Please refer to "OMB Control No. 2900–0600."

SUPPLEMENTARY INFORMATION:

Title: Regulation for Reconsideration of Denied Claims.

OMB Control Number: 2900–0600.

Type of Review: Extension of a currently approved collection.

Abstract: Veterans who disagree with the initial decision denying their healthcare benefits in whole or in part may obtain reconsideration by

submitting a request in writing within one year of the date of the initial decision. The request must state why the decision is in error and include any new and relevant information not previously considered. This process reduces both formal appeals and allows decision making to be more responsive to veterans using the VA healthcare system.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The **Federal Register** Notice with a 60-day comment period soliciting comments on this collection of information was published on March 1, 2010, at pages 9278–9279.

Affected Public: Individuals or households.

Estimated Total Annual Burden: 50,826 hours.

Estimated Average Burden per Respondent: 30 minutes.

Frequency of Response: On occasion.

Estimated Number of Respondents: 101,652.

Dated: May 4, 2010.

By direction of the Secretary

Denise McLamb,

Program Analyst, Enterprise Records Service.

[FR Doc. 2010–10799 Filed 5–6–10; 8:45 am]

BILLING CODE 8320–01–P

Federal Register

Friday,
May 7, 2010

Part II

Environmental Protection Agency

Department of Transportation

National Highway Traffic Safety Administration

40 CFR Parts 85, 86, and 600; 49 CFR Parts 531, 533, 536, et al.

Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 85, 86, and 600

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Parts 531, 533, 536, 537 and 538

[EPA–HQ–OAR–2009–0472; FRL–9134–6; NHTSA–2009–0059]

RIN 2060–AP58; RIN 2127–AK50

Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule

AGENCY: Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA).

ACTION: Final rule.

SUMMARY: EPA and NHTSA are issuing this joint Final Rule to establish a National Program consisting of new standards for light-duty vehicles that will reduce greenhouse gas emissions and improve fuel economy. This joint Final Rule is consistent with the National Fuel Efficiency Policy announced by President Obama on May 19, 2009, responding to the country's critical need to address global climate change and to reduce oil consumption. EPA is finalizing greenhouse gas emissions standards under the Clean Air Act, and NHTSA is finalizing Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act, as amended. These standards apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016, and represent a harmonized and consistent National Program. Under the National Program, automobile manufacturers will be able to build a single light-duty national fleet that satisfies all requirements under both programs while ensuring that consumers still have a full range of vehicle choices. NHTSA's final rule also constitutes the agency's Record of Decision for purposes of its National Environmental Policy Act (NEPA) analysis.

DATES: This final rule is effective on July 6, 2010, *sixty days after date of publication in the* **Federal Register.** The incorporation by reference of certain publications listed in this regulation is approved by the Director of the Federal Register as of July 6, 2010.

ADDRESSES: EPA and NHTSA have established dockets for this action under Docket ID No. EPA–HQ–OAR–2009–0472 and NHTSA–2009–0059, respectively. All documents in the docket are listed on the *http://www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *http://www.regulations.gov* or in hard copy at the following locations: *EPA:* EPA Docket Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744. *NHTSA:* Docket Management Facility, M–30, U.S. Department of Transportation, West Building, Ground Floor, Rm. W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590. The Docket Management Facility is open between 9 a.m. and 5 p.m. Eastern Time, Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT:

EPA: Tad Wysor, Office of Transportation and Air Quality, Assessment and Standards Division, Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor MI 48105; telephone number: 734–214–4332; fax number: 734–214–4816; e-mail address: *wysor.tad@epa.gov,* or Assessment and Standards Division Hotline; telephone number (734) 214–4636; e-mail address *asdinfo@epa.gov. NHTSA:* Rebecca Yoon, Office of Chief Counsel, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590. Telephone: (202) 366–2992.

SUPPLEMENTARY INFORMATION:

Does this action apply to me?

This action affects companies that manufacture or sell new light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles, as defined under EPA's CAA regulations,[1] and passenger automobiles (passenger cars) and non-passenger automobiles (light trucks) as defined under NHTSA's CAFE regulations.[2] Regulated categories and entities include:

Category	NAICS codes [A]	Examples of potentially regulated entities
Industry	336111, 336112	Motor vehicle manufacturers.
Industry	811112, 811198, 541514	Commercial Importers of Vehicles and Vehicle Components.

[A] North American Industry Classification System (NAICS).

This list is not intended to be exhaustive, but rather provides a guide regarding entities likely to be regulated by this action. To determine whether particular activities may be regulated by this action, you should carefully examine the regulations. You may direct questions regarding the applicability of this action to the person listed in **FOR FURTHER INFORMATION CONTACT.**

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[1] "Light-duty vehicle," "light-duty truck," and "medium-duty passenger vehicle" are defined in 40 CFR 86.1803–01. Generally, the term "light-duty vehicle" means a passenger car, the term "light-duty truck" means a pick-up truck, sport-utility vehicle, or minivan of up to 8,500 lbs gross vehicle weight rating, and "medium-duty passenger vehicle" means a sport-utility vehicle or passenger van from 8,500 to 10,000 lbs gross vehicle weight rating. Medium-duty passenger vehicles do not include pick-up trucks.

[2] "Passenger car" and "light truck" are defined in 49 CFR part 523.

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I. Overview of Joint EPA/NHTSA National Program

A. Introduction

The National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) are each announcing final rules whose benefits will address the urgent and closely intertwined challenges of energy independence and security and global warming. These rules will implement a strong and coordinated Federal greenhouse gas (GHG) and fuel economy program for passenger cars, light-duty-trucks, and medium-duty passenger vehicles (hereafter light-duty vehicles), referred to as the National Program. The rules will achieve substantial reductions of GHG emissions and improvements in fuel economy from the light-duty vehicle part of the transportation sector, based on technology that is already being commercially applied in most cases and that can be incorporated at a reasonable cost. NHTSA's final rule also constitutes the agency's Record of Decision for purposes of its NEPA analysis.

This joint rulemaking is consistent with the President's announcement on May 19, 2009 of a National Fuel Efficiency Policy of establishing consistent, harmonized, and streamlined requirements that would reduce GHG emissions and improve fuel economy for all new cars and light-duty trucks sold in the United States.[3] The National Program will deliver additional environmental and energy benefits, cost savings, and administrative efficiencies on a nationwide basis that would likely not be available under a less coordinated approach. The National Program also represents regulatory convergence by making it possible for the standards of two different Federal agencies and the standards of California and other states to act in a unified fashion in providing these benefits. The National Program will allow automakers to produce and sell a single fleet nationally, mitigating the additional costs that manufacturers would otherwise face in having to comply with multiple sets of Federal and State standards. This joint notice is also consistent with the Notice of Upcoming Joint Rulemaking issued by DOT and EPA on May 19, 2009[4] and responds to the President's January 26, 2009 memorandum on CAFE standards for model years 2011 and beyond,[5] the details of which can be found in Section IV of this joint notice.

Climate change is widely viewed as a significant long-term threat to the global environment. As summarized in the Technical Support Document for EPA's Endangerment and Cause or Contribute Findings under Section 202(a) of the Clear Air Act, anthropogenic emissions of GHGs are very likely (90 to 99 percent probability) the cause of most of the observed global warming over the last 50 years.[6] The primary GHGs of concern are carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Mobile sources emitted 31 percent of all U.S. GHGs in 2007 (transportation sources, which do not include certain off-highway sources, account for 28 percent) and have been the fastest-growing source of U.S. GHGs since 1990.[7] Mobile sources addressed in the recent endangerment and contribution findings under CAA section 202(a)—light-duty vehicles, heavy-duty trucks, buses, and motorcycles—accounted for 23 percent of all U.S. GHG in 2007.[8] Light-duty vehicles emit CO_2, methane, nitrous oxide, and hydrofluorocarbons and are responsible for nearly 60 percent of all mobile source GHGs and over 70 percent of Section 202(a) mobile source GHGs. For light-duty vehicles in 2007, CO_2 emissions represent about 94 percent of all greenhouse emissions (including HFCs), and the CO_2 emissions measured over the EPA tests used for fuel economy compliance represent about 90 percent of total light-duty vehicle GHG emissions.[9] [10]

Improving energy security by reducing our dependence on foreign oil has been a national objective since the first oil price shocks in the 1970s. Net petroleum imports now account for approximately 60 percent of U.S.

[3] President Obama Announces National Fuel Efficiency Policy, The White House, May 19, 2009. Available at: *http://www.whitehouse.gov/the_press_office/President-Obama-Announces-National-Fuel-Efficiency-Policy/*. Remarks by the President on National Fuel Efficiency Standards, The White House, May 19, 2009. Available at: *http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-national-fuel-efficiency-standards/*.

[4] 74 FR 24007 (May 22, 2009).

[5] Available at: *http://www.whitehouse.gov/the_press_office/Presidential_Memorandum_Fuel_Economy/*.

[6] "Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act" Docket: EPA–HQ–OAR–2009–0472–11292, *http://epa.gov/climatechange/endangerment.html*.

[7] U.S. Environmental Protection Agency. 2009. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2007. EPA 430–R–09–004. Available at *http://epa.gov/climatechange/emissions/downloads09/GHG2007entire_report-508.pdf*.

[8] U.S. EPA. 2009 Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Washington, DC. pp. 180–194. Available at *http://epa.gov/climatechange/endangerment/downloads/Endangerment%20TSD.pdf*.

[9] U.S. Environmental Protection Agency. 2009. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2007. EPA 430–R–09–004. Available at *http://epa.gov/climatechange/emissions/downloads09/GHG2007entire_report-508.pdf*.

[10] U.S. Environmental Protection Agency. RIA, Chapter 2.

petroleum consumption. World crude oil production is highly concentrated, exacerbating the risks of supply disruptions and price shocks. Tight global oil markets led to prices over $100 per barrel in 2008, with gasoline reaching as high as $4 per gallon in many parts of the U.S., causing financial hardship for many families. The export of U.S. assets for oil imports continues to be an important component of the historically unprecedented U.S. trade deficits. Transportation accounts for about two-thirds of U.S. petroleum consumption. Light-duty vehicles account for about 60 percent of transportation oil use, which means that they alone account for about 40 percent of all U.S. oil consumption.

1. Building Blocks of the National Program

The National Program is both needed and possible because the relationship between improving fuel economy and reducing CO_2 tailpipe emissions is a very direct and close one. The amount of those CO_2 emissions is essentially constant per gallon combusted of a given type of fuel. Thus, the more fuel efficient a vehicle is, the less fuel it burns to travel a given distance. The less fuel it burns, the less CO_2 it emits in traveling that distance.[11] While there are emission control technologies that reduce the pollutants (*e.g.,* carbon monoxide) produced by imperfect combustion of fuel by capturing or converting them to other compounds, there is no such technology for CO_2. Further, while some of those pollutants can also be reduced by achieving a more complete combustion of fuel, doing so only increases the tailpipe emissions of CO_2. Thus, there is a single pool of technologies for addressing these twin problems, *i.e.,* those that reduce fuel consumption and thereby reduce CO_2 emissions as well.

a. DOT's CAFE Program

In 1975, Congress enacted the Energy Policy and Conservation Act (EPCA), mandating that NHTSA establish and implement a regulatory program for motor vehicle fuel economy to meet the various facets of the need to conserve energy, including ones having energy independence and security, environmental and foreign policy implications. Fuel economy gains since 1975, due both to the standards and market factors, have resulted in saving billions of barrels of oil and avoiding billions of metric tons of CO_2 emissions. In December 2007, Congress enacted the Energy Independence and Securities Act (EISA), amending EPCA to require substantial, continuing increases in fuel economy standards.

The CAFE standards address most, but not all, of the real world CO_2 emissions because a provision in EPCA as originally enacted in 1975 requires the use of the 1975 passenger car test procedures under which vehicle air conditioners are not turned on during fuel economy testing.[12] Fuel economy is determined by measuring the amount of CO_2 and other carbon compounds emitted from the tailpipe, not by attempting to measure directly the amount of fuel consumed during a vehicle test, a difficult task to accomplish with precision. The carbon content of the test fuel [13] is then used to calculate the amount of fuel that had to be consumed per mile in order to produce that amount of CO_2. Finally, that fuel consumption figure is converted into a miles-per-gallon figure. CAFE standards also do not address the 5–8 percent of GHG emissions that are not CO_2, *i.e.,* nitrous oxide (N_2O), and methane (CH_4) as well as emissions of CO_2 and hydrofluorocarbons (HFCs) related to operation of the air conditioning system.

b. EPA's GHG Standards for Light-duty Vehicles

Under the Clean Air Act EPA is responsible for addressing air pollutants from motor vehicles. On April 2, 2007, the U.S. Supreme Court issued its opinion in *Massachusetts* v. *EPA,*[14] a case involving EPA's a 2003 denial of a petition for rulemaking to regulate GHG emissions from motor vehicles under section 202(a) of the Clean Air Act (CAA).[15] The Court held that GHGs fit within the definition of air pollutant in the Clean Air Act and further held that the Administrator must determine whether or not emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. The Court further ruled that, in making these decisions, the EPA Administrator is required to follow the language of section 202(a) of the CAA. The Court rejected the argument that EPA cannot regulate CO_2 from motor vehicles because to do so would *de facto* tighten fuel economy standards, authority over which has been assigned by Congress to DOT. The Court stated that "[b]ut that DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities. EPA has been charged with protecting the public's 'health' and 'welfare', a statutory obligation wholly independent of DOT's mandate to promote energy efficiency." The Court concluded that "[t]he two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency." [16] The case was remanded back to the Agency for reconsideration in light of the Court's decision.[17]

On December 15, 2009, EPA published two findings (74 FR 66496): That emissions of GHGs from new motor vehicles and motor vehicle engines contribute to air pollution, and that the air pollution may reasonably be anticipated to endanger public health and welfare.

c. California Air Resources Board Greenhouse Gas Program

In 2004, the California Air Resources Board approved standards for new light-duty vehicles, which regulate the emission of not only CO_2, but also other GHGs. Since then, thirteen states and the District of Columbia, comprising approximately 40 percent of the light-duty vehicle market, have adopted California's standards. These standards apply to model years 2009 through 2016 and require CO_2 emissions for passenger cars and the smallest light trucks of 323 g/mi in 2009 and 205 g/mi in 2016, and for the remaining light trucks of 439 g/mi in 2009 and 332 g/mi in 2016. On June 30, 2009, EPA granted California's request for a waiver of preemption under the CAA.[18] The granting of the waiver permits California and the other states to proceed with implementing the California emission standards.

In addition, to promote the National Program, in May 2009, California announced its commitment to take several actions in support of the National Program, including revising its

[11] Panel on Policy Implications of Greenhouse Warming, National Academy of Sciences, National Academy of Engineering, Institute of Medicine, "Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base," National Academies Press, 1992. p. 287.

[12] Although EPCA does not require the use of 1975 test procedures for light trucks, those procedures are used for light truck CAFE standard testing purposes.

[13] This is the method that EPA uses to determine compliance with NHTSA's CAFE standards.

[14] 549 U.S. 497 (2007).

[15] 68 FR 52922 (Sept. 8, 2003).

[16] 549 U.S. at 531–32.

[17] For further information on *Massachusetts* v. *EPA* see the July 30, 2008 Advance Notice of Proposed Rulemaking, "Regulating Greenhouse Gas Emissions under the Clean Air Act", 73 FR 44354 at 44397. There is a comprehensive discussion of the litigation's history, the Supreme Court's findings, and subsequent actions undertaken by the Bush Administration and the EPA from 2007–2008 in response to the Supreme Court remand. Also see 74 FR 18886, at 1888–90 (April 24, 2009).

[18] 74 FR 32744 (July 8, 2009).

program for MYs 2009–2011 to facilitate compliance by the automakers, and revising its program for MYs 2012–2016 such that compliance with the Federal GHG standards will be deemed to be compliance with California's GHG standards. This will allow the single national fleet produced by automakers to meet the two Federal requirements and to meet California requirements as well. California is proceeding with a rulemaking intended to revise its 2004 regulations to meet its commitments. Several automakers and their trade associations also announced their commitment to take several actions in support of the National Program, including not contesting the final GHG and CAFE standards for MYs 2012–2016, not contesting any grant of a waiver of preemption under the CAA for California's GHG standards for certain model years, and to stay and then dismiss all pending litigation challenging California's regulation of GHG emissions, including litigation concerning preemption under EPCA of California's and other states' GHG standards.

2. Public Participation

The agencies proposed their respective rules on September 28, 2009 (74 FR 49454), and received a large number of comments representing many perspectives on the proposed rule. The agencies received oral testimony at three public hearings in different parts of the country, and received written comments from more than 130 organizations, including auto manufacturers and suppliers, States, environmental and other non-governmental organizations (NGOs), and over 129,000 comments from private citizens.

The vast majority of commenters supported the central tenets of the proposed CAFE and GHG programs. That is, there was broad support from most organizations for a National Program that achieves a level of 250 gram/mile fleet average CO_2, which would be 35.5 miles per gallon if the automakers were to meet this CO_2 level solely through fuel economy improvements. The standards will be phased in over model years 2012 through 2016 which will allow manufacturers to build a common fleet of vehicles for the domestic market. In general, commenters from the automobile industry supported the proposed standards as well as the credit opportunities and other compliance provisions providing flexibility, while also making some recommendations for changes. Environmental and public interest non-governmental organizations (NGOs), as well as most States that commented, were also generally supportive of the National Program standards. Many of these organizations also expressed concern about the possible impact on program benefits, depending on how the credit provisions and flexibilities are designed. The agencies also received specific comments on many aspects of the proposal.

Throughout this notice, the agencies discuss many of the key issues arising from the public comments and the agencies' responses. In addition, the agencies have addressed all of the public comments in the Response to Comments document associated with this final rule.

B. Summary of the Joint Final Rule and Differences From the Proposal

In this joint rulemaking, EPA is establishing GHG emissions standards under the Clean Air Act (CAA), and NHTSA is establishing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Action of 1975 (EPCA), as amended by the Energy Independence and Security Act of 2007 (EISA). The intention of this joint rulemaking is to set forth a carefully coordinated and harmonized approach to implementing these two statutes, in accordance with all substantive and procedural requirements imposed by law.

NHTSA and EPA have coordinated closely and worked jointly in developing their respective final rules. This is reflected in many aspects of this joint rule. For example, the agencies have developed a comprehensive Joint Technical Support Document (TSD) that provides a solid technical underpinning for each agency's modeling and analysis used to support their standards. Also, to the extent allowed by law, the agencies have harmonized many elements of program design, such as the form of the standard (the footprint-based attribute curves), and the definitions used for cars and trucks. They have developed the same or similar compliance flexibilities, to the extent allowed and appropriate under their respective statutes, such as averaging, banking, and trading of credits, and have harmonized the compliance testing and test protocols used for purposes of the fleet average standards each agency is finalizing. Finally, under their respective statutes, each agency is called upon to exercise its judgment and determine standards that are an appropriate balance of various relevant statutory factors. Given the common technical issues before each agency, the similarity of the factors each agency is to consider and balance, and the authority of each agency to take into consideration the standards of the other agency, both EPA and NHTSA are establishing standards that result in a harmonized National Program.

This joint final rule covers passenger cars, light-duty trucks, and medium-duty passenger vehicles built in model years 2012 through 2016. These vehicle categories are responsible for almost 60 percent of all U.S. transportation-related GHG emissions. EPA and NHTSA expect that automobile manufacturers will meet these standards by utilizing technologies that will reduce vehicle GHG emissions and improve fuel economy. Although many of these technologies are available today, the emissions reductions and fuel economy improvements finalized in this notice will involve more widespread use of these technologies across the light-duty vehicle fleet. These include improvements to engines, transmissions, and tires, increased use of start-stop technology, improvements in air conditioning systems, increased use of hybrid and other advanced technologies, and the initial commercialization of electric vehicles and plug-in hybrids. NHTSA's and EPA's assessments of likely vehicle technologies that manufacturers will employ to meet the standards are discussed in detail below and in the Joint TSD.

The National Program is estimated to result in approximately 960 million metric tons of total carbon dioxide equivalent emissions reductions and approximately 1.8 billion barrels of oil savings over the lifetime of vehicles sold in model years (MYs) 2012 through 2016. In total, the combined EPA and NHTSA 2012–2016 standards will reduce GHG emissions from the U.S. light-duty fleet by approximately 21 percent by 2030 over the level that would occur in the absence of the National Program. These actions also will provide important energy security benefits, as light-duty vehicles are about 95 percent dependent on oil-based fuels. The agencies project that the total benefits of the National Program will be more than $240 billion at a 3% discount rate, or more than $190 billion at a 7% discount rate. In the discussion that follows in Sections III and IV, each agency explains the related benefits for their individual standards.

Together, EPA and NHTSA estimate that the average cost increase for a model year 2016 vehicle due to the National Program will be less than $1,000. The average U.S. consumer who purchases a vehicle outright is estimated to save enough in lower fuel costs over the first three years to offset

these higher vehicle costs. However, most U.S. consumers purchase a new vehicle using credit rather than paying cash and the typical car loan today is a five year, 60 month loan. These consumers will see immediate savings due to their vehicle's lower fuel consumption in the form of a net reduction in annual costs of $130–$180 throughout the duration of the loan (that is, the fuel savings will outweigh the increase in loan payments by $130–$180 per year). Whether a consumer takes out a loan or purchases a new vehicle outright, over the lifetime of a model year 2016 vehicle, the consumer's net savings could be more than $3,000. The average 2016 MY vehicle will emit 16 fewer metric tons of CO_2-equivalent emissions (that is, CO_2 emissions plus HFC air conditioning leakage emissions) during its lifetime. Assumptions that underlie these conclusions are discussed in greater detail in the agencies' respective regulatory impact analyses and in Section III.H.5 and Section IV.

This joint rule also results in important regulatory convergence and certainty to automobile companies. Absent this rule, there would be three separate Federal and State regimes independently regulating light-duty vehicles to reduce fuel consumption and GHG emissions: NHTSA's CAFE standards, EPA's GHG standards, and the GHG standards applicable in California and other States adopting the California standards. This joint rule will allow automakers to meet both the NHTSA and EPA requirements with a single national fleet, greatly simplifying the industry's technology, investment and compliance strategies. In addition, to promote the National Program, California announced its commitment to take several actions, including revising its program for MYs 2012–2016 such that compliance with the Federal GHG standards will be deemed to be compliance with California's GHG standards. This will allow the single national fleet used by automakers to meet the two Federal requirements and to meet California requirements as well. California is proceeding with a rulemaking intended to revise its 2004 regulations to meet its commitments. EPA and NHTSA are confident that these GHG and CAFE standards will successfully harmonize both the Federal and State programs for MYs 2012–2016 and will allow our country to achieve the increased benefits of a single, nationwide program to reduce light-duty vehicle GHG emissions and reduce the country's dependence on fossil fuels by improving these vehicles' fuel economy.

A successful and sustainable automotive industry depends upon, among other things, continuous technology innovation in general, and low GHG emissions and high fuel economy vehicles in particular. In this respect, this action will help spark the investment in technology innovation necessary for automakers to successfully compete in both domestic and export markets, and thereby continue to support a strong economy.

While this action covers MYs 2012–2016, many stakeholders encouraged EPA and NHTSA to also begin working toward standards for MY 2017 and beyond that would maintain a single nationwide program. The agencies recognize the importance of and are committed to a strong, coordinated national program for light-duty vehicles for model years beyond 2016.

Key elements of the National Program finalized today are the level and form of the GHG and CAFE standards, the available compliance mechanisms, and general implementation elements. These elements are summarized in the following section, with more detailed discussions about EPA's GHG program following in Section III, and about NHTSA's CAFE program in Section IV. This joint final rule responds to the wide array of comments that the agencies received on the proposed rule. This section summarizes many of the major comments on the primary elements of the proposal and describes whether and how the final rule has changed, based on the comments and additional analyses. Major comments and the agencies' responses to them are also discussed in more detail in later sections of this preamble. For a full summary of public comments and EPA's and NHTSA's responses to them, please see the Response to Comments document associated with this final rule.

1. Joint Analytical Approach

NHTSA and EPA have worked closely together on nearly every aspect of this joint final rule. The extent and results of this collaboration are reflected in the elements of the respective NHTSA and EPA rules, as well as the analytical work contained in the Joint Technical Support Document (Joint TSD). The Joint TSD, in particular, describes important details of the analytical work that are shared, as well as any differences in approach. These include the build up of the baseline and reference fleets, the derivation of the shape of the curves that define the standards, a detailed description of the costs and effectiveness of the technology choices that are available to vehicle manufacturers, a summary of the computer models used to estimate how technologies might be added to vehicles, and finally the economic inputs used to calculate the impacts and benefits of the rules, where practicable.

EPA and NHTSA have jointly developed attribute curve shapes that each agency is using for its final standards. Further details of these functions can be found in Sections III and IV of this preamble as well as Chapter 2 of the Joint TSD. A critical technical underpinning of each agency's analysis is the cost and effectiveness of the various control technologies. These are used to analyze the feasibility and cost of potential GHG and CAFE standards. A detailed description of all of the technology information considered can be found in Chapter 3 of the Joint TSD (and for A/C, Chapter 2 of the EPA RIA). This detailed technology data forms the inputs to computer models that each agency uses to project how vehicle manufacturers may add those technologies in order to comply with the new standards. These are the OMEGA and Volpe models for EPA and NHTSA, respectively. The models and their inputs can also be found in the docket. Further description of the model and outputs can be found in Sections III and IV of this preamble, and Chapter 3 of the Joint TSD. This comprehensive joint analytical approach has provided a sound and consistent technical basis for each agency in developing its final standards, which are summarized in the sections below.

The vast majority of public comments expressed strong support for the joint analytical work performed for the proposal. Commenters generally agreed with the analytical work and its results, and supported the transparency of the analysis and its underlying data. Where commenters raised specific points, the agencies have considered them and made changes where appropriate. The agencies' further evaluation of various technical issues also led to a limited number of changes. A detailed discussion of these issues can be found in Section II of this preamble, and the Joint TSD.

2. Level of the Standards

In this notice, EPA and NHTSA are establishing two separate sets of standards, each under its respective statutory authorities. EPA is setting national CO_2 emissions standards for light-duty vehicles under section 202(a) of the Clean Air Act. These standards will require these vehicles to meet an

estimated combined average emissions level of 250 grams/mile of CO_2 in model year 2016. NHTSA is setting CAFE standards for passenger cars and light trucks under 49 U.S.C. 32902. These standards will require manufacturers of those vehicles to meet an estimated combined average fuel economy level of 34.1 mpg in model year 2016. The standards for both agencies begin with the 2012 model year, with standards increasing in stringency through model year 2016. They represent a harmonized approach that will allow industry to build a single national fleet that will satisfy both the GHG requirements under the CAA and CAFE requirements under EPCA/EISA.

Given differences in their respective statutory authorities, however, the agencies' standards include some important differences. Under the CO_2 fleet average standards adopted under CAA section 202(a), EPA expects manufacturers to take advantage of the option to generate CO_2-equivalent credits by reducing emissions of hydrofluorocarbons (HFCs) and CO_2 through improvements in their air conditioner systems. EPA accounted for these reductions in developing its final CO_2 standards. NHTSA did not do so because EPCA does not allow vehicle manufacturers to use air conditioning credits in complying with CAFE standards for passenger cars.[19] CO_2 emissions due to air conditioning operation are not measured by the test procedure mandated by statute for use in establishing and enforcing CAFE standards for passenger cars. As a result, improvement in the efficiency of passenger car air conditioners is not considered as a possible control technology for purposes of CAFE.

These differences regarding the treatment of air conditioning improvements (related to CO_2 and HFC reductions) affect the relative stringency of the EPA standard and NHTSA standard for MY 2016. The 250 grams per mile of CO_2 equivalent emissions limit is equivalent to 35.5 mpg[20] if the automotive industry were to meet this CO_2 level all through fuel economy improvements. As a consequence of the prohibition against NHTSA's allowing credits for air conditioning improvements for purposes of passenger car CAFE compliance, NHTSA is setting fuel economy standards that are estimated to require a combined (passenger car and light truck) average fuel economy level of 34.1 mpg by MY 2016.

The vast majority of public comments expressed strong support for the National Program standards, including the stringency of the agencies' respective standards and the phase-in from model year 2012 through 2016. There were a number of comments supporting standards more stringent than proposed, and a few others supporting less stringent standards, in particular for the 2012–2015 model years. The agencies' consideration of comments and their updated technical analyses led to only very limited changes in the footprint curves and did not change the agencies' projections that the nationwide fleet will achieve a level of 250 grams/mile by 2016 (equivalent to 35.5 mpg). The responses to these comments are discussed in more detail in Sections III and IV, respectively, and in the Response to Comments document.

As proposed, NHTSA and EPA's final standards, like the standards NHTSA promulgated in March 2009 for MY 2011, are expressed as mathematical functions depending on vehicle footprint. Footprint is one measure of vehicle size, and is determined by multiplying the vehicle's wheelbase by the vehicle's average track width.[21] The standards that must be met by each manufacturer's fleet will be determined by computing the sales-weighted average (harmonic average for CAFE) of the targets applicable to each of the manufacturer's passenger cars and light trucks. Under these footprint-based standards, the levels required of individual manufacturers will depend, as noted above, on the mix of vehicles sold. NHTSA's and EPA's respective standards are shown in the tables below. It is important to note that the standards are the attribute-based curves established by each agency. The values in the tables below reflect the agencies' projection of the corresponding fleet levels that will result from these attribute-based curves.

As a result of public comments and updated economic and future fleet projections, EPA and NHTSA have updated the attribute based curves for this final rule, as discussed in detail in Section II.B of this preamble and Chapter 2 of the Joint TSD. This update in turn affects costs, benefits, and other impacts of the final standards. Thus, the agencies have updated their overall projections of the impacts of the final rule standards, and these results are only slightly different from those presented in the proposed rule.

As shown in Table I.B.2–1, NHTSA's fleet-wide CAFE-required levels for passenger cars under the final standards are projected to increase from 33.3 to 37.8 mpg between MY 2012 and MY 2016. Similarly, fleet-wide CAFE levels for light trucks are projected to increase from 25.4 to 28.8 mpg. NHTSA has also estimated the average fleet-wide required levels for the combined car and truck fleets. As shown, the overall fleet average CAFE level is expected to be 34.1 mpg in MY 2016. These numbers do not include the effects of other flexibilities and credits in the program. These standards represent a 4.3 percent average annual rate of increase relative to the MY 2011 standards.[22]

TABLE I.B.2–1—AVERAGE REQUIRED FUEL ECONOMY (mpg) UNDER FINAL CAFE STANDARDS

	2011-base	2012	2013	2014	2015	2016
Passenger Cars	30.4	33.3	34.2	34.9	36.2	37.8
Light Trucks	24.4	25.4	26.0	26.6	27.5	28.8
Combined Cars & Trucks	27.6	29.7	30.5	31.3	32.6	34.1

[19] There is no such statutory limitation with respect to light trucks.

[20] The agencies are using a common conversion factor between fuel economy in units of miles per gallon and CO_2 emissions in units of grams per mile. This conversion factor is 8,887 grams CO_2 per gallon gasoline fuel. Diesel fuel has a conversion factor of 10,180 grams CO_2 per gallon diesel fuel though for the purposes of this calculation, we are assuming 100% gasoline fuel.

[21] See 49 CFR 523.2 for the exact definition of "footprint."

[22] Because required CAFE levels depend on the mix of vehicles sold by manufacturers in a model year, NHTSA's estimate of future required CAFE levels depends on its estimate of the mix of vehicles that will be sold in that model year. NHTSA currently estimates that the MY 2011 standards will require average fuel economy levels of 30.4 mpg for passenger cars, 24.4 mpg for light trucks, and 27.6 mpg for the combined fleet.

Accounting for the expectation that some manufacturers could continue to pay civil penalties rather than achieving required CAFE levels, and the ability to use FFV credits,[23] NHTSA estimates that the CAFE standards will lead to the following average achieved fuel economy levels, based on the projections of what each manufacturer's fleet will comprise in each year of the program:[24]

TABLE I.B.2–2—PROJECTED FLEET-WIDE ACHIEVED CAFE LEVELS UNDER THE FINAL FOOTPRINT-BASED CAFE STANDARDS (mpg)

	2012	2013	2014	2015	2016
Passenger Cars	32.3	33.5	34.2	35.0	36.2
Light Trucks	24.5	25.1	25.9	26.7	27.5
Combined Cars & Trucks	28.7	29.7	30.6	31.5	32.7

NHTSA is also required by EISA to set a minimum fuel economy standard for domestically manufactured passenger cars in addition to the attribute-based passenger car standard. The minimum standard "shall be the greater of (A) 27.5 miles per gallon; or (B) 92 percent of the average fuel economy projected by the Secretary for the combined domestic and non-domestic passenger automobile fleets manufactured for sale in the United States by all manufacturers in the model year.* * *"[25]

Based on NHTSA's current market forecast, the agency's estimates of these minimum standards under the MY 2012–2016 CAFE standards (and, for comparison, the final MY 2011 standard) are summarized below in Table I.B.2–3.[26] For eventual compliance calculations, the final calculated minimum standards will be updated to reflect the average fuel economy level required under the final standards.

TABLE I.B.2–3—ESTIMATED MINIMUM STANDARD FOR DOMESTICALLY MANUFACTURED PASSENGER CARS UNDER MY 2011 AND MY 2012–2016 CAFE STANDARDS FOR PASSENGER CARS (mpg)

2011	2012	2013	2014	2015	2016
27.8	30.7	31.4	32.1	33.3	34.7

EPA is establishing GHG emissions standards, and Table I.B.2–4 provides EPA's estimates of their projected overall fleet-wide CO_2 equivalent emission levels.[27] The g/mi values are CO_2 equivalent values because they include the projected use of air conditioning (A/C) credits by manufacturers, which include both HFC and CO_2 reductions.

TABLE I.B.2–4—PROJECTED FLEET-WIDE EMISSIONS COMPLIANCE LEVELS UNDER THE FOOTPRINT-BASED CO_2 STANDARDS (g/mi)

	2012	2013	2014	2015	2016
Passenger Cars	263	256	247	236	225
Light Trucks	346	337	326	312	298
Combined Cars & Trucks	295	286	276	263	250

As shown in Table I.B.2–4, fleet-wide CO_2 emission level requirements for cars are projected to increase in stringency from 263 to 225 g/mi between MY 2012 and MY 2016. Similarly, fleet-wide CO_2 equivalent emission level requirements for trucks are projected to increase in stringency from 346 to 298 g/mi. As shown, the overall fleet average CO_2 level requirements are projected to increase in stringency from 295 g/mi in MY 2012 to 250 g/mi in MY 2016.

EPA anticipates that manufacturers will take advantage of program flexibilities such as flexible fueled vehicle credits and car/truck credit trading. Due to the credit trading between cars and trucks, the estimated improvements in CO_2 emissions are distributed differently than shown in Table I.B.2–4, where full manufacturer compliance without credit trading is assumed. Table I.B.2–5 shows EPA's projection of the achieved emission levels of the fleet for MY 2012 through 2016, which does consider the impact of car/truck credit transfer and the increase in emissions due to certain program flexibilities including flex fueled vehicle credits and the temporary lead time allowance alternative standards. The use of optional air conditioning credits is considered both in this analysis of achieved levels and of the

[23] The penalties are similar in function to essentially unlimited, fixed-price allowances.

[24] NHTSA's estimates account for availability of CAFE credits for the sale of flexible-fuel vehicles (FFVs), and for the potential that some manufacturers will pay civil penalties rather than comply with the CAFE standards. This yields NHTSA's estimates of the real-world fuel economy that will likely be achieved under the final CAFE standards. NHTSA has not included any potential impact of car-truck credit transfer in its estimate of the achieved CAFE levels.

[25] 49 U.S.C. 32902(b)(4).

[26] In the March 2009 final rule establishing MY 2011 standards for passenger cars and light trucks, NHTSA estimated that the minimum required CAFE standard for domestically manufactured passenger cars would be 27.8 mpg under the MY 2011 passenger car standard.

[27] These levels do not include the effect of flexible fuel credits, transfer of credits between cars and trucks, temporary lead time allowance, or any other credits with the exception of air conditioning.

compliance levels described above. As can be seen in Table I.B.2–5, the projected achieved levels are slightly higher for model years 2012–2015 due to EPA's assumptions about manufacturers' use of the regulatory flexibilities, but by model year 2016 the achieved level is projected to be 250 g/mi for the fleet.

TABLE I.B.2–5—PROJECTED FLEET-WIDE ACHIEVED EMISSION LEVELS UNDER THE FOOTPRINT-BASED CO_2 STANDARDS (g/mi)

	2012	2013	2014	2015	2016
Passenger Cars	267	256	245	234	223
Light Trucks	365	353	340	324	303
Combined Cars & Trucks	305	293	280	266	250

Several auto manufacturers stated that the increasingly stringent requirements for fuel economy and GHG emissions in the early years of the program should follow a more linear phase-in. The agencies' consideration of comments and of their updated technical analyses did not lead to changes to the phase-in of the standards discussed above. This issue is discussed in more detail in Sections II.D, and in Sections III and IV.

NHTSA's and EPA's technology assessment indicates there is a wide range of technologies available for manufacturers to consider in upgrading vehicles to reduce GHG emissions and improve fuel economy. Commenters were in general agreement with this assessment.[28] As noted, these include improvements to the engines such as use of gasoline direct injection and downsized engines that use turbochargers to provide performance similar to that of larger engines, the use of advanced transmissions, increased use of start-stop technology, improvements in tire rolling resistance, reductions in vehicle weight, increased use of hybrid and other advanced technologies, and the initial commercialization of electric vehicles and plug-in hybrids. EPA is also projecting improvements in vehicle air conditioners including more efficient as well as low leak systems. All of these technologies are already available today, and EPA's and NHTSA's assessments are that manufacturers will be able to meet the standards through more widespread use of these technologies across the fleet.

With respect to the practicability of the standards in terms of lead time, during MYs 2012–2016 manufacturers are expected to go through the normal automotive business cycle of redesigning and upgrading their light-duty vehicle products, and in some cases introducing entirely new vehicles not on the market today. This rule allows manufacturers the time needed to incorporate technology to achieve GHG reductions and improve fuel economy during the vehicle redesign process. This is an important aspect of the rule, as it avoids the much higher costs that would occur if manufacturers needed to add or change technology at times other than their scheduled redesigns. This time period also provides manufacturers the opportunity to plan for compliance using a multi-year time frame, again consistent with normal business practice. Over these five model years, there will be an opportunity for manufacturers to evaluate almost every one of their vehicle model platforms and add technology in a cost effective way to control GHG emissions and improve fuel economy. This includes redesign of the air conditioner systems in ways that will further reduce GHG emissions. Various commenters stated that the proposed phase-in of the standards should be introduced more aggressively, less aggressively, or in a more linear manner. However, our consideration of these comments about the phase-in, as well as our revised analyses, leads us to conclude that the general rate of introduction of the standards as proposed remains appropriate. This conclusion is also not affected by the slight difference from the proposal in the final footprint-based curves. These issues are addressed further in Sections III and IV.

Both agencies considered other standards as part of the rulemaking analyses, both more and less stringent than those proposed. EPA's and NHTSA's analyses of alternative standards are contained in Sections III and IV of this preamble, respectively, as well as the agencies' respective RIAs.

The CAFE and GHG standards described above are based on determining emissions and fuel economy using the city and highway test procedures that are currently used in the CAFE program. Some environmental and other organizations commented that the test procedures should be improved to reflect more real-world driving conditions; auto manufacturers in general do not support such changes to the test procedures at this time. Both agencies recognize that these test procedures are not fully representative of real-world driving conditions. For example, EPA has adopted more representative test procedures that are used in determining compliance with emissions standards for pollutants other than GHGs. These test procedures are also used in EPA's fuel economy labeling program. However, as discussed in Section III, the current information on effectiveness of the individual emissions control technologies is based on performance over the CAFE test procedures. For that reason, EPA is using the current CAFE test procedures for the CO_2 standards and is not changing those test procedures in this rulemaking. NHTSA, as discussed above, is limited by statute in what test procedures can be used for purposes of passenger car testing, although there is no such statutory limitation with respect to test procedures for trucks. However, the same reasons for not changing the truck test procedures apply for CAFE as well.

Both EPA and NHTSA are interested in developing programs that employ test procedures that are more representative of real-world driving conditions, to the extent authorized under their respective statutes. This is an important issue, and the agencies intend to continue to evaluate it in the context of a future rulemaking to address standards for model year 2017 and thereafter. This could include consideration of a range of test procedure changes to better represent real-world driving conditions in terms of speed, acceleration, deceleration, ambient temperatures, use of air conditioners, and the like. With respect to air conditioner operation, EPA discusses the public comments on these issues and the final procedures for determining emissions credits for controls on air conditioners in Section III.

[28] The close relationship between emissions of CO_2—the most prevalent greenhouse gas emitted by motor vehicles—and fuel consumption, means that the technologies to control CO_2 emissions and to improve fuel economy overlap to a great degree.

Finally, based on the information EPA developed in its recent rulemaking that updated its fuel economy labeling program to better reflect average real-world fuel economy, the calculation of fuel savings and CO_2 emissions reductions that will be achieved by the CAFE and GHG standards includes adjustments to account for the difference between the fuel economy level measured in the CAFE test procedure and the fuel economy actually achieved on average under real-world driving conditions. These adjustments are industry averages for the vehicles' performance as a whole, however, and are not a substitute for the information on effectiveness of individual control technologies that will be explored for purposes of a future GHG and CAFE rulemaking.

3. Form of the Standards

NHTSA and EPA proposed attribute-based standards for passenger cars and light trucks. NHTSA adopted an attribute approach based on vehicle footprint in its Reformed CAFE program for light trucks for model years 2008–2011,[29] and recently extended this approach to passenger cars in the CAFE rule for MY 2011 as required by EISA.[30] The agencies also proposed using vehicle footprint as the attribute for the GHG and CAFE standards. Footprint is defined as a vehicle's wheelbase multiplied by its track width—in other words, the area enclosed by the points at which the wheels meet the ground. Most commenters that expressed a view on this topic supported basing the standards on an attribute, and almost all of these supported the proposed choice of vehicle footprint as an appropriate attribute. The agencies continue to believe that the standards are best expressed in terms of an attribute, and that the footprint attribute is the most appropriate attribute on which to base the standards. These issues are further discussed later in this notice and in Chapter 2 of the Joint TSD.

Under the footprint-based standards, each manufacturer will have a GHG and CAFE target unique to its fleet, depending on the footprints of the vehicle models produced by that manufacturer. A manufacturer will have separate footprint-based standards for cars and for trucks. Generally, larger vehicles (*i.e.,* vehicles with larger footprints) will be subject to less stringent standards (*i.e.,* higher CO_2 grams/mile standards and lower CAFE standards) than smaller vehicles. This is because, generally speaking, smaller vehicles are more capable of achieving lower levels of CO_2 and higher levels of fuel economy than larger vehicles. While a manufacturer's fleet average standard could be estimated throughout the model year based on projected production volume of its vehicle fleet, the standard to which the manufacturer must comply will be based on its final model year production figures. A manufacturer's calculation of fleet average emissions at the end of the model year will thus be based on the production-weighted average emissions of each model in its fleet.

The final footprint-based standards are very similar in shape to those proposed. NHTSA and EPA include more discussion of the development of the final curves in Section II below, with a full discussion in the Joint TSD. In addition, a full discussion of the equations and coefficients that define the curves is included in Section III for the CO_2 curves and Section IV for the mpg curves. The following figures illustrate the standards. First, Figure I.B.3–1 shows the fuel economy (mpg) car standard curve.

Under an attribute-based standard, every vehicle model has a performance target (fuel economy for the CAFE standards, and CO_2 g/mile for the GHG emissions standards), the level of which depends on the vehicle's attribute (for this rule, footprint). The manufacturers' fleet average performance is determined by the production-weighted[31] average (for CAFE, harmonic average) of those targets. NHTSA and EPA are setting CAFE and CO_2 emissions standards defined by constrained linear functions and, equivalently, piecewise linear functions.[32] As a possible option for future rulemakings, the constrained linear form was introduced by NHTSA in the 2007 NPRM proposing CAFE standards for MY 2011–2015.

NHTSA is establishing the attribute curves below for assigning a fuel economy level to an individual vehicle's footprint value, for model years 2012 through 2016. These mpg values will be production weighted to determine each manufacturer's fleet average standard for cars and trucks. Although the general model of the equation is the same for each vehicle category and each year, the parameters of the equation differ for cars and trucks. Each parameter also changes on an annual basis, resulting in the yearly increases in stringency. Figure I.B.3–1 below illustrates the passenger car CAFE standard curves for model years 2012 through 2016 while Figure I.B.3–2 below illustrates the light truck standard curves for model years 2012–2016. The MY 2011 final standards for cars and trucks, which are specified by a constrained logistic function rather than a constrained linear function, are shown for comparison.

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[29] 71 FR 17566 (Apr. 6, 2006).

[30] 74 FR 14196 (Mar. 30, 2009).

[31] Based on vehicles produced for sale in the United States.

[32] The equations are equivalent but are specified differently due to differences in the agencies' respective models.

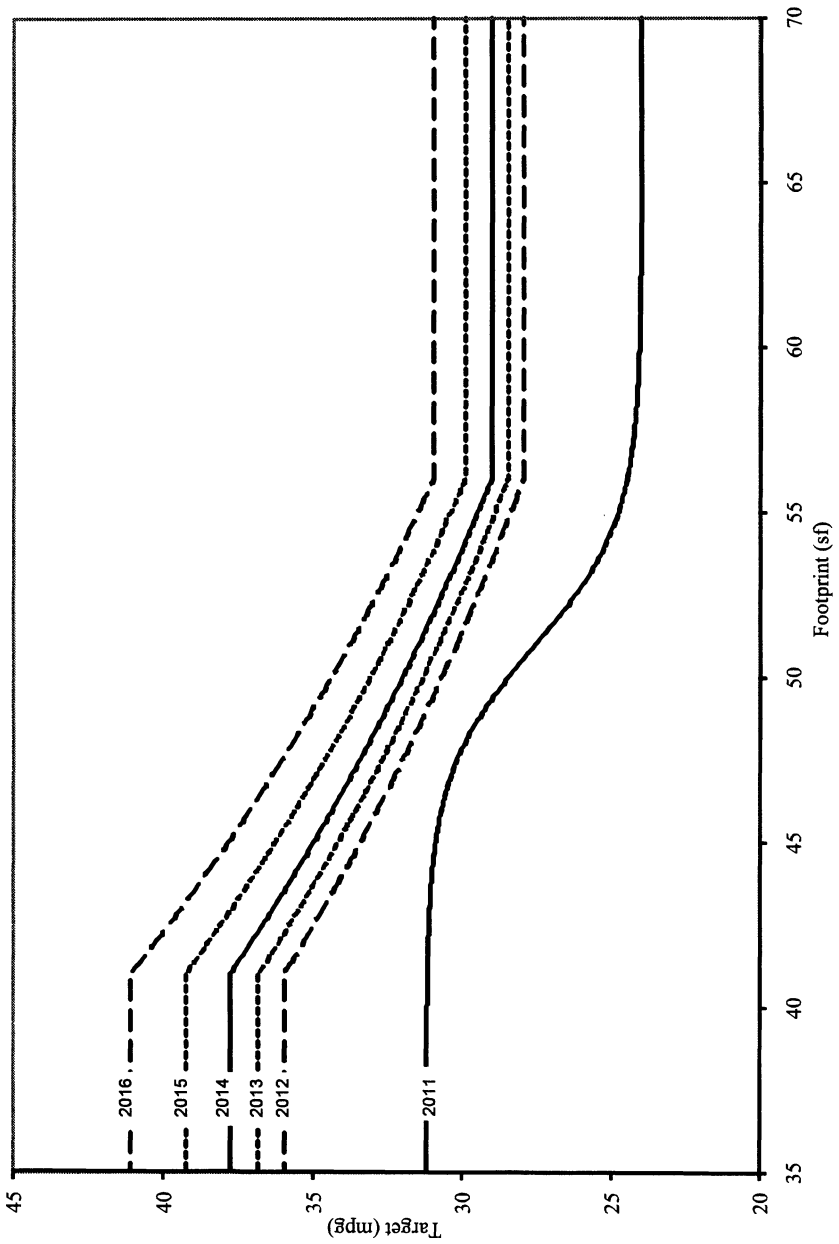

Figure I.B.3-1. MY 2011 and MY 2012-2016 Passenger Car Fuel Economy Targets

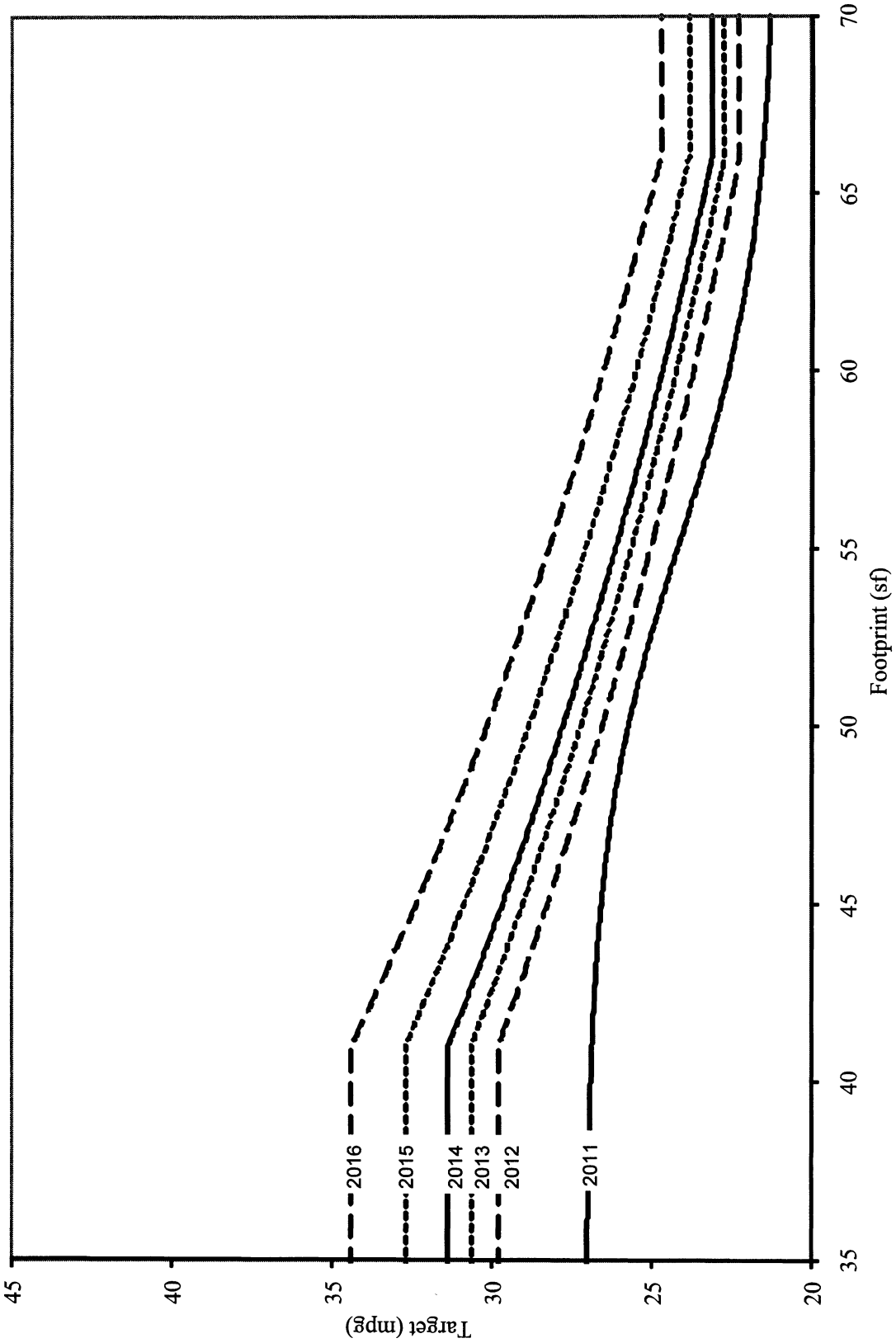

Figure I.B.3-2. MY 2011 and MY 2012-2016 Light Truck Fuel Economy Targets

EPA is establishing the attribute curves below for assigning a CO_2 level to an individual vehicle's footprint value, for model years 2012 through 2016. These CO_2 values will be production weighted to determine each manufacturer's fleet average standard for cars and trucks. As with the CAFE curves above, the general form of the equation is the same for each vehicle category and each year, but the parameters of the equation differ for cars and trucks. Again, each parameter also changes on an annual basis, resulting in the yearly increases in stringency. Figure I.B.3–3 below illustrates the CO_2 car standard curves for model years 2012 through 2016 while Figure I.B.3–4 shows the CO_2 truck standard curves for model years 2012–2016.

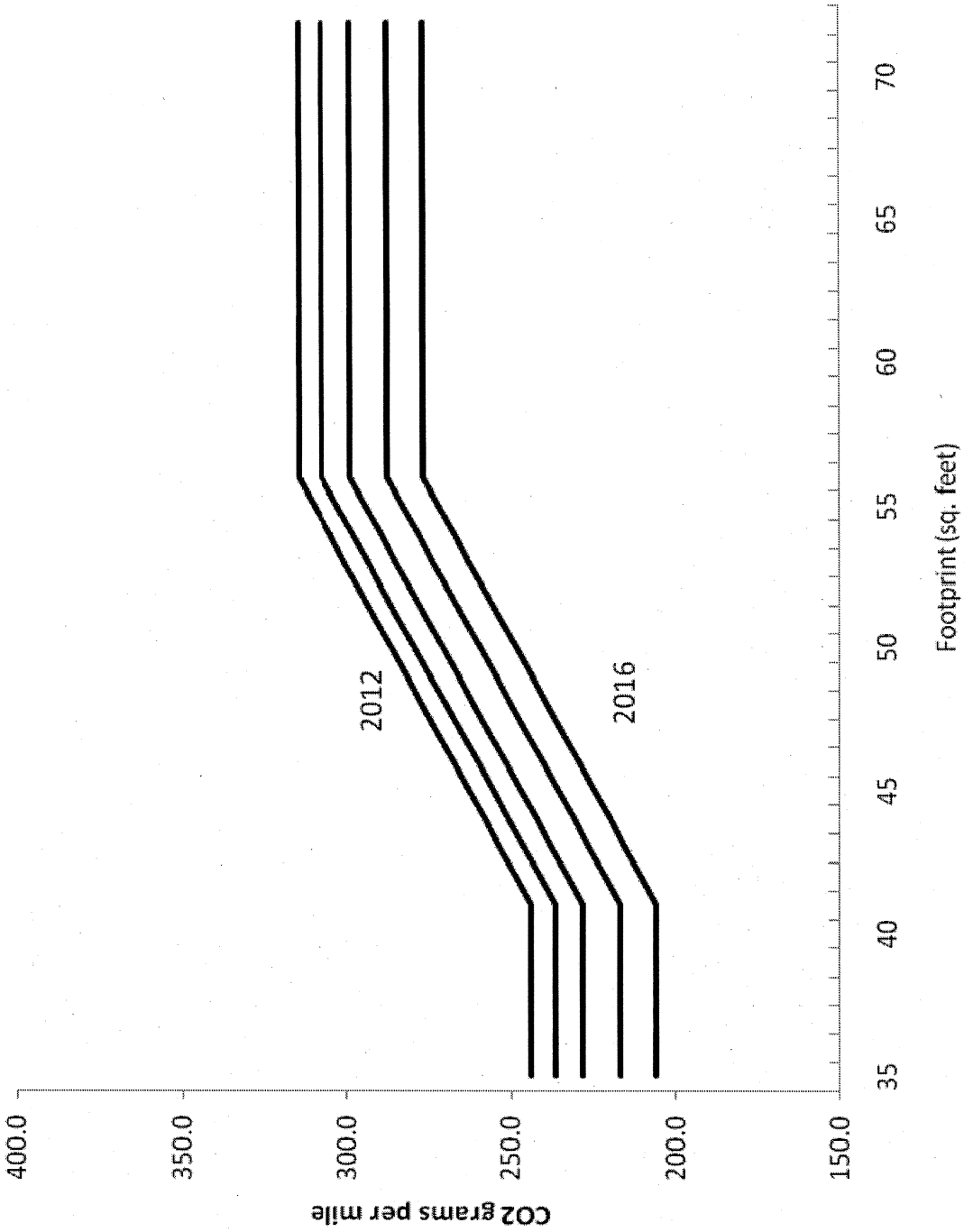

Figure I.B.3-3 CO_2 (g/mi) Car Standard Curves

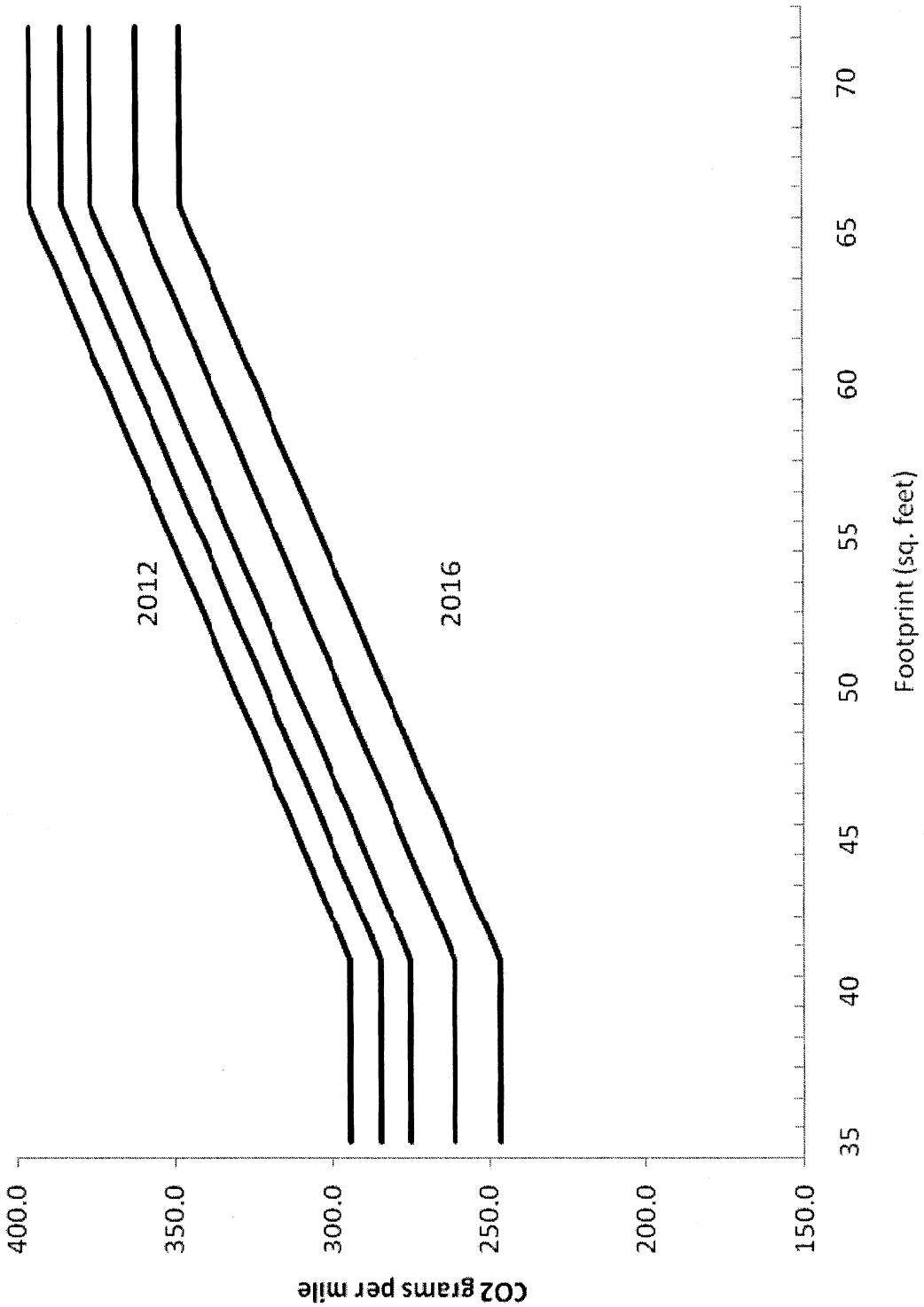

Figure I.B.3-4 CO_2 (g/mi) Truck Standard Curves

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NHTSA and EPA received a number of comments about the shape of the car and truck curves. We address these comments further in Section II.C below as well as in Sections III and IV.

As proposed, NHTSA and EPA will use the same vehicle category definitions for determining which vehicles are subject to the car curve standards versus the truck curve standards. In other words, a vehicle classified as a car under the NHTSA CAFE program will also be classified as a car under the EPA GHG program, and likewise for trucks. Auto industry commenters generally agreed with this approach and believe it is an important aspect of harmonization across the two agencies' programs. Some other commenters expressed concern about potential consequences, especially in how cars and trucks are distinguished. However, EPA and NHTSA are employing the same car and truck definitions for the MY 2012–2016 CAFE and GHG standards as those used in the CAFE program for the 2011 model year standards.[33] This issue is further discussed for the EPA standards in Section III, and for the NHTSA standards in Section IV. This approach of using CAFE definitions allows EPA's CO_2 standards and the CAFE standards to be harmonized across all vehicles for this program. However, EPA is not changing the car/truck definition for the purposes of any other previous rules.

Generally speaking, a smaller footprint vehicle will have higher fuel economy and lower CO_2 emissions relative to a larger footprint vehicle when both have the same degree of fuel efficiency improvement technology. In this final rule, the standards apply to a manufacturers overall fleet, not an individual vehicle, thus a manufacturers fleet which is dominated by small footprint vehicles will have a higher fuel economy requirement (lower CO_2 requirement) than a manufacturer whose fleet is dominated by large footprint vehicles. A footprint-based CO_2 or CAFE standard can be relatively neutral with respect to vehicle size and consumer choice. All vehicles, whether smaller or larger, must make improvements to reduce CO_2 emissions or improve fuel economy, and therefore all vehicles will be relatively more expensive. With the footprint-based standard approach, EPA and NHTSA believe there should be no significant effect on the relative distribution of different vehicle sizes in the fleet, which means that consumers will still be able to purchase the size of vehicle that meets their needs. While targets are manufacturer specific, rather than vehicle specific, Table I.B.3–1 illustrates the fact that different vehicle sizes will have varying CO_2 emissions and fuel economy targets under the final standards.

TABLE I.B.3—1 MODEL YEAR 2016 CO_2 AND FUEL ECONOMY TARGETS FOR VARIOUS MY 2008 VEHICLE TYPES

Vehicle type	Example models	Example model footprint (sq. ft.)	CO_2 emissions target (g/mi)	Fuel economy target (mpg)
Example Passenger Cars				
Compact car	Honda Fit	40	206	41.1
Midsize car	Ford Fusion	46	230	37.1
Fullsize car	Chrysler 300	53	263	32.6
Example Light-duty Trucks				
Small SUV	4WD Ford Escape	44	259	32.9
Midsize crossover	Nissan Murano	49	279	30.6
Minivan	Toyota Sienna	55	303	28.2
Large pickup truck	Chevy Silverado	67	348	24.7

4. Program Flexibilities

EPA's and NHTSA's programs as established in this rule provide compliance flexibility to manufacturers, especially in the early years of the National Program. This flexibility is expected to provide sufficient lead time for manufacturers to make necessary technological improvements and reduce the overall cost of the program, without compromising overall environmental and fuel economy objectives. The broad goal of harmonizing the two agencies' standards includes preserving manufacturers' flexibilities in meeting the standards, to the extent appropriate and required by law. The following section provides an overview of this final rule's flexibility provisions. Many auto manufacturers commented in support of these provisions as critical to meeting the standards in the lead time provided. Environmental groups, some States, and others raised concerns about the possibility for windfall credits and loss of program benefits. The provisions in the final rule are in most cases the same as those proposed. However consideration of the issues raised by commenters has led to modifications in certain provisions. These comments and the agencies' response are discussed in Sections III and IV below and in the Response to Comments document.

a. CO_2/CAFE Credits Generated Based on Fleet Average Performance

Under this NHTSA and EPA final rule, the fleet average standards that apply to a manufacturer's car and truck fleets are based on the applicable footprint-based curves. At the end of each model year, when production of the model year is complete, a production-weighted fleet average will be calculated for each averaging set (cars and trucks). Under this approach, a manufacturer's car and/or truck fleet that achieves a fleet average CO_2/CAFE level better than the standard can generate credits. Conversely, if the fleet average CO_2/CAFE level does not meet the standard, the fleet would incur debits (also referred to as a shortfall).

Under the final program, a manufacturer whose fleet generates credits in a given model year would have several options for using those credits, including credit carry-back, credit carry-forward, credit transfers, and credit trading. These provisions exist in the MY 2011 CAFE program under EPCA and EISA, and similar provisions are part of EPA's Tier 2 program for light-duty vehicle criteria pollutant emissions, as well as many

[33] 49 CFR 523.

other mobile source standards issued by EPA under the CAA. The manufacturer will be able to carry back credits to offset a deficit that had accrued in a prior model year and was subsequently carried over to the current model year. EPCA also provides for this. EPCA restricts the carry-back of CAFE credits to three years, and as proposed EPA is establishing the same limitation, in keeping with the goal of harmonizing both sets of standards.

After satisfying any need to offset pre-existing deficits, remaining credits can be saved (banked) for use in future years. Under the CAFE program, EISA allows manufacturers to apply credits earned in a model year to compliance in any of the five subsequent model years.[34] As proposed, under the GHG program, EPA is also allowing manufacturers to use these banked credits in the five years after the year in which they were generated (*i.e.,* five years carry-forward).

EISA required NHTSA to establish by regulation a CAFE credits transferring program, which NHTSA established in a March 2009 final rule codified at 49 CFR Part 536, to allow a manufacturer to transfer credits between its vehicle fleets to achieve compliance with the standards. For example, credits earned by over-compliance with a manufacturer's car fleet average standard could be used to offset debits incurred due to that manufacturer's not meeting the truck fleet average standard in a given year. EPA's Tier 2 program also provides for this type of credit transfer. As proposed for purposes of this rule, EPA allows unlimited credit transfers across a manufacturer's car-truck fleet to meet the GHG standard. This is based on the expectation that this flexibility will facilitate manufacturers' ability to comply with the GHG standards in the lead time provided, and will allow the required GHG emissions reductions to be achieved in the most cost effective way. Under the CAA, unlike under EISA, there is no statutory limitation on car-truck credit transfers. Therefore, EPA is not constraining car-truck credit transfers, as doing so would reduce the flexibility for lead time, and would increase costs with no corresponding environmental benefit. For the CAFE program, however, EISA limits the amount of credits that may be transferred, which has the effects of limiting the extent to which a manufacturer can rely upon credits in lieu of making fuel economy improvements to a particular portion of its vehicle fleet, but also of potentially increasing the costs of improving the manufacturer's overall fleet. EISA also prohibits the use of transferred credits to meet the statutory minimum level for the domestic car fleet standard.[35] These and other statutory limits will continue to apply to the determination of compliance with the CAFE standards.

EISA also allowed NHTSA to establish by regulation a CAFE credit trading program, which NHTSA established in the March 2009 final rule at 40 CFR part 536, to allow credits to be traded (sold) to other vehicle manufacturers. As proposed, EPA allows credit trading in the GHG program. These sorts of exchanges are typically allowed under EPA's current mobile source emission credit programs, although manufacturers have seldom made such exchanges. Under the NHTSA CAFE program, EPCA also allows these types of credit trades, although, as with transferred credits, traded credits may not be used to meet the minimum domestic car standards specified by statute.[36] Comments discussing these provisions supported the proposed approach. These final provisions are the same as proposed.

As further discussed in Section IV of this preamble, NHTSA sought to find a way to provide credits for improving the efficiency of light truck air conditioners (A/Cs) and solicited public comments to that end. The agency did so because the power necessary to operate an A/C compressor places a significant additional load on the engine, thus reducing fuel economy and increasing CO_2 tailpipe emissions. *See* Section III.C.1 below. The agency would have made a similar effort regarding cars, but a 1975 statutory provision made it unfruitful even to explore the possibility of administratively proving such credits for cars. The agency did not identify a workable way of providing such credits for light trucks in the context of this rulemaking.

b. Air Conditioning Credits Under the EPA Final Rule

Air conditioning (A/C) systems contribute to GHG emissions in two ways. Hydrofluorocarbon (HFC) refrigerants, which are powerful GHGs, can leak from the A/C system (direct A/C emissions). As just noted, operation of the A/C system also places an additional load on the engine, which results in additional CO_2 tailpipe emissions (indirect A/C related emissions). EPA is allowing manufacturers to generate credits by reducing either or both types of GHG emissions related to A/C systems. Specifically, EPA is establishing a method to calculate CO_2 equivalent reductions for the vehicle's full useful life on a grams/mile basis that can be used as credits in meeting the fleet average CO_2 standards. EPA's analysis indicates that this approach provides manufacturers with a highly cost-effective way to achieve a portion of GHG emissions reductions under the EPA program. EPA is estimating that manufacturers will on average generate 11 g/mi GHG credit toward meeting the 250 g/mi by 2016 (though some companies may generate more). EPA will also allow manufacturers to earn early A/C credits starting in MY 2009 through 2011, as discussed further in a later section. There were many comments on the proposed A/C provisions. Nearly every one of these was supportive of EPA including A/C control as part of this rule, though there was some disagreement on some of the details of the program. The HFC crediting scheme was widely supported. The comments mainly were concentrated on indirect A/C related credits. The auto manufacturers and suppliers had some technical comments on A/C technologies, and there were many concerns with the proposed idle test. EPA has made some minor adjustments in both of these areas that we believe are responsive to these concerns. EPA addresses A/C issues in greater detail in Section III of this preamble and in Chapter 2 of EPA's RIA.

c. Flexible-Fuel and Alternative Fuel Vehicle Credits

EPCA authorizes a compliance flexibility incentive under the CAFE program for production of dual-fueled or flexible-fuel vehicles (FFV) and dedicated alternative fuel vehicles. FFVs are vehicles that can run both on an alternative fuel and conventional fuel. Most FFVs are E85 capable vehicles, which can run on either gasoline or a mixture of up to 85 percent ethanol and 15 percent gasoline (E85). Dedicated alternative fuel vehicles are vehicles that run exclusively on an alternative fuel. EPCA was amended by EISA to extend the period of availability of the FFV incentive, but to begin phasing it out by annually reducing the amount of FFV incentive that can be used toward compliance with the CAFE standards.[37] Although NHTSA

[34] 49 U.S.C. 32903(a)(2).

[35] 49 U.S.C. 32903(g)(4).

[36] 49 U.S.C. 32903(f)(2).

[37] EPCA provides a statutory incentive for production of FFVs by specifying that their fuel economy is determined using a special calculation procedure that results in those vehicles being assigned a higher fuel economy level than would

Continued

expressed concern about the non-use of alternative fuel by FFVs in a 2002 report to Congress (Effects of the Alternative Motor Fuels Act CAFE Incentives Policy), EISA does not premise the availability of the FFV credits on actual use of alternative fuel by an FFV vehicle. Under NHTSA's CAFE program, pursuant to EISA, no FFV credits will be available for CAFE compliance after MY 2019.[38] For dedicated alternative fuel vehicles, there are no limits or phase-out of the credits. As required by the statute, NHTSA will continue to allow the use of FFV credits for purposes of compliance with the CAFE standards until the end of the EISA phase-out period.

For the GHG program, as proposed, EPA will allow FFV credits in line with EISA limits, but only during the period from MYs 2012 to 2015. After MY 2015, EPA will only allow FFV credits based on a manufacturer's demonstration that the alternative fuel is actually being used in the vehicles and based on the vehicle's actual performance. EPA discusses this in more detail in Section III.C of the preamble, including a summary of key comments. These provisions are being finalized as proposed, with further discussion in Section III.C of how manufacturers can demonstrate that the alternative fuel is being used.

d. Temporary Lead-Time Allowance Alternative Standards Under the EPA Final Rule

Manufacturers with limited product lines may be especially challenged in the early years of the National Program, and need additional lead time. Manufacturers with narrow product offerings may not be able to take full advantage of averaging or other program flexibilities due to the limited scope of the types of vehicles they sell. For example, some smaller volume manufacturer fleets consist entirely of vehicles with very high baseline CO_2 emissions. Their vehicles are above the CO_2 emissions target for that vehicle footprint, but do not have other types of vehicles in their production mix with which to average. Often, these manufacturers pay fines under the CAFE program rather than meet the applicable CAFE standard. EPA believes that these technological circumstances call for more lead time in the form of a more gradual phase-in of standards.

EPA is finalizing a temporary lead-time allowance for manufacturers that sell vehicles in the U.S. in MY 2009 and for which U.S. vehicle sales in that model year are below 400,000 vehicles. This allowance will be available only during the MY 2012–2015 phase-in years of the program. A manufacturer that satisfies the threshold criteria will be able to treat a limited number of vehicles as a separate averaging fleet, which will be subject to a less stringent GHG standard.[39] Specifically, a standard of 25 percent above the vehicle's otherwise applicable foot-print target level will apply to up to 100,000 vehicles total, spread over the four year period of MY 2012 through 2015. Thus, the number of vehicles to which the flexibility could apply is limited. EPA also is setting appropriate restrictions on credit use for these vehicles, as discussed further in Section III. By MY 2016, these allowance vehicles must be averaged into the manufacturer's full fleet (*i.e.,* they will no longer be eligible for a different standard). EPA discusses this in more detail in Section III.B of the preamble.

EPA received comments from several smaller manufacturers that the TLAAS program was insufficient to allow manufacturers with very limited product lines to comply. These manufacturers commented that they need additional lead time to meet the standards, because their CO_2 baselines are significantly higher and their vehicle product lines are even more limited, reducing their ability to average across their fleets compared even to other TLAAS manufacturers. EPA fully summarizes the public comments on the TLAAS program, including comments not supporting the program, in Section III.B. In summary, in response to the lead time issues raised by manufacturers, EPA is modifying the TLAAS program that applies to manufacturers with between 5,000 and 50,000 U.S. vehicle sales in MY 2009. EPA believes these provisions are necessary given that, compared with other TLAAS manufacturers, these manufacturers have even more limited product offerings across which to average and higher baseline CO_2 emissions, and thus need additional lead-time to meet the standards. These manufacturers would have an increased allotment of vehicles, a total of 250,000, compared to 100,000 vehicles (for other TLAAS-eligible manufacturers). In addition, the TLAAS program for these manufacturers would be extended by one year, through MY 2016 for these vehicles, for a total of five years of eligibility. The other provisions of the TLAAS program would continue to apply, such as the restrictions on credit trading and the level of the standard. Additional restrictions would also apply to these vehicles, as discussed in Section III. In addition, for the smallest volume manufacturers, those with below 5,000 U.S. vehicle sales, EPA is not setting standards at this time but is instead deferring standards until a future rulemaking. This is essentially the same approach we are using for small businesses, which are exempted from this rule. The unique issues involved with these manufacturers will be addressed in that future rulemaking. Further discussion of the public comment on these issues and details on these changes from the proposed program are included in Section III.

e. Additional Credit Opportunities Under the Clean Air Act (CAA)

EPA is establishing additional opportunities for early credits in MYs 2009–2011 through over-compliance with a baseline standard. The baseline standard is set to be equivalent, on a national level, to the California standards. Credits can be generated by over-compliance with this baseline in one of two ways—over-compliance by the fleet of vehicles sold in California and the CAA section 177 States (*i.e.,* those States adopting the California program), or over-compliance with the fleet of vehicles sold in the 50 States. EPA is also providing for early credits based on over-compliance with CAFE, but only for vehicles sold in States outside of California and the CAA section 177 states. Under the early credit provisions, no early FFV credits would be allowed, except those achieved by over-compliance with the California program based on California's provisions that manufacturers demonstrate actual use of the alternative fuel. EPA's early credits provisions are designed to ensure that there would be no double counting of early credits. NHTSA notes, however, that credits for overcompliance with CAFE standards during MYs 2009–2011 will still be available for manufacturers to use toward compliance in future model years, just as before.

EPA received comments from some environmental organizations and States expressing concern that these early credits were inappropriate windfall credits because they provided credits for actions that were not surplus, that is above what would otherwise be required for compliance with either State or Federal motor vehicle standards. This focused on the credits

otherwise occur. This is typically referred to as an FFV credit.

[38] *Id.*

[39] EPCA does not permit such an allowance. Consequently, manufacturers who may be able to take advantage of a lead-time allowance under the GHG standards would be required to comply with the applicable CAFE standard or be subject to penalties for non-compliance.

for over-compliance with the California standards generated during model years 2009 and perhaps 2010, where according to commenters the CAFE requirements were in effect more stringent than the California standards. EPA believes that early credits provide a valuable incentive for manufacturers that have implemented fuel efficient technologies in excess of their CAFE compliance obligations prior to MY 2012. With appropriate restrictions, these credits, reflecting over-compliance over a three model year time frame (MY 2009–2011) and not just over one or two model years, will be surplus reductions and not otherwise required by law. Therefore, EPA is finalizing these provisions largely as proposed, but in response to comments, with an additional restriction on the trading of MY 2009 credits. The overall structure of this early credit program addresses concerns about the potential for windfall credits in the first one or two model years. This issue is fully discussed in Section III.C.

EPA is providing an additional temporary incentive to encourage the commercialization of advanced GHG/fuel economy control technologies—including electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs), and fuel cell vehicles (FCVs)—for model years 2012–2016. EPA's proposal included an emissions compliance value of zero grams/mile for EVs and FCVs, and the electric portion of PHEVs, and a multiplier in the range of 1.2 to 2.0, so that each advanced technology vehicle would count as greater than one vehicle in a manufacturer's fleetwide compliance calculation. EPA received many comments on the proposed incentives. Many State and environmental organization commenters believed that the combination of these incentives could undermine the GHG benefits of the rule, and believed the emissions compliance values should take into account the net upstream GHG emissions associated with electrified vehicles compared to vehicles powered by petroleum based fuel. Auto manufacturers generally supported the incentives, some believing the incentives to be a critical part of the National Program. Most auto makers supported both the zero grams/mile emissions compliance value and the higher multipliers.

Upon considering the public comments on this issue, EPA is finalizing an advanced technology vehicle incentive program that includes a zero gram/mile emissions compliance value for EVs and FCVs, and the electric portion of PHEVs, for up to the first 200,000 EV/PHEV/FCV vehicles produced by a given manufacturer during MY 2012–2016 (for a manufacturer that produces less than 25,000 EVs, PHEVs, and FCVs in MY 2012), or for up to the first 300,000 EV/PHEV/FCV vehicles produced during MY 2012–2016 (for a manufacturer that produces 25,000 or more EVs, PHEVs, and FCVs in MY 2012). For any production greater than this amount, the compliance value for the vehicle will be greater than zero gram/mile, set at a level that reflects the vehicle's net increase in upstream GHG emissions in comparison to the gasoline vehicle it replaces. In addition, EPA is not finalizing a multiplier. EPA will also allow this early advanced technology incentive program beginning in MYs 2009–2011. The purpose of these provisions is to provide a temporary incentive to promote technologies which have the potential to produce very large GHG reductions in the future. The tailpipe GHG emissions from EVs, FCVs, and PHEVs operated on grid electricity are zero, and traditionally the emissions of the vehicle itself are all that EPA takes into account for purposes of compliance with standards set under section 202(a). This has not raised any issues for criteria pollutants, as upstream emissions associated with production and distribution of the fuel are addressed by comprehensive regulatory programs focused on the upstream sources of those emissions. At this time, however, there is no such comprehensive program addressing upstream emissions of GHGs, and the upstream GHG emissions associated with production and distribution of electricity are higher than the corresponding upstream GHG emissions of gasoline or other petroleum based fuels. In the future, vehicle fleet electrification combined with advances in low-carbon technology in the electricity sector have the potential to transform the transportation sector's contribution to the country's GHG emissions. EPA will reassess the issue of how to address EVs, PHEVs, and FCVs in rulemakings for model years 2017 and beyond, based on the status of advanced vehicle technology commercialization, the status of upstream GHG control programs, and other relevant factors. Further discussion of the temporary advanced technology vehicle incentives, including more detail on the public comments and EPA's response, is found in Section III.C.

EPA is also providing an option for manufacturers to generate credits for employing new and innovative technologies that achieve GHG reductions that are not reflected on current test procedures, as proposed. Examples of such "off-cycle" technologies might include solar panels on hybrids, adaptive cruise control, and active aerodynamics, among other technologies. These three credit provisions are discussed in more detail in Section III.

5. Coordinated Compliance

Previous NHTSA and EPA regulations and statutory provisions establish ample examples on which to develop an effective compliance program that achieves the energy and environmental benefits from CAFE and motor vehicle GHG standards. NHTSA and EPA have developed a program that recognizes, and replicates as closely as possible, the compliance protocols associated with the existing CAA Tier 2 vehicle emission standards, and with CAFE standards. The certification, testing, reporting, and associated compliance activities closely track current practices and are thus familiar to manufacturers. EPA already oversees testing, collects and processes test data, and performs calculations to determine compliance with both CAFE and CAA standards. Under this coordinated approach, the compliance mechanisms for both programs are consistent and non-duplicative. EPA will also apply the CAA authorities applicable to its separate in-use requirements in this program.

The compliance approach allows manufacturers to satisfy the new program requirements in the same general way they comply with existing applicable CAA and CAFE requirements. Manufacturers would demonstrate compliance on a fleet-average basis at the end of each model year, allowing model-level testing to continue throughout the year as is the current practice for CAFE determinations. The compliance program design establishes a single set of manufacturer reporting requirements and relies on a single set of underlying data. This approach still allows each agency to assess compliance with its respective program under its respective statutory authority.

NHTSA and EPA do not anticipate any significant noncompliance under the National Program. However, failure to meet the fleet average standards (after credit opportunities are exhausted) would ultimately result in the potential for penalties under both EPCA and the CAA. The CAA allows EPA considerable discretion in assessment of penalties. Penalties under the CAA are typically determined on a vehicle-specific basis by determining the

number of a manufacturer's highest emitting vehicles that caused the fleet average standard violation. This is the same mechanism used for EPA's National Low Emission Vehicle and Tier 2 corporate average standards, and to date there have been no instances of noncompliance. CAFE penalties are specified by EPCA and would be assessed for the entire noncomplying fleet at a rate of $5.50 times the number of vehicles in the fleet, times the number of tenths of mpg by which the fleet average falls below the standard. In the event of a compliance action arising out of the same facts and circumstances, EPA could consider CAFE penalties when determining appropriate remedies for the EPA case.

Several stakeholders commented on the proposed coordinated compliance approach. The comments indicated broad support for the overall approach EPA proposed. In particular, both regulated industry and the public interest community appreciated the attempt to streamline compliance by adopting current practice where possible and by coordinating EPA and NHTSA compliance requirements. Thus the final compliance program design is largely unchanged from the proposal. Some commenters requested additional detail or clarification in certain areas and others suggested some relatively narrow technical changes, and EPA has responded to these suggestions. EPA and NHTSA summarize these comments and the agencies' responses in Sections III and IV, respectively, below. The Response to Comments document associated with this document includes all of the comments and responses received during the comment period.

C. Summary of Costs and Benefits of the National Program

This section summarizes the projected costs and benefits of the CAFE and GHG emissions standards. These projections helped inform the agencies' choices among the alternatives considered and provide further confirmation that the final standards are an appropriate choice within the spectrum of choices allowable under their respective statutory criteria. The costs and benefits projected by NHTSA to result from these CAFE standards are presented first, followed by those from EPA's analysis of the GHG emissions standards.

For several reasons, the estimates for costs and benefits presented by NHTSA and EPA, while consistent, are not directly comparable, and thus should not be expected to be identical. Most important, NHTSA and EPA's standards would require slightly different fuel efficiency improvements. EPA's GHG standard is more stringent in part due to its assumptions about manufacturers' use of air conditioning credits, which result from reductions in air conditioning-related emissions of HFCs and CO_2. NHTSA was unable to make assumptions about manufacturers' improving the efficiency of air conditioners due to statutory limitations. In addition, the CAFE and GHG standards offer different program flexibilities, and the agencies' analyses differ in their accounting for these flexibilities (for example, FFVs), primarily because NHTSA is statutorily prohibited from considering some flexibilities when establishing CAFE standards, while EPA is not. These differences contribute to differences in the agencies' respective estimates of costs and benefits resulting from the new standards.

NHTSA performed two analyses: a primary analysis that shows the estimates of costs, fuel savings, and related benefits that the agency considered for purposes of establishing new CAFE standards, and a supplemental analysis that reflects the agency's best estimate of the potential real-world effects of the CAFE standards, including manufacturers' potential use of FFV credits in accordance with the provisions of EISA concerning their availability. Because EPCA prohibits NHTSA from considering the ability of manufacturers to use of FFV credits to increase their fleet average fuel economy when *establishing* CAFE standards, the agency's primary analysis does not include them. However, EPCA does not prohibit NHTSA from considering the fact that manufacturers may pay civil penalties rather than complying with CAFE standards, and NHTSA's primary analysis accounts for some manufacturers' tendency to do so. In addition, NHTSA's supplemental analysis of the effect of FFV credits on benefits and costs from its CAFE standards, demonstrates the real-world impacts of FFVs, and the summary estimates presented in Section IV include these effects. Including the use of FFV credits reduces estimated per-vehicle compliance costs of the program. However, as shown below, including FFV credits does not significantly change the projected fuel savings and CO_2 reductions, because FFV credits reduce the fuel economy levels that manufacturers achieve not only under the standards, but also under the baseline MY 2011 CAFE standards.

Also, EPCA, as amended by EISA, allows manufacturers to transfer credits between their passenger car and light truck fleets. However, EPCA also prohibits NHTSA from considering manufacturers' ability to increase their average fuel economy through the use of CAFE credits when determining the stringency of the CAFE standards. Because of this prohibition, NHTSA's primary analysis does not account for the extent to which credit transfers might actually occur. For purposes of its supplemental analysis, NHTSA considered accounting for the possibility that some manufacturers might utilize the opportunity under EPCA to transfer some CAFE credits between the passenger car and light truck fleets, but determined that in NHTSA's year-by-year analysis, manufacturers' credit transfers cannot be reasonably estimated at this time.[40]

EPA made explicit assumptions about manufacturers' use of FFV credits under both the baseline and control alternatives, and its estimates of costs and benefits from the GHG standards reflect these assumptions. However, under the GHG standards, FFV credits would be available through MY 2015; starting in MY 2016, EPA will only allow FFV credits based on a manufacturer's demonstration that the alternative fuel is actually being used in the vehicles and the actual GHG performance for the vehicle run on that alternative fuel.

EPA's analysis also assumes that manufacturers would transfer credits between their car and truck fleets in the MY 2011 baseline subject to the maximum value allowed by EPCA, and that unlimited car-truck credit transfers would occur under the GHG standards. Including these assumptions in EPA's analysis increases the resulting estimates of fuel savings and reductions in GHG emissions, while reducing EPA's estimates of program compliance costs.

Finally, under the EPA GHG program, there is no ability for a manufacturer to intentionally pay fines in lieu of meeting the standard. Under EPCA, however, vehicle manufacturers are allowed to pay fines as an alternative to compliance with applicable CAFE standards. NHTSA's analysis explicitly estimates the level of voluntary fine payment by individual manufacturers, which reduces NHTSA's estimates of

[40] NHTSA's analysis estimates multi-year planning effects within a context in which each model year is represented explicitly, and technologies applied in one model year carry forward to future model years. NHTSA does not currently have a reasonable basis to estimate how a manufacturer might, for example, weigh the transfer of credits from the passenger car to the light truck fleet in MY 2013 against the potential to carry light truck technologies forward from MY 2013 through MY 2016.

both the costs and benefits of its CAFE standards. In contrast, the CAA does not allow for fine payment (civil penalties) in lieu of compliance with emission standards, and EPA's analysis of benefits from its standard thus assumes full compliance. This assumption results in higher estimates of fuel savings, of reductions in GHG emissions, and of manufacturers' compliance costs to sell fleets that comply with both NHTSA's CAFE program and EPA's GHG program.

In summary, the projected costs and benefits presented by NHTSA and EPA are not directly comparable, because the GHG emission levels established by EPA include air conditioning-related improvements in equivalent fuel efficiency and HFC reductions, because of the assumptions incorporated in EPA's analysis regarding car-truck credit transfers, and because of EPA's projection of complete compliance with the GHG standards. It should also be expected that overall, EPA's estimates of GHG reductions and fuel savings achieved by the GHG standards will be slightly higher than those projected by NHTSA only for the CAFE standards because of the reasons described above. For the same reasons, EPA's estimates of manufacturers' costs for complying with the passenger car and light trucks GHG standards are slightly higher than NHTSA's estimates for complying with the CAFE standards.

A number of stakeholders commented on NHTSA's and EPA's analytical assumptions in estimating costs and benefits of the program. These comments and any changes from the proposed values are summarized in Section II.F, and further in Sections III (for EPA) and IV (for NHTSA); the Response to Comments document presents the detailed responses to each of the comments.

1. Summary of Costs and Benefits of NHTSA's CAFE Standards

NHTSA has analyzed in detail the costs and benefits of the final CAFE standards. Table I.C.1–1 presents the total costs, benefits, and net benefits for NHTSA's final CAFE standards. The values in Table I.C.1–1 display the total costs for all MY 2012–2016 vehicles and the benefits and net benefits represent the impacts of the standards over the full lifetime of the vehicles projected to be sold during model years 2012–2016. It is important to note that there is significant overlap in costs and benefits for NHTSA's CAFE program and EPA's GHG program and therefore combined program costs and benefits, which together comprise the National Program, are not a sum of the two individual programs.

TABLE I.C.1–1—NHTSA'S ESTIMATED 2012–2016 MODEL YEAR COSTS, BENEFITS, AND NET BENEFITS UNDER THE CAFE STANDARDS BEFORE FFV CREDITS

[2007 dollars]

3% Discount Rate:	$billions
Costs	51.8
Benefits	182.5
Net Benefits	130.7
7% Discount Rate:	
Costs	51.8
Benefits	146.3
Net Benefits	94.5

NHTSA estimates that these new CAFE standards will lead to fuel savings totaling 61 billion gallons throughout the useful lives of vehicles sold in MYs 2012–2016. At a 3% discount rate, the present value of the economic benefits resulting from those fuel savings is $143 billion. At a 7% discount rate, the present value of the economic benefits resulting from those fuel savings is $112 billion.[41]

The agency further estimates that these new CAFE standards will lead to corresponding reductions in CO_2 emissions totaling 655 million metric tons (mmt) during the useful lives of vehicles sold in MYs 2012–2016. The present value of the economic benefits from avoiding those emissions is $14.5 billion, based on a global social cost of carbon value of approximately $21 per metric ton (in 2010, and growing thereafter).[42] It is important to note that NHTSA's CAFE standards and EPA's GHG standards will both be in effect, and each will lead to increases in average fuel economy and CO_2 emissions reductions. The two agencies' standards together comprise the National Program, and this discussion of costs and benefits of NHTSA's CAFE standards does not change the fact that both the CAFE and GHG standards, jointly, are the source of the benefits and costs of the National Program.

TABLE I.C.1–2—NHTSA FUEL SAVED (BILLION GALLONS) AND CO_2 EMISSIONS AVOIDED (mmt) UNDER CAFE STANDARDS (WITHOUT FFV CREDITS)

	2012	2013	2014	2015	2016	Total
Fuel (b. gal.)	4.2	8.9	12.5	16.0	19.5	61.0
CO_2 (mmt)	44	94	134	172	210	655

Considering manufacturers' ability to earn credit toward compliance by selling FFVs, NHTSA estimates very little change in incremental fuel savings and avoided CO_2 emissions, assuming FFV credits would be used toward both the baseline and final standards:

TABLE I.C.1–3—NHTSA FUEL SAVED (BILLION GALLONS) AND CO_2 EMISSIONS AVOIDED (MILLION METRIC TONS, MMT) UNDER CAFE STANDARDS (WITH FFV CREDITS)

	2012	2013	2014	2015	2016	Total
Fuel (b. gal.)	4.9	8.2	11.3	15.0	19.1	58.6

[41] These figures do not account for the compliance flexibilities that NHTSA is prohibited from considering when determining the level of new CAFE standards, because manufacturers' decisions to use those flexibilities are voluntary.

[42] NHTSA also estimated the benefits associated with three more estimates of a one ton GHG reduction in 2010 ($5, $35, and $65), which will likewise grow thereafter. *See* Section II for a more detailed discussion of the social cost of carbon.

TABLE I.C.1–3—NHTSA FUEL SAVED (BILLION GALLONS) AND CO_2 EMISSIONS AVOIDED (MILLION METRIC TONS, MMT) UNDER CAFE STANDARDS (WITH FFV CREDITS)—Continued

	2012	2013	2014	2015	2016	Total
CO_2 (mmt)	53	89	123	163	208	636

NHTSA estimates that these fuel economy increases would produce other benefits both to drivers (*e.g.,* reduced time spent refueling) and to the U.S. (*e.g.,* reductions in the costs of petroleum imports *beyond* the direct savings from reduced oil purchases, as well as some disbenefits (*e.g.,* increase traffic congestion) caused by drivers' tendency to travel more when the cost of driving declines (as it does when fuel economy increases). NHTSA has estimated the total monetary value to society of these benefits and disbenefits, and estimates that the standards will produce significant net benefits to society. Using a 3% discount rate, NHTSA estimates that the present value of these benefits would total more than $180 billion over the useful lives of vehicles sold during MYs 2012–2016. More discussion regarding monetized benefits can be found in Section IV of this notice and in NHTSA's Regulatory Impact Analysis. Note that the benefit calculation in Tables I.C.1–4 through 1–7 includes the benefits of reducing CO_2 emissions,[43] but not the benefits of reducing other GHG emissions.

TABLE I.C.1–4—NHTSA DISCOUNTED BENEFITS ($BILLION) UNDER THE CAFE STANDARDS (BEFORE FFV CREDITS, USING 3 PERCENT DISCOUNT RATE)

	2012	2013	2014	2015	2016	Total
Passenger Cars	6.8	15.2	21.6	28.7	35.2	107.5
Light Trucks	5.1	10.7	15.5	19.4	24.3	75.0
Combined	11.9	25.8	37.1	48.0	59.5	182.5

Using a 7% discount rate, NHTSA estimates that the present value of these benefits would total more than $145 billion over the same time period.

TABLE I.C.1–5—NHTSA DISCOUNTED BENEFITS ($BILLION) UNDER THE CAFE STANDARDS (BEFORE FFV CREDITS, USING 7 PERCENT DISCOUNT RATE)

	2012	2013	2014	2015	2016	Total
Passenger Cars	5.5	12.3	17.5	23.2	28.6	87.0
Light Trucks	4.0	8.4	12.2	15.3	19.2	59.2
Combined	9.5	20.7	29.7	38.5	47.8	146.2

NHTSA estimates that FFV credits could reduce achieved benefits by about 3.8%:

TABLE I.C.1–6A—NHTSA DISCOUNTED BENEFITS ($BILLION) UNDER THE CAFE STANDARDS (WITH FFV CREDITS, USING A 3 PERCENT DISCOUNT RATE)

	2012	2013	2014	2015	2016	Total
Passenger Cars	7.6	13.7	19.1	25.6	34.0	100.0
Light Trucks	6.4	10.4	14.6	19.8	24.4	75.6
Combined	14.0	24.1	33.7	45.4	58.4	175.6

TABLE I.C.1–6B—NHTSA DISCOUNTED BENEFITS ($BILLION) UNDER THE CAFE STANDARDS (WITH FFV CREDITS, USING A 7 PERCENT DISCOUNT RATE)

	2012	2013	2014	2015	2016	Total
Passenger Cars	6.1	11.1	15.5	20.7	27.6	80.9
Light Trucks	5.0	8.2	11.5	15.6	19.3	59.7

[43] CO_2 benefits for purposes of these tables are calculated using the $21/ton SCC values. Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, and 2.5 percent) is used to calculate net present value of SCC for internal consistency.

TABLE I.C.1–6B—NHTSA DISCOUNTED BENEFITS ($BILLION) UNDER THE CAFE STANDARDS (WITH FFV CREDITS, USING A 7 PERCENT DISCOUNT RATE)—Continued

	2012	2013	2014	2015	2016	Total
Combined	11.2	19.3	27.0	36.4	46.9	140.7

NHTSA attributes most of these benefits—about $143 billion (at a 3% discount rate and excluding consideration of FFV credits), as noted above—to reductions in fuel consumption, valuing fuel (for societal purposes) at the future pre-tax prices projected in the Energy Information Administration's (AEO's) reference case forecast from the Annual Energy Outlook (AEO) 2010 Early Release. NHTSA's Final Regulatory Impact Analysis (FRIA) accompanying this rule presents a detailed analysis of specific benefits of the rule.

TABLE I.C.1–7—SUMMARY OF BENEFITS FUEL SAVINGS AND CO_2 EMISSIONS REDUCTION DUE TO THE RULE (BEFORE FFV CREDITS)

	Amount	Monetized value (discounted)	
		3% discount rate	7% discount rate
Fuel savings	61.0 billion gallons	$143.0 billion	$112.0 billion.
CO_2 emissions reductions	655 mmt	$14.5 billion	$14.5 billion.

NHTSA estimates that the increases in technology application necessary to achieve the projected improvements in fuel economy will entail considerable monetary outlays. The agency estimates that incremental costs for achieving its standards—that is, outlays by vehicle manufacturers over and above those required to comply with the MY 2011 CAFE standards—will total about $52 billion (*i.e.,* during MYs 2012–2016).

TABLE I.C.1–8—NHTSA INCREMENTAL TECHNOLOGY OUTLAYS ($BILLION) UNDER THE CAFE STANDARDS (BEFORE FFV CREDITS)

	2012	2013	2014	2015	2016	Total
Passenger Cars	4.1	5.4	6.9	8.2	9.5	34.2
Light Trucks	1.8	2.5	3.7	4.3	5.4	17.6
Combined	5.9	7.9	10.5	12.5	14.9	51.7

NHTSA estimates that use of FFV credits could significantly reduce these outlays:

TABLE I.C.1–9—NHTSA INCREMENTAL TECHNOLOGY OUTLAYS ($BILLION) UNDER CAFE STANDARDS (WITH FFV CREDITS)

	2012	2013	2014	2015	2016	Total
Passenger Cars	2.6	3.6	4.8	6.1	7.5	24.6
Light Trucks	1.1	1.5	2.5	3.4	4.4	12.9
Combined	3.7	5.1	7.3	9.5	11.9	37.5

The agency projects that manufacturers will recover most or all of these additional costs through higher selling prices for new cars and light trucks. To allow manufacturers to recover these increased outlays (and, to a much lesser extent, the civil penalties that some companies are expected to pay for noncompliance), the agency estimates that the standards would lead to increases in average new vehicle prices ranging from $457 per vehicle in MY 2012 to $985 per vehicle in MY 2016:

TABLE I.C.1–10—NHTSA INCREMENTAL INCREASES IN AVERAGE NEW VEHICLE COSTS ($) UNDER CAFE STANDARDS (BEFORE FFV CREDITS)

	2012	2013	2014	2015	2016
Passenger Cars	505	573	690	799	907
Light Trucks	322	416	621	752	961

TABLE I.C.1–10—NHTSA INCREMENTAL INCREASES IN AVERAGE NEW VEHICLE COSTS ($) UNDER CAFE STANDARDS (BEFORE FFV CREDITS)—Continued

	2012	2013	2014	2015	2016
Combined	434	513	665	782	926

NHTSA estimates that use of FFV credits could significantly reduce these costs, especially in earlier model years:

TABLE I.C.1–11—NHTSA INCREMENTAL INCREASES IN AVERAGE NEW VEHICLE COSTS ($) UNDER CAFE STANDARDS (WITH FFV CREDITS)

	2012	2013	2014	2015	2016
Passenger Cars	303	378	481	593	713
Light Trucks	194	260	419	581	784
Combined	261	333	458	589	737

NHTSA estimates, therefore, that the total benefits of these CAFE standards will be more than three times the magnitude of the corresponding costs. As a consequence, its standards would produce net benefits of $130.7 billion at a 3 percent discount rate (with FFV credits, $138.2 billion) or $94.5 billion at a 7 percent discount rate over the useful lives of vehicles sold during MYs 2012–2016.

2. Summary of Costs and Benefits of EPA's GHG Standards

EPA has analyzed in detail the costs and benefits of the final GHG standards. Table I.C.2–1 shows EPA's estimated lifetime discounted cost, benefits and net benefits for all vehicles projected to be sold in model years 2012–2016. It is important to note that there is significant overlap in costs and benefits for NHTSA's CAFE program and EPA's GHG program and therefore combined program costs and benefits are not a sum of the individual programs.

TABLE I.C.2–1—EPA'S ESTIMATED 2012–2016 MODEL YEAR LIFETIME DISCOUNTED COSTS, BENEFITS, AND NET BENEFITS ASSUMING THE $21/TON SCC VALUE [a b c d]

[2007 dollars]

3% Discount rate	$Billions
Costs	51.5
Benefits	240
Net Benefits	189
7% Discount rate	
Costs	51.5
Benefits	192
Net Benefits	140

[a] Although EPA estimated the benefits associated with four different values of a one ton GHG reduction ($5, $21, $35, $65), for the purposes of this overview presentation of estimated costs and benefits EPA is showing the benefits associated with the marginal value deemed to be central by the interagency working group on this topic: $21 per ton of CO2e, in 2007 dollars and 2010 emissions. The $21/ton value applies to 2010 CO_2 emissions and grows over time.

[b] As noted in Section III.H, SCC increases over time. The $21/ton value applies to 2010 CO_2 emissions and grows larger over time.

[c] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, and 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to Section III.H for more detail.

[d] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

Table I.C.2–2 shows EPA's estimated lifetime fuel savings and CO_2 equivalent emission reductions for all vehicles sold in the model years 2012–2016. The values in Table I.C.2–2 are projected lifetime totals for each model year and are not discounted. As documented in EPA's Final RIA, the potential credit transfer between cars and trucks may change the distribution of the fuel savings and GHG emission impacts between cars and trucks. As discussed above with respect to NHTSA's CAFE standards, it is important to note that NHTSA's CAFE standards and EPA's GHG standards will both be in effect, and each will lead to increases in average fuel economy and reductions in CO_2 emissions. The two agencies' standards together comprise the National Program, and this discussion of costs and benefits of EPA's GHG standards does not change the fact that both the CAFE and GHG standards, jointly, are the source of the benefits and costs of the National Program.

TABLE I.C.2–2—EPA'S ESTIMATED 2012–2016 MODEL YEAR LIFETIME FUEL SAVED AND GHG EMISSIONS AVOIDED

		2012	2013	2014	2015	2016	Total
Cars	Fuel (billion gallons)	4.0	5.5	7.3	10.5	14.3	41.6
	Fuel (billion barrels)	0.10	0.13	0.17	0.25	0.34	0.99
	CO_2 EQ (mmt)	49.3	68.5	92.7	134	177	521

TABLE I.C.2–2—EPA'S ESTIMATED 2012–2016 MODEL YEAR LIFETIME FUEL SAVED AND GHG EMISSIONS AVOIDED—Continued

		2012	2013	2014	2015	2016	Total
Light Trucks	Fuel (billion gallons)	3.3	5.0	6.6	9.0	12.2	36.1
	Fuel (billion barrels)	0.08	0.12	0.16	0.21	0.29	0.86
	CO_2 EQ (mmt)	39.6	61.7	81.6	111	147	441
Combined	Fuel (billion gallons)	7.3	10.5	13.9	19.5	26.5	77.7
	Fuel (billion barrels)	0.17	0.25	0.33	0.46	0.63	1.85
	CO_2 EQ (mmt)	88.8	130	174	244	325	962

Table I.C.2–3 shows EPA's estimated lifetime discounted benefits for all vehicles sold in model years 2012–2016. Although EPA estimated the benefits associated with four different values of a one ton GHG reduction ($5, $21, $35, $65), for the purposes of this overview presentation of estimated benefits EPA is showing the benefits associated with one of these marginal values, $21 per ton of CO_2, in 2007 dollars and 2010 emissions. Table I.C.2–3 presents benefits based on the $21 value. Section III.H presents the four marginal values used to estimate monetized benefits of GHG reductions and Section III.H presents the program benefits using each of the four marginal values, which represent only a partial accounting of total benefits due to omitted climate change impacts and other factors that are not readily monetized. The values in the table are discounted values for each model year of vehicles throughout their projected lifetimes. The benefits include all benefits considered by EPA such as fuel savings, GHG reductions, PM benefits, energy security and other externalities such as reduced refueling and accidents, congestion and noise. The lifetime discounted benefits are shown for one of four different social cost of carbon (SCC) values considered by EPA. The values in Table I.C.2–3 do not include costs associated with new technology required to meet the GHG standard.

TABLE I.C.2–3—EPA'S ESTIMATED 2012–2016 MODEL YEAR LIFETIME DISCOUNTED BENEFITS ASSUMING THE $21/TON SCC VALUE [a b c]

[Billions of 2007 dollars]

Discount rate	Model year					
	2012	2013	2014	2015	2016	Total
3%	$21.8	$32.0	$42.8	$60.8	$83.3	$240
7%	17.4	25.7	34.2	48.6	66.4	192

[a] The benefits include all benefits considered by EPA such as the economic value of reduced fuel consumption and accompanying savings in refueling time, climate-related economic benefits from reducing emissions of CO_2 (but not other GHGs), economic benefits from reducing emissions of PM and other air pollutants that contribute to its formation, and reductions in energy security externalities caused by U.S. petroleum consumption and imports. The analysis also includes disbenefits stemming from additional vehicle use, such as the economic damages caused by accidents, congestion and noise.

[b] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, and 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to Section III.H for more detail.

[c] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses. Also, as noted in Section III.H, SCC increases over time. The $21/ton value applies to 2010 emissions and grows larger over time.

Table I.C.2–4 shows EPA's estimated lifetime fuel savings, lifetime CO_2 emission reductions, and the monetized net present values of those fuel savings and CO_2 emission reductions. The gallons of fuel and CO_2 emission reductions are projected lifetime values for all vehicles sold in the model years 2012–2016. The estimated fuel savings in billions of barrels and the GHG reductions in million metric tons of CO_2 shown in Table I.C.2–4 are totals for the five model years throughout their projected lifetime and are not discounted. The monetized values shown in Table I.C.2–4 are the summed values of the discounted monetized-fuel savings and monetized-CO_2 reductions for the five model years 2012–2016 throughout their lifetimes. The monetized values in Table I.C.2–4 reflect both a 3 percent and a 7 percent discount rate as noted.

TABLE I.C.2–4—EPA'S ESTIMATED 2012–2016 MODEL YEAR LIFETIME FUEL SAVINGS, CO_2 EMISSION REDUCTIONS, AND DISCOUNTED MONETIZED BENEFITS AT A 3% DISCOUNT RATE

[Monetized values in 2007 dollars]

	Amount	$ value (billions)
Fuel savings	1.8 billion barrels	$182, 3% discount rate. $142, 7% discount rate.

TABLE I.C.2–4—EPA'S ESTIMATED 2012–2016 MODEL YEAR LIFETIME FUEL SAVINGS, CO_2 EMISSION REDUCTIONS, AND DISCOUNTED MONETIZED BENEFITS AT A 3% DISCOUNT RATE—Continued

[Monetized values in 2007 dollars]

	Amount	$ value (billions)
CO_{2e} emission reductions (CO_2 portion valued assuming $21/ton CO_2 in 2010).	962 MMT CO_{2e}	$17 [a b].

[a] $17 billion for 858 MMT of reduced CO_2 emissions. As noted in Section III.H, the $21/ton value applies to 2010 emissions and grows larger over time. Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[b] Note that net present value of reduced CO_2 emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, and 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to Section III.H for more detail.

Table I.C.2–5 shows EPA's estimated incremental and total technology outlays for cars and trucks for each of the model years 2012–2016. The technology outlays shown in Table I.C.2–5 are for the industry as a whole and do not account for fuel savings associated with the program.

TABLE I.C.2–5—EPA'S ESTIMATED INCREMENTAL TECHNOLOGY OUTLAYS

[Billions of 2007 dollars]

	2012	2013	2014	2015	2016	Total
Cars	$3.1	$5.0	$6.5	$8.0	$9.4	$31.9
Trucks	1.8	3.0	3.9	4.8	6.2	19.7
Combined	4.9	8.0	10.3	12.7	15.6	51.5

Table I.C.2–6 shows EPA's estimated incremental cost increase of the average new vehicle for each model year 2012–2016. The values shown are incremental to a baseline vehicle and are not cumulative. In other words, the estimated increase for 2012 model year cars is $342 relative to a 2012 model year car absent the National Program. The estimated increase for a 2013 model year car is $507 relative to a 2013 model year car absent the National Program (not $342 plus $507).

TABLE I.C.2–6—EPA'S ESTIMATED INCREMENTAL INCREASE IN AVERAGE NEW VEHICLE COST

[2007 dollars per unit]

	2012	2013	2014	2015	2016
Cars	$342	$507	$631	$749	$869
Trucks	314	496	652	820	1,098
Combined	331	503	639	774	948

D. Background and Comparison of NHTSA and EPA Statutory Authority

Section I.C of the proposal contained a detailed overview discussion of the NHTSA and EPA statutory authorities. In addition to the discussion in the proposal, each agency discusses comments pertaining to its statutory authority and the agency's responses in Sections III and IV of this notice, respectively.

II. Joint Technical Work Completed for This Final Rule

A. Introduction

In this section NHTSA and EPA discuss several aspects of the joint technical analyses on which the two agencies collaborated. These analyses are common to the development of each agency's final standards. Specifically we discuss: the development of the vehicle market forecast used by each agency for assessing costs, benefits, and effects, the development of the attribute-based standard curve shapes, the determination of the relative stringency between the car and truck fleet standards, the technologies the agencies evaluated and their costs and effectiveness, and the economic assumptions the agencies included in their analyses. The Joint Technical Support Document (TSD) discusses the agencies' joint technical work in more detail.

B. Developing the Future Fleet for Assessing Costs, Benefits, and Effects

1. Why did the agencies establish a baseline and reference vehicle fleet?

In order to calculate the impacts of the EPA and NHTSA regulations, it is necessary to estimate the composition of the future vehicle fleet absent these regulations, to provide a reference point relative to which costs, benefits, and effects of the regulations are assessed. As in the proposal, EPA and NHTSA have developed this comparison fleet in two parts. The first step was to develop a baseline fleet based on model year 2008 data. The second step was to project that fleet into model years 2011–2016. This is called the reference fleet.

The third step was to modify that MY 2011–2016 reference fleet such that it had sufficient technology to meet the MY 2011 CAFE standards. This final version of the reference fleet is the light-duty fleet estimated to exist in MY 2012–2016 in the absence of today's standards, based on the assumption that manufacturers would continue to meet the MY 2011 CAFE standards (or pay civil penalties allowed under EPCA [44]) in the absence of further increases in the stringency of CAFE standards. Each agency used this approach to develop a final reference fleet to use in its modeling. All of the agencies' estimates of emission reductions, fuel economy improvements, costs, and societal impacts are developed in relation to the respective reference fleets.

EPA and NHTSA proposed a transparent approach to developing the baseline and reference fleets, largely working from publicly available data. This proposed approach differed from previous CAFE rules, which relied on confidential manufacturers' product plan information to develop the baseline. Most of the public comments to the NPRM addressing this issue supported this methodology for developing the inputs to the rule's analysis. Because the input sheets can be made public, stakeholders can verify and check EPA's and NHTSA's modeling, and perform their own analyses with these datasets. In this final rulemaking, EPA and NHTSA are using an approach very similar to that proposed, continuing to rely on publicly available data as the basis for the baseline and reference fleets.

2. How did the agencies develop the baseline vehicle fleet?

At proposal, EPA and NHTSA developed a baseline fleet comprised of model year 2008 data gathered from EPA's emission certification and fuel economy database. MY 2008 was used as the basis for the baseline vehicle fleet because it was the most recent model year for which a complete set of data is publicly available. This remains the case. Manufacturers are not required to submit final sales and mpg figures for MY 2009 until April 2010,[45] after the CAFE standard's mandated promulgation date. Consequently, in this final rule, EPA and NHTSA made no changes to the method or the results of the MY 2008 baseline fleet used at proposal, except for some specific corrections to engineering inputs for some vehicle models reflected in the market forecast input to NHTSA's CAFE model. More details about how the agencies constructed this baseline fleet can be found in Chapter 1.2 of the Joint TSD. Corrections to engineering inputs for some vehicle models in the market forecast input to NHTSA's CAFE model are discussed in Chapter 2 of the Joint TSD.

3. How did the agencies develop the projected MY 2011–2016 vehicle fleet?

EPA and NHTSA have based the projection of total car and total light truck sales for MYs 2011–2016 on projections made by the Department of Energy's Energy Information Administration (EIA). EIA publishes a mid-term projection of national energy use called the Annual Energy Outlook (AEO). This projection utilizes a number of technical and econometric models which are designed to reflect both economic and regulatory conditions expected to exist in the future. In support of its projection of fuel use by light-duty vehicles, EIA projects sales of new cars and light trucks. In the proposal, the agencies used the three reports published by EIA as part of the AEO 2009. We also stated that updated versions of these reports could be used in the final rules should AEO timely issue a new version. EIA published an early version of its AEO 2010 in December 2009, and the agencies are making use of it in this final rulemaking. The differences in projected sales in the 2009 report (used in the NPRM) and the early 2010 report are very small, so NHTSA and EPA have decided to simply scale the NPRM volumes for cars and trucks (in the aggregate) to match those in the 2010 report. We thus employ the sales projections from the scaled updated 2009 Annual Energy Outlook, which is equivalent to AEO 2010 Early Release, for the final rule. The scaling factors for each model year are presented in Chapter 1 of the Joint TSD for this final rule.

The agencies recognize that AEO 2010 Early Release does include some impacts of future projected increases in CAFE stringency. We have closely examined the difference between AEO 2009 and AEO 2010 Early Release and we believe the differences in total sales and the car/truck split attributed to considerations of the standard in the final rule are small.[46]

In the AEO 2010 Early Release, EIA projects that total light-duty vehicle sales will gradually recover from their currently depressed levels by around 2013. In 2016, car sales are projected to be 9.4 million (57 percent) and truck sales are projected to be 7.1 million (43 percent). Although the total level of sales of 16.5 million units is similar to pre-2008 levels, the fraction of car sales is projected to be higher than that existing in the 2000–2007 timeframe. This projection reflects the impact of higher fuel prices, as well as EISA's requirement that the new vehicle fleet average at least 35 mpg by MY 2020. The agencies note that AEO does not represent the fleet at a level of detail sufficient to explicitly account for the reclassification—promulgated as part of NHTSA's final rule for MY 2011 CAFE standards—of a number of 2-wheel drive sport utility vehicles from the truck fleet to the car fleet for MYs 2011 and after. Sales projections of cars and trucks for future model years can be found in the Joint TSD for these final rules.

In addition to a shift towards more car sales, sales of segments within both the car and truck markets have been changing and are expected to continue to change. Manufacturers are introducing more crossover models which offer much of the utility of SUVs but use more car-like designs. The AEO 2010 report does not, however, distinguish such changes within the car and truck classes. In order to reflect these changes in fleet makeup, EPA and NHTSA considered several other available forecasts. EPA purchased and shared with NHTSA forecasts from two well-known industry analysts, CSM Worldwide (CSM), and J.D. Powers. NHTSA and EPA decided to use the forecast from CSM, modified as described below, for several reasons presented in the NPRM preamble [47] and draft Joint TSD. The changes between company market share and industry market segments were most significant from 2011–2014, while for 2014–2015 the changes were relatively small. Noting this, and lacking a credible forecast of company and segment shares after 2015, the agencies assumed 2016 market share and market segments to be the same as for 2015.

[44] That is, the manufacturers who have traditionally paid fines under EPCA instead of complying with the CAFE standards were "allowed," for purposes of the reference fleet, to reach only the CAFE level at which paying fines became more cost-effective than adding technology, even if that fell short of the MY 2011 standards.

[45] 40 CFR 600.512–08, Model Year Report.

[46] The agencies have also looked at the impact of the rule in EIA's projection, and concluded that the impact was small. EPA and NHTSA have evaluated the differences between the AEO 2010 (early draft) and AEO 2009 and found little difference in the fleet projections (or fuel prices). This analysis can be found in the memo to the docket: Kahan, A. and Pickrell, D. Memo to Docket EPA–HQ–OAR–2009–0472 and Docket NHTSA–2009–0059. "Energy Information Administration's Annual Energy Outlook 2009 and 2010." March 24, 2010.

[47] See, *e.g.,* 74 FR 49484.

CSM Worldwide provides quarterly sales forecasts for the automotive industry. In the NPRM, the agencies identified a concern with the 2nd quarter CSM forecast that was used as a basis for the projection. CSM projections at that time were based on an industry that was going through a significant financial transition, and as a result the market share forecasts for some companies were impacted in surprising ways. As the industry's situation has settled somewhat over the past year, the 4th quarter projection appears to address this issue—for example, it shows nearly a two-fold increase in sales for Chrysler compared to significant loss of market share shown for Chrysler in the 2nd quarter projection. Additionally, some commenters, such as GM, recognized that the fleet appeared to include an unusually high number of large pickup trucks.[48] In fact, the agencies discovered (independently of the comments) that CSM's standard forecast included all vehicles below 14,000 GVWR, including class 2b and 3 heavy duty vehicles, which are not regulated by this final rule.[49] The commenters were thus correct that light duty reference fleet projections at proposal had more full size trucks and vans due to the mistaken inclusion of the heavy duty versions of those vehicles. The agencies requested a separate data forecast from CSM that filtered their 4th quarter projection to exclude these heavy duty vehicles. The agencies then used this filtered 4th quarter forecast for the final rule. A detailed comparison of the market by manufacturer can be found in the final TSD. For the public's reference, copies of the 2nd, 3rd, and 4th quarter CSM forecasts have been placed in the docket for this rulemaking.[50]

We then projected the CSM forecasts for relative sales of cars and trucks by manufacturer and by market segment onto the total sales estimates of AEO 2010. Tables II.B.3–1 and II.B.3–2 show the resulting projections for the reference 2016 model year and compare these to actual sales that occurred in baseline 2008 model year. Both tables show sales using the traditional definition of cars and light trucks.

TABLE II.B.3–1—ANNUAL SALES OF LIGHT-DUTY VEHICLES BY MANUFACTURER IN 2008 AND ESTIMATED FOR 2016

	Cars		Light trucks		Total	
	2008 MY	2016 MY	2008 MY	2016 MY	2008 MY	2016 MY
BMW	291,796	424,923	61,324	171,560	353,120	596,482
Chrysler	537,808	340,908	1,119,397	525,128	1,657,205	866,037
Daimler	208,052	272,252	79,135	126,880	287,187	399,133
Ford	709,583	1,118,727	1,158,805	1,363,256	1,868,388	2,481,983
General Motors	1,370,280	1,283,937	1,749,227	1,585,828	3,119,507	2,869,766
Honda	899,498	811,214	612,281	671,437	1,511,779	1,482,651
Hyundai	270,293	401,372	120,734	211,996	391,027	613,368
Kia	145,863	455,643	135,589	210,717	281,452	666,360
Mazda	191,326	350,055	111,220	144,992	302,546	495,047
Mitsubishi	76,701	49,914	24,028	88,754	100,729	138,668
Porsche	18,909	33,471	18,797	16,749	37,706	50,220
Nissan	653,121	876,677	370,294	457,114	1,023,415	1,333,790
Subaru	149,370	230,705	49,211	95,054	198,581	325,760
Suzuki	68,720	97,466	45,938	26,108	114,658	123,574
Tata	9,596	65,806	55,584	42,695	65,180	108,501
Toyota	1,143,696	2,069,283	1,067,804	1,249,719	2,211,500	3,319,002
Volkswagen	290,385	586,011	26,999	124,703	317,384	710,011
Total	7,034,997	9,468,365	6,806,367	7,112,689	13,841,364	16,580,353

TABLE II.B.3–2—ANNUAL SALES OF LIGHT-DUTY VEHICLES BY MARKET SEGMENT IN 2008 AND ESTIMATED FOR 2016

Cars			Light trucks		
	2008 MY	2016 MY		2008 MY	2016 MY
Full-Size Car	829,896	530,945	Full-Size Pickup	1,331,989	1,379,036
Luxury Car	1,048,341	1,548,242	Mid-Size Pickup	452,013	332,082
Mid-Size Car	2,166,849	2,550,561	Full-Size Van	33,384	65,650
Mini Car	617,902	1,565,373	Mid-Size Van	719,529	839,194
Small Car	1,912,736	2,503,566	Mid-Size MAV*	110,353	116,077
Specialty Car	459,273	769,679	Small MAV	231,265	62,514
			Full-Size SUV*	559,160	232,619
			Mid-Size SUV	436,080	162,502
			Small SUV	196,424	108,858
			Full-Size CUV*	264,717	260,662
			Mid-Size CUV	923,165	1,372,200
			Small CUV	1,548,288	2,181,296

[48] GM argued that the unusually large volume of large pickups led to higher overall requirements for those vehicles. As discussed below, the agencies' analysis for the final rule corrects the number of large pickups. With this correction and other updates to the agencies' market forecast and other analytical inputs, the target functions defining the final standards (and achieving the average required performance levels defining the national program) are very similar to those from the NPRM, especially for light trucks, as illustrated below in Figures II.C–7 and II.C–8.

[49] These include the Ford F–250 & F–350, Econoline E–250, & E–350; Chevy Express, Silverado 2500, & 3500; GMC Savana, Dodge 2500, & 3500; among others.

[50] The CSM Sales Forecast Excel file ("CSM North America Sales Forecasts 2Q09 3Q09 4Q09 for the Docket") is available in the docket (Docket EPA–HQ–OAR–2009–0472).

TABLE II.B.3–2—ANNUAL SALES OF LIGHT-DUTY VEHICLES BY MARKET SEGMENT IN 2008 AND ESTIMATED FOR 2016—Continued

Cars			Light trucks		
	2008 MY	2016 MY		2008 MY	2016 MY
Total Sales**	7,034,997	9,468,365		6,806,367	7,079,323

*MAV—Multi-Activity Vehicle, SUV—Sport Utility Vehicle, CUV—Crossover Utility Vehicle.
**Total Sales are based on the classic Car/Truck definition.

Determining which traditionally-defined trucks will be defined as cars for purposes of this final rule using the revised definition established by NHTSA for MYs 2011 and beyond requires more detailed information about each vehicle model. This is described in greater detail in Chapter 1 of the final TSD.

The forecasts obtained from CSM provided estimates of car and truck sales by segment and by manufacturer, but not by manufacturer for each market segment. Therefore, NHTSA and EPA needed other information on which to base these more detailed projected market splits. For this task, the agencies used as a starting point each manufacturer's sales by market segment from model year 2008, which is the baseline fleet. Because of the larger number of segments in the truck market, the agencies used slightly different methodologies for cars and trucks.

The first step for both cars and trucks was to break down each manufacturer's 2008 sales according to the market segment definitions used by CSM. For example, the agencies found that Ford's [51] cars sales in 2008 were broken down as shown in Table II.B.3–3:

TABLE II.B.3–3—BREAKDOWN OF FORD'S 2008 CAR SALES

Full-size cars	160,857 units.
Mid-size Cars	170,399 units.
Small/Compact Cars	180,249 units.
Subcompact/Mini Cars	None.
Luxury cars	87,272 units.
Specialty cars	110,805 units.

EPA and NHTSA then adjusted each manufacturer's sales of each of its car segments (and truck segments, separately) so that the manufacturer's total sales of cars (and trucks) matched the total estimated for each future model year based on AEO and CSM forecasts. For example, as indicated in Table II.B.3–1, Ford's total car sales in 2008 were 709,583 units, while the agencies project that they will increase to 1,113,333 units by 2016. This represents an increase of 56.9 percent. Thus, the agencies increased the 2008 sales of each Ford car segment by 56.9 percent. This produced estimates of future sales which matched total car and truck sales per AEO and the manufacturer breakdowns per CSM. However, the sales splits by market segment would not necessarily match those of CSM (shown for 2016 in Table II.B.3–2).

In order to adjust the market segment mix for cars, the agencies first adjusted sales of luxury, specialty and other cars. Since the total sales of cars for each manufacturer were already set, any changes in the sales of one car segment had to be compensated by the opposite change in another segment. For the luxury, specialty and other car segments, it is not clear how changes in sales would be compensated. For example, if luxury car sales decreased, would sales of full-size cars increase, mid-size cars, and so on? The agencies have assumed that any changes in the sales of cars within these three segments were compensated for by proportional changes in the sales of the other four car segments. For example, for 2016, the figures in Table II.B.3–2 indicate that luxury car sales in 2016 are 1,548,242 units. Luxury car sales are 1,048,341 units in 2008. However, after adjusting 2008 car sales by the change in total car sales for 2016 projected by EIA and a change in manufacturer market share per CSM, luxury car sales decreased to 1,523,171 units. Thus, overall for 2016, luxury car sales had to increase by 25,071 units or 6 percent. The agencies accordingly increased the luxury car sales by each manufacturer by this percentage. The absolute decrease in luxury car sales was spread across sales of full-size, mid-size, compact and subcompact cars in proportion to each manufacturer's sales in these segments in 2008. The same adjustment process was used for specialty cars and the "other cars" segment defined by CSM.

The agencies used a slightly different approach to adjust for changing sales of the remaining four car segments. Starting with full-size cars, the agencies again determined the overall percentage change that needed to occur in future year full-size car sales after 1) adjusting for total sales per AEO 2010, 2) adjusting for manufacturer sales mix per CSM and 3) adjusting the luxury, specialty and other car segments, in order to meet the segment sales mix per CSM. Sales of each manufacturer's large cars were adjusted by this percentage. However, instead of spreading this change over the remaining three segments, the agencies assigned the entire change to mid-size vehicles. The agencies did so because the CSM data followed the trend of increasing volumes of smaller cars while reducing volumes of larger cars. If a consumer had previously purchased a full-size car, we thought it unlikely that their next purchase would decrease by two size categories, down to a subcompact. It seemed more reasonable to project that they would drop one vehicle size category smaller. Thus, the change in each manufacturer's sales of full-size cars was matched by an opposite change (in absolute units sold) in mid-size cars.

The same process was then applied to mid-size cars, with the change in mid-size car sales being matched by an opposite change in compact car sales. This process was repeated one more time for compact car sales, with changes in sales in this segment being matched by the opposite change in the sales of subcompacts. The overall result was a projection of car sales for model years 2012–2016—the reference fleet—which matched the total sales projections of the AEO forecast and the manufacturer and segment splits of the CSM forecast. These sales splits can be found in Chapter 1 of the Joint TSD for this final rule.

As mentioned above, the agencies applied a slightly different process to truck sales, because the agencies could not confidently project how the change in sales from one segment preferentially went to or came from another particular segment. Some trend from larger vehicles to smaller vehicles would have been possible. However, the CSM forecasts indicated large changes in total sport utility vehicle, multi-activity vehicle and cross-over sales which could not be connected. Thus, the

[51] **Note**: In the NPRM, Ford's 2008 sales per segment, and the total number of cars was different than shown here. The change in values is due to a correction of vehicle segments for some of Ford's vehicles.

agencies applied an iterative, but straightforward process for adjusting 2008 truck sales to match the AEO and CSM forecasts.

The first three steps were exactly the same as for cars. EPA and NHTSA broke down each manufacturer's truck sales into the truck segments as defined by CSM. The agencies then adjusted all manufacturers' truck segment sales by the same factor so that total truck sales in each model year matched AEO projections for truck sales by model year. The agencies then adjusted each manufacturer's truck sales by segment proportionally so that each manufacturer's percentage of total truck sales matched that forecast by CSM. This again left the need to adjust truck sales by segment to match the CSM forecast for each model year.

In the fourth step, the agencies adjusted the sales of each truck segment by a common factor so that total sales for that segment matched the combination of the AEO and CSM forecasts. For example, projected sales of large pickups across all manufacturers were 1,286,184 units in 2016 after adjusting total sales to match AEO's forecast and adjusting each manufacturer's truck sales to match CSM's forecast for the breakdown of sales by manufacturer. Applying CSM's forecast of the large pickup segment of truck sales to AEO's total sales forecast indicated total large pickup sales of 1,379,036 units. Thus, we increased each manufacturer's sales of large pickups by 7 percent.[52] The agencies applied the same type of adjustment to all the other truck segments at the same time. The result was a set of sales projections which matched AEO's total truck sales projection and CSM's market segment forecast. However, after this step, sales by manufacturer no longer met CSM's forecast. Thus, we repeated step three and adjusted each manufacturer's truck sales so that they met CSM's forecast. The sales of each truck segment (by manufacturer) were adjusted by the same factor. The resulting sales projection matched AEO's total truck sales projection and CSM's manufacturer forecast, but sales by market segment no longer met CSM's forecast. However, the difference between the sales projections after this fifth step was closer to CSM's market segment forecast than it was after step three. In other words, the sales projection was converging to the desired result. The agencies repeated these adjustments, matching manufacturer sales mix in one step and then market segment in the next a total of 19 times. At this point, we were able to match the market segment splits exactly and the manufacturer splits were within 0.1 percent of our goal, which is well within the needs of this analysis.

The next step in developing the reference fleets was to characterize the vehicles within each manufacturer-segment combination. In large part, this was based on the characterization of the specific vehicle models sold in 2008—*i.e.,* the vehicles comprising the baseline fleet. EPA and NHTSA chose to base our estimates of detailed vehicle characteristics on 2008 sales for several reasons. One, these vehicle characteristics are not confidential and can thus be published here for careful review by interested parties. Two, because it is constructed beginning with actual sales data, this vehicle fleet is limited to vehicle models known to satisfy consumer demands in light of price, utility, performance, safety, and other vehicle attributes.

As noted above, the agencies gathered most of the information about the 2008 baseline vehicle fleet from EPA's emission certification and fuel economy database. The data obtained from this source included vehicle production volume, fuel economy, engine size, number of engine cylinders, transmission type, fuel type, etc. EPA's certification database does not include a detailed description of the types of fuel economy-improving/CO_2-reducing technologies considered in this final rule. Thus, the agencies augmented this description with publicly available data which includes more complete technology descriptions from Ward's Automotive Group.[53] In a few instances when required vehicle information (such as vehicle footprint) was not available from these two sources, the agencies obtained this information from publicly accessible Internet sites such as *Motortrend.com* and *Edmunds.com*.[54]

The projections of future car and truck sales described above apply to each manufacturer's sales by market segment. The EPA emissions certification sales data are available at a much finer level of detail, essentially vehicle configuration. As mentioned above, the agencies placed each vehicle in the EPA certification database into one of the CSM market segments. The agencies then totaled the sales by each manufacturer for each market segment. If the combination of AEO and CSM forecasts indicated an increase in a given manufacturer's sales of a particular market segment, then the sales of all the individual vehicle configurations were adjusted by the same factor. For example, if the Prius represented 30 percent of Toyota's sales of compact cars in 2008 and Toyota's sales of compact cars in 2016 was projected to double by 2016, then the sales of the Prius were doubled, and the Prius sales in 2016 remained 30 percent of Toyota's compact car sales.

The projection of average footprint for both cars and trucks remained virtually constant over the years covered by the final rulemaking. This occurrence is strictly a result of the CSM projections. There are a number of trends that occur in the CSM projections that caused the average footprint to remain constant. First, as the number of subcompacts increases, so do the number of 2-wheel drive crossover vehicles (that are regulated as cars). Second, truck volumes have many segment changes during the rulemaking time frame. There is no specific footprint related trend in any segment that can be linked to the unchanging footprint, but there is a trend that non-pickups' volumes will move from truck segments that are ladder frame to those that are unibody-type vehicles. A table of the footprint projections is available in the TSD as well as further discussion on this topic.

4. How was the development of the baseline and reference fleets for this Final Rule different from NHTSA's historical approach?

NHTSA has historically based its analysis of potential new CAFE standards on detailed product plans the agency has requested from manufacturers planning to produce light vehicles for sale in the United States. Although the agency has not attempted to compel manufacturers to submit such information, most major manufacturers and some smaller manufacturers have voluntarily provided it when requested.

The proposal discusses many of the advantages and disadvantages of the market forecast approach used by the agencies, including the agencies' interest in examining product plans as a check on the reference fleet developed by the agencies for this rulemaking. One of the primary reasons for the request for data in 2009 was to obtain permission from the manufacturers to make public their product plan information for model years 2010 and 2011. There are a number of reasons that this could be advantageous in the development of a reference fleet. First,

[52] **Note**: In the NPRM this example showed 29 percent instead of 7 percent. The significant decrease was due to using the filtered 4th quarter CSM forecast. Commenters, such as GM, had commented that we had too many full-size trucks and vans, and this change addresses their comment.

[53] Note that WardsAuto.com is a fee-based service, but all information is public to subscribers.

[54] Motortrend.com and Edmunds.com are free, no-fee Internet sites.

some known changes to the fleet may not be captured by the approach of solely using publicly available information. For example, the agencies' current market forecast includes some vehicles for which manufacturers have announced plans for elimination or drastic production cuts such as the Chevrolet Trailblazer, the Chrysler PT Cruiser, the Chrysler Pacifica, the Dodge Magnum, the Ford Crown Victoria, the Mercury Sable, the Pontiac Grand Prix, the Pontiac G5 and the Saturn Vue. These vehicle models appear explicitly in market inputs to NHTSA's analysis, and are among those vehicle models included in the aggregated vehicle types appearing in market inputs to EPA's analysis. However, although the agencies recognize that these specific vehicles will be discontinued, we continue to include them in the market forecast because they are useful as a surrogate for successor vehicles that may appear in the rulemaking time frame to replace the discontinued vehicles in that market segment.[55]

Second, the agencies' market forecast does not include some forthcoming vehicle models, such as the Chevrolet Volt, the Ford Fiesta and several publicly announced electric vehicles, including the announcements from Nissan regarding the Leaf. Nor does it include several MY 2009 or 2010 vehicles, such as the Honda Insight, the Hyundai Genesis and the Toyota Venza, as our starting point for defining specific vehicle models in the reference fleet was Model Year 2008. Additionally, the market forecast does not account for publicly announced technology introductions, such as Ford's EcoBoost system, whose product plans specify which vehicles and how many are planned to have this technology. Chrysler Group LLC has announced plans to offer small- and medium-sized cars using Fiat powertrains. Were the agencies to rely on manufacturers' product plans (that were submitted), the market forecast would account for not only these specific examples, but also for similar examples that have not yet been announced publicly.

Some commenters, such as CBD and NESCAUM, suggested that the agencies' omission of known future vehicles and technologies in the reference fleet causes inaccuracies, which CBD further suggested could lead the agencies to set lower standards. On the other hand, CARB commented that "the likely impact of this omission is minor." Because the agencies' analysis examines the costs and benefits of progressively adding technology to manufacturers' fleets, the omission of future vehicles and technologies primarily affects how much additional technology (and, therefore, how much incremental cost and benefit) is available relative to the point at which the agencies' examination of potential new standards begins. Thus, in fact, the omission only reflects the reference fleet, rather than the agencies' conclusions regarding how stringent the standards should be. This is discussed further below. The agencies believe the above-mentioned comments by CBD, NESCAUM, and others are based on a misunderstanding of the agencies' approach to analyzing potential increases in regulatory stringency. The agencies also note that manufacturers do not always use technology solely to increase fuel economy, and that use of technology to increase vehicles' acceleration performance or utility would probably make that technology unavailable toward more stringent standards. Considering the incremental nature of the agencies' analysis, and the counterbalancing aspects of potentially omitted technology in the reference fleet, the agencies believe their determination of the stringency of new standards has not been impacted by any such omissions.

Moreover, EPA and NHTSA believe that not including such vehicles after MY 2008 does not significantly impact our estimates of the technology required to comply with the standards. If included, these vehicles could increase the extent to which manufacturers are, in the reference case, expected to over-comply with the MY 2011 CAFE standards, and could thereby make the new standards appear to cost less and yield less benefit relative to the reference case. However, in the agencies' judgment, production of the most advanced technology vehicles, such as the Chevy Volt or the Nissan Leaf (for example), will most likely be too limited during MY 2011 through MY 2016 to significantly impact manufacturers' compliance positions. While we are projecting the characteristics of the future fleet by extrapolating from the MY 2008 fleet, the primary difference between the future fleet and the 2008 fleet in the same vehicle segment is the use of additional CO_2-reducing and fuel-saving technologies. Both the NHTSA and EPA models add such technologies to evaluate means of complying with the standards, and the costs of doing so. Thus, our future projections of the vehicle fleet generally shift vehicle designs towards those more likely to be typical of newer vehicles. Compared to using product plans that show continued fuel economy increases planned based on expectations that CAFE standards will continue to increase, this approach helps to clarify the costs and benefits of the new standards, as the costs and benefits of all fuel economy improvements beyond those required by the MY 2011 CAFE standards are being assigned to the final rules. In some cases, the "actual" (vs. projected or "modeled") new vehicles being introduced into the market by manufacturers are done so in anticipation of this rulemaking. On the other hand, manufacturers may plan to continue using technologies to improve vehicle performance and/or utility, not just fuel economy. Our approach prevents some of these actual technological improvements and their associated cost and fuel economy improvements from being assumed in the reference fleet. Thus, the added technology will not be considered to be free (or having no benefits) for the purposes of this rule.

In this regard, the agencies further note that manufacturer announcements regarding forward models (or future vehicle models) need not be accepted automatically. Manufacturers tend to limit accurate production intent information in these releases for reasons such as: (a) Competitors will closely examine their information for data in their product planning decisions; (b) the press coverage of forward model announcements is not uniform, meaning highly anticipated models have more coverage and materials than models that may be less exciting to the public and consistency and uniformity cannot be ensured with the usage of press information; and (c) these market projections are subject to change (sometimes significant), and manufacturers may not want to give the appearance of being indecisive, or under/over-confident to their shareholders and the public with premature release of information.

NHTSA has evaluated the use of public manufacturer forward model press information to update the vehicle fleet inputs to the baseline and reference fleet. The challenges in this approach are evidenced by the continuous stream of manufacturer press releases throughout a defined rulemaking period. Manufacturers' press releases suffer from the same types of inaccuracies that many commenters believe can affect product plans.

[55] An example of this is in the GM Pontiac line, which is in the process of being phased out during the course of this rulemaking. GM has similar vehicles within their other brands (like Chevy) that will "presumably" pick up the loss in Pontiac share. We model this simply by leaving the Pontiac brand in.

Manufacturers can often be overly optimistic in their press releases, both on projected date of release of new models and on sales volumes.

More generally and more critically, as discussed in the proposal and as endorsed by many of the public comments, there are several advantages to the approach used by the agencies in this final rule. Most importantly, today's market forecast is much more transparent. The information sources used to develop today's market forecast are all either in the public domain or available commercially. Another significant advantage of today's market forecast is the agencies' ability to assess more fully the incremental costs and benefits of the proposed standards. In addition, by developing baseline and reference fleets from common sources, the agencies have been able to avoid some errors—perhaps related to interpretation of requests—that have been observed in past responses to NHTSA's requests. An additional advantage of the approach used for this rule is a consistent projection of the change in fuel economy and CO_2 emissions across the various vehicles from the application of new technology. With the approach used for this final rule, the baseline market data comes from actual vehicles (on the road today) which have actual fuel economy test data (in contrast to manufacturer estimates of future product fuel economy)—so there is no question what is the basis for the fuel economy or CO_2 performance of the baseline market data as it is.

5. How does manufacturer product plan data factor into the baseline used in this Final Rule?

In the spring and fall of 2009, many manufacturers submitted product plans in response to NHTSA's recent requests that they do so. NHTSA and EPA both have access to these plans, and both agencies have reviewed them in detail. A small amount of product plan data was used in the development of the baseline. The specific pieces of data are:

- Wheelbase.
- Track Width Front.
- Track Width Rear.
- EPS (Electric Power Steering).
- ROLL (Reduced Rolling Resistance).
- LUB (Advance Lubrication *i.e.* low weight oil).
- IACC (Improved Electrical Accessories).
- Curb Weight.
- GVWR (Gross Vehicle Weight Rating).

The track widths, wheelbase, curb weight, and GVWR for vehicles could have been looked up on the Internet (159 were), but were taken from the product plans when available for convenience. To ensure accuracy, a sample from each product plan was used as a check against the numbers available from *Motortrend.com.* These numbers will be published in the baseline file since they can be easily looked up on the internet. On the other hand, EPS, ROLL, LUB, and IACC are difficult to determine without using manufacturer's product plans. These items will not be published in the baseline file, but the data has been aggregated into the agencies' baseline in the technology effectiveness and cost effectiveness for each vehicle in a way that allows the baseline for the model to be published without revealing the manufacturer's data.

Also, some technical information that manufacturers have provided in product plans regarding specific vehicle models is, at least insofar as NHTSA and EPA have been able to determine, not available from public or commercial sources. While such gaps do not bear significantly on the agencies' analysis, the diversity of pickup configurations necessitated utilizing a sales-weighted average footprint value [56] for many manufacturers' pickups. Since our modeling only utilizes footprint in order to estimate each manufacturer's CO_2 or fuel economy standard and all the other vehicle characteristics are available for each pickup configuration, this approximation has no practical impact on the projected technology or cost associated with compliance with the various standards evaluated. The only impact which could arise would be if the relative sales of the various pickup configurations changed, or if the agencies were to explore standards with a different shape. This would necessitate recalculating the average footprint value in order to maintain accuracy.

Additionally, as discussed in the NPRM, in an effort to update the 2008 baseline to account for the expected changes in the fleet in the near-term model years 2009–2011 described above, NHTSA requested permission from the manufacturers to make this limited product plan information public. Unfortunately, virtually no manufacturers agreed to allow the use of their data after 2009 model year. A few manufacturers, such as GM and Ford, stated we could use their 2009 product plan data after the end of production (December 31), but this would not have afforded us sufficient time to do the analysis for the final rule. Since the agencies were unable to obtain consistent updates, the baseline and reference fleets were not updated beyond 2008 model year for the final rule. The 2008 baseline fleet and projections were instead updated using the latest AEO and CSM data as discussed earlier.

NHTSA and EPA recognize that the approach applied for the current rule gives transparency and openness of the vehicle market forecast high priority, and accommodates minor inaccuracies that may be introduced by not accounting for future product mix changes anticipated in manufacturers' confidential product plans. For any future fleet analysis that the agencies are required to perform, NHTSA and EPA plan to request that manufacturers submit product plans and allow some public release of information. In performing this analysis, the agencies plan to reexamine potential tradeoffs between transparency and technical reasonableness, and to explain resultant choices.

C. Development of Attribute-Based Curve Shapes

In the NPRM, NHTSA and EPA proposed to set attribute-based CAFE and CO_2 standards that are defined by a mathematical function for MYs 2012–2016 passenger cars and light trucks. EPCA, as amended by EISA, expressly requires that CAFE standards for passenger cars and light trucks be based on one or more vehicle attributes related to fuel economy, and be expressed in the form of a mathematical function.[57] The CAA has no such requirement, though in past rules, EPA has relied on both universal and attribute-based standards (*e.g.,* for nonroad engines, EPA uses the attribute of horsepower). However, given the advantages of using attribute-based standards and given the

[56] A full-size pickup might be offered with various combinations of cab style (*e.g.,* regular, extended, crew) and box length (*e.g.,* 5½′, 6½′, 8′) and, therefore, multiple footprint sizes. CAFE compliance data for MY 2008 data does not contain footprint information, and does not contain information that can be used to reliably identify which pickup entries correspond to footprint values estimable from public or commercial sources. Therefore, the agencies have used the known production levels of average values to represent all variants of a given pickup line (*e.g.,* all variants of the F–150 and the Sierra/Silverado) in order to calculate the sales-weighted average footprint value for each pickup family. Again, this has no impact on the results of our modeling effort, although it would require re-estimation if we were to examine light truck standards of a different shape. In the extreme, one single footprint value could be used for every vehicle sold by a single manufacturer as long as the fuel economy standard associated with this footprint value represented the sales-weighted, harmonic average of the fuel economy standards associated with each vehicle's footprint values.

[57] 49 U.S.C. 32902(a)(3)(A).

goal of coordinating and harmonizing CO_2 standards promulgated under the CAA and CAFE standards promulgated under EPCA, EPA also proposed to issue standards that are attribute-based and defined by mathematical functions. There was consensus in the public comments that EPA should develop attribute-based CO_2 standards.

Comments received in response to the agencies' decision to base standards on vehicle footprint were largely supportive. Several commenters (BMW, NADA, NESCAUM) expressed support for attribute-based (as opposed to flat or universal) standards generally, and agreed with EPA's decision to harmonize with NHTSA in this respect. Many commenters (Aluminum Association, BMW, ICCT, NESCAUM, NY DEC, Schade, Toyota) also supported the agencies' decision to continue setting CAFE standards, and begin setting GHG standards, on the basis of vehicle footprint, although one commenter (NJ DEP) opposed the use of footprint due to concern that it encourages manufacturers to upsize vehicles and undercut the gains of the standard. Of the commenters supporting the use of footprint, several focused on the benefits of harmonization—both between EPA and NHTSA, and between the U.S. and the rest of the world. BMW commented, for example, that many other countries use weight-based standards rather than footprint-based. While BMW did not object to NHTSA's and EPA's use of footprint-based standards, it emphasized the impact of this non-harmonization on manufacturers who sell vehicles globally, and asked the agencies to consider these effects. NADA supported the use of footprint, but cautioned that the agencies must be careful in setting the footprint curve for light trucks to ensure that manufacturers can continue to provide functionality like 4WD and towing/hauling capacity.

Some commenters requested that the agencies consider other or more attributes in addition to footprint, largely reiterating comments submitted to the MYs 2011–2015 CAFE NPRM. Cummins supported the agencies using a secondary attribute to account for towing and hauling capacity in large trucks, for example, while Ferrari asked the agencies to consider a multi-attribute approach incorporating curb weight, maximum engine power or torque, and/or engine displacement, as it had requested in the previous round of CAFE rulemaking. An individual, Mr. Kenneth Johnson, commented that weight-based standards would be preferable to footprint-based ones, because weight correlates better with fuel economy than footprint, because the use of footprint does not necessarily guarantee safety the way the agencies say it does, and because weight-based standards would be fairer to manufacturers.

In response, EPA and NHTSA continue to believe that the benefits of footprint-attribute-based standards outweigh any potential drawbacks raised by commenters, and that harmonization between the two agencies should be the overriding goal on this issue. As discussed by NHTSA in the MY 2011 CAFE final rule,[58] the agencies believe that the possibility of gaming is lowest with footprint-based standards, as opposed to weight-based or multi-attribute-based standards. Specifically, standards that incorporate weight, torque, power, towing capability, and/or off-road capability in addition to footprint would not only be significantly more complex, but by providing degrees of freedom with respect to more easily-adjusted attributes, they would make it less certain that the future fleet would actually achieve the average fuel economy and CO_2 levels projected by the agencies. The agencies recognize that based on economic and consumer demand factors that are external to this rule, the distribution of footprints in the future may be different (either smaller or larger) than what is projected in this rule. However, the agencies continue to believe that there will not be significant shifts in this distribution as a direct consequence of this rule. The agencies are therefore finalizing MYs 2012–2016 CAFE and GHG standards based on footprint.

The agencies also recognize that there could be benefits for a number of manufacturers if there was greater international harmonization of fuel economy and GHG standards, but this is largely a question of how stringent standards are and how they are enforced. It is entirely possible that footprint-based and weight-based systems can coexist internationally and not present an undue burden for manufacturers if they are carefully crafted. Different countries or regions may find different attributes appropriate for basing standards, depending on the particular challenges they face—from fuel prices, to family size and land use, to safety concerns, to fleet composition and consumer preference, to other environmental challenges besides climate change. The agencies anticipate working more closely with other countries and regions in the future to consider how to mitigate these issues in a way that least burdens manufacturers while respecting each country's need to meet its own particular challenges.

Under an attribute-based standard, every vehicle model has a performance target (fuel economy and CO_2 emissions for CAFE and CO_2 emissions standards, respectively), the level of which depends on the vehicle's attribute (for the proposal, footprint). The manufacturers' fleet average performance is determined by the production-weighted[59] average (for CAFE, harmonic average) of those targets. NHTSA and EPA are promulgating CAFE and CO_2 emissions standards defined by constrained linear functions and, equivalently, piecewise linear functions.[60] As a possible option for future rulemakings, the constrained linear form was introduced by NHTSA in the 2007 NPRM proposing CAFE standards for MY 2011–2015. Described mathematically, the proposed constrained linear function was defined according to the following formula:[61]

$$TARGET = \frac{1}{MIN\left[MAX\left(c \times FOOTPRINT + d, \frac{1}{a}\right), \frac{1}{b}\right]}$$

Where

TARGET = the fuel economy target (in mpg) applicable to vehicles of a given footprint (*FOOTPRINT,* in square feet),

a = the function's upper limit (in mpg),

b = the function's lower limit (in mpg),

[58] *See* 74 FR 14359 (Mar. 30, 2009).

[59] Production for sale in the United States.

[60] The equations are equivalent but are specified differently due to differences in the agencies' respective models.

[61] This function is linear in fuel consumption but not in fuel economy.

c = the slope (in gpm per square foot) of the sloped portion of the function,

d = the intercept (in gpm) of the sloped portion of the function (that is, the value the sloped portion would take if extended to a footprint of 0 square feet, and the *MIN* and *MAX* functions take the minimum and maximum, respectively, of the included values; for example, *MIN*(1,2) = 1, *MAX*(1,2) = 2, and *MIN*[*MAX*(1,2),3)]=2.

Because the format is linear on a gallons-per-mile basis, not on a miles-per-gallon basis, it is plotted as fuel consumption below. Graphically, the constrained linear form appears as shown in Figure II.C–1.

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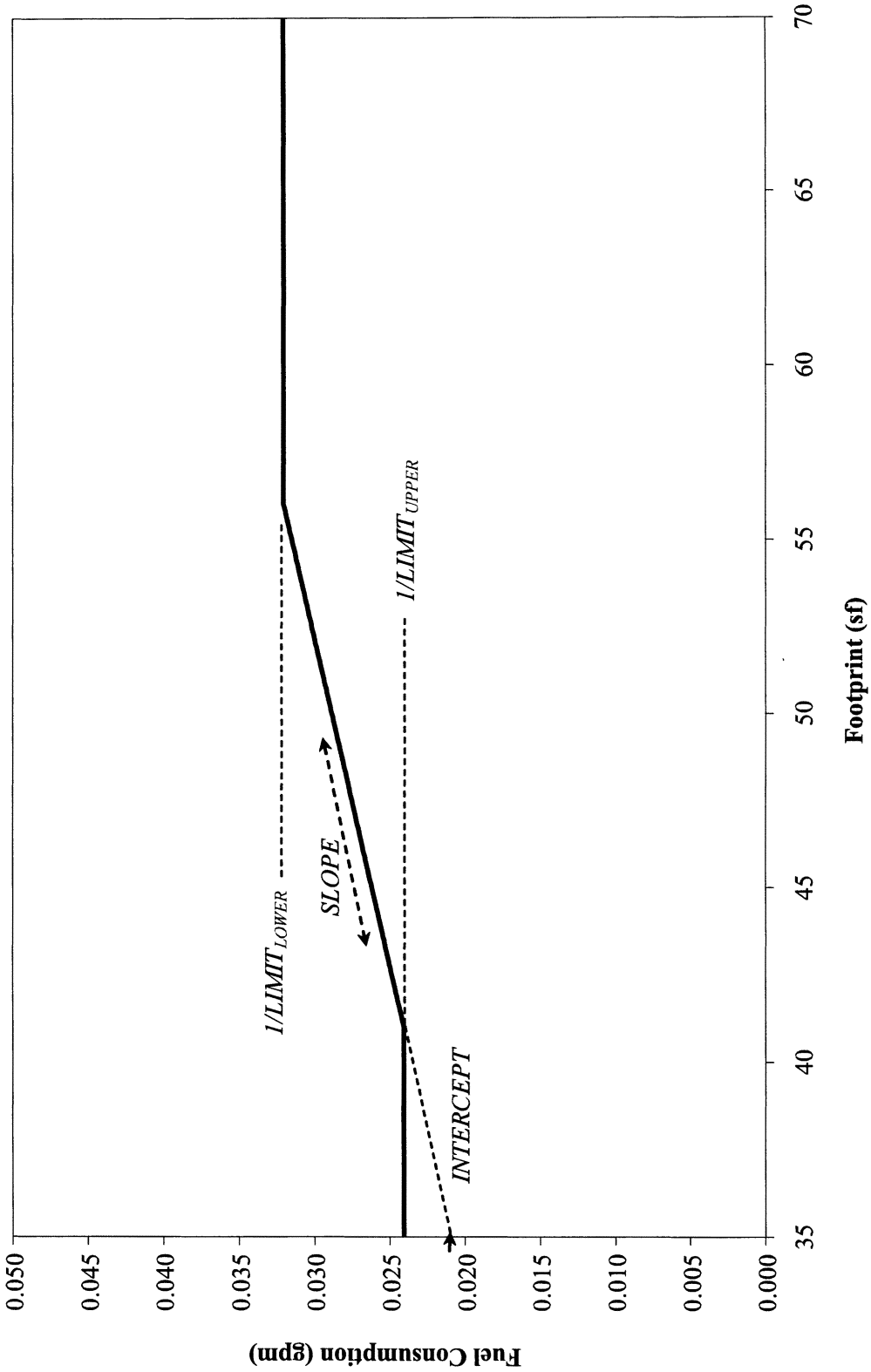

Figure II.C-1 The Shape of the Constrained Linear Form

The specific form and stringency for each fleet (passenger car and light trucks) and model year are defined through specific values for the four coefficients shown above.

EPA proposed the equivalent equation below for assigning CO_2 targets to an individual vehicle's footprint value. Although the general model of the equation is the same for each vehicle category and each year, the parameters of the equation differ for cars and trucks and for each model year. Described mathematically, EPA's proposed piecewise linear function was as follows:

Target = a, if $x \leq l$
Target = $cx + d$, if $l < x \leq h$
Target = b, if $x > h$

In the constrained linear form similar in form to the fuel economy equation above, this equation takes the simplified form:

Target = MIN [MAX (c * x + d, a), b]

Where

Target = the CO_2 target value for a given footprint (in g/mi)
a = the minimum target value (in g/mi CO_2) [62]
b = the maximum target value (in g/mi CO_2)
c = the slope of the linear function (in g/mi per sq ft CO_2)
d = is the intercept or zero-offset for the line (in g/mi CO_2)
x = footprint of the vehicle model (in square feet, rounded to the nearest tenth)
l & h are the lower and higher footprint limits or constraints or ("kinks") or the boundary between the flat regions and the intermediate sloped line (in sq ft)

Graphically, piecewise linear form, like the constrained linear form, appears as shown in Figure II.C–2.

[62] These a, b, d coefficients differ from the a, b, d coefficients in the constrained linear fuel economy equation primarily by a factor of 8887 (plus an additive factor for air conditioning).

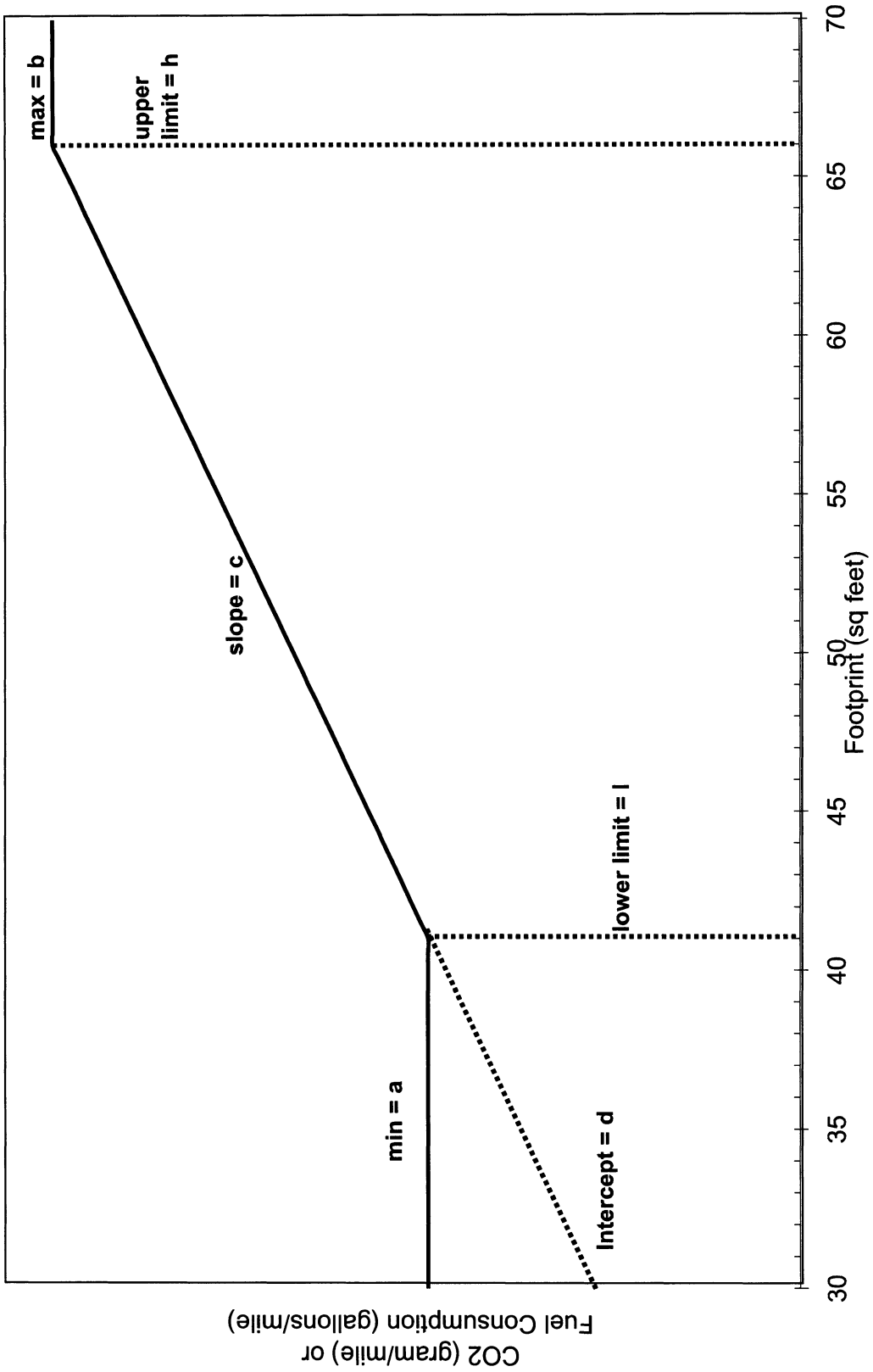

Figure II.C-2 The Shape of the Piecewise Linear Form

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As for the constrained linear form, the specific form and stringency of the piecewise linear function for each fleet (passenger car and light trucks) and model year are defined through specific values for the four coefficients shown above.

For purposes of the proposed rules, NHTSA and EPA developed the basic curve shapes using methods similar to those applied by NHTSA in fitting the curves defining the MY 2011 standards. The first step involved defining the relevant vehicle characteristics in the form used by NHTSA's CAFE model (*e.g.,* fuel economy, footprint, vehicle class, technology) described in Section II.B of this preamble and in Chapter 1 of the Joint TSD. However, because the baseline fleet utilizes a wide range of available fuel saving technologies, NHTSA used the CAFE model to develop a fleet to which all of the technologies discussed in Chapter 3 of the Joint TSD [63] were applied, except dieselization and strong hybridization. This was accomplished by taking the following steps: (1) Treating all manufacturers as unwilling to pay civil penalties rather than applying technology, (2) applying any technology at any time, irrespective of scheduled vehicle redesigns or freshening, and (3) ignoring "phase-in caps" that constrain the overall amount of technology that can be applied by the model to a given manufacturer's fleet. These steps helped to increase technological parity among vehicle models, thereby providing a better basis (than the baseline or reference fleets) for estimating the statistical relationship between vehicle size and fuel economy.

In fitting the curves, NHTSA and EPA also continued to fit the sloped portion of the function to vehicle models between the footprint values at which the agencies continued to apply constraints to limit the function's value for both the smallest and largest vehicles. Without a limit at the smallest footprints, the function—whether logistic or linear—can reach values that would be unfairly burdensome for a manufacturer that elects to focus on the market for small vehicles; depending on the underlying data, an unconstrained form, could result in stringency levels that are technologically infeasible and/or economically impracticable for those manufacturers that may elect to focus on the smallest vehicles. On the other side of the function, without a limit at the largest footprints, the function may provide no floor on required fuel economy. Also, the safety considerations that support the provision of a disincentive for downsizing as a compliance strategy apply weakly, if at all, to the very largest vehicles. Limiting the function's value for the largest vehicles leads to a function with an inherent absolute minimum level of performance, while remaining consistent with safety considerations.

Before fitting the sloped portion of the constrained linear form, NHTSA and EPA selected footprints above and below which to apply constraints (*i.e.,* minimum and maximum values) on the function. The agencies believe that the linear form performs well in describing the observed relationship between footprint and fuel consumption or CO_2 emissions for vehicle models within the footprint ranges covering most vehicle models, but that the single (as opposed to piecewise) linear form does not perform well in describing this relationship for the smallest and largest vehicle models. For passenger cars, the agency noted that several manufacturers offer small, sporty coupes below 41 square feet, such as the BMW Z4 and Mini, Honda S2000, Mazda MX–5 Miata, Porsche Carrera and 911, and Volkswagen New Beetle. Because such vehicles represent a small portion (less than 10 percent) of the passenger car market, yet often have performance, utility, and/or structural characteristics that could make it technologically infeasible and/or economically impracticable for manufacturers focusing on such vehicles to achieve the very challenging average requirements that could apply in the absence of a constraint, EPA and NHTSA proposed to "cut off" the linear portion of the passenger car function at 41 square feet. The agencies recognize that for manufacturers who make small vehicles in this size range, this cut off creates some incentive to downsize (*i.e.,* further reduce the size, and/or increase the production of models currently smaller than 41 square feet) to make it easier to meet the target. The cut off may also create the incentive for manufacturers who do not currently offer such models to do so in the future. However, at the same time, the agencies believe that there is a limit to the market for cars smaller than 41 square feet—most consumers likely have some minimum expectation about interior volume, among other things. The agencies thus believe that the number of consumers who will want vehicles smaller than 41 square feet (regardless of how they are priced) is small, and that the incentive to downsize in response to this final rule, if present, will be minimal. For consistency, the agency proposed to "cut off" the light truck function at the same footprint, although no light trucks are currently offered below 41 square feet. The agencies further noted that above 56 square feet, the only passenger car model present in the MY 2008 fleet were four luxury vehicles with extremely low sales volumes—the Bentley Arnage and three versions of the Rolls Royce Phantom. NHTSA and EPA therefore also proposed to "cut off" the linear portion of the passenger car function at 56 square feet. Finally, the agencies noted that although public information is limited regarding the sales volumes of the many different configurations (cab designs and bed sizes) of pickup trucks, most of the largest pickups (*e.g.,* the Ford F–150, GM Sierra/Silverado, Nissan Titan, and Toyota Tundra) appear to fall just above 66 square feet in footprint. EPA and NHTSA therefore proposed to "cut off" the linear portion of the light truck function at 66 square feet.

Having developed a set of vehicle emissions and footprint data which represent the benefit of all non-diesel, non-hybrid technologies, we determined the initial values for parameters *c* and *d* were determined for cars and trucks separately. *c* and *d* were initially set at the values for which the average (equivalently, sum) of the absolute values of the differences was minimized between the "maximum technology" fleet fuel consumption (within the footprints between the upper and lower limits) and the straight line of the function defined above at the same corresponding vehicle footprints. That is, *c* and *d* were determined by minimizing the average absolute residual, commonly known as the MAD (Mean Absolute Deviation) approach, of the corresponding straight line.

Finally, NHTSA calculated the values of the upper and lower parameters (*a* and *b*) based on the corresponding footprints discussed above (41 and 56 square feet for passenger cars, and 41 and 66 square feet for light trucks).

The result of this methodology is shown below in Figures II.C–3 and II.C–4 for passenger cars and light trucks, respectively. The fitted curves are shown with the underlying "maximum technology" passenger car and light truck fleets. For passenger cars, the mean absolute deviation of the sloped portion of the function was 14 percent.

[63] The agencies excluded diesel engines and strong hybrid vehicle technologies from this exercise (and only this exercise) because the agencies expect that manufacturers would not need to rely heavily on these technologies in order to comply with the proposed standards. NHTSA and EPA did include diesel engines and strong hybrid vehicle technologies in all other portions of their analyses.

For trucks, the corresponding MAD was 10 percent.

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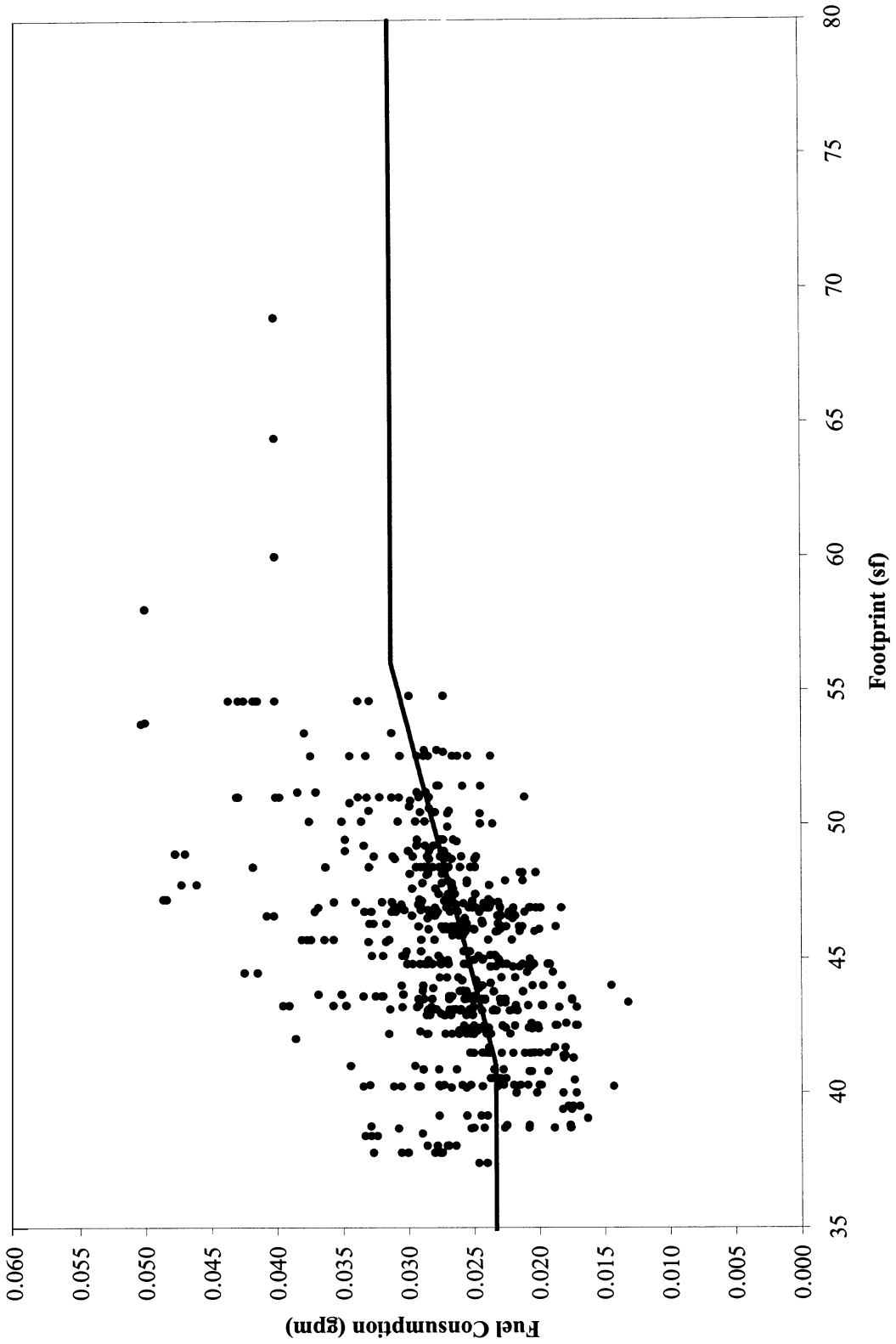

Figure II.C-3 "Maximum Technology" Passenger Fleet with Fitted Constrained Linear Function

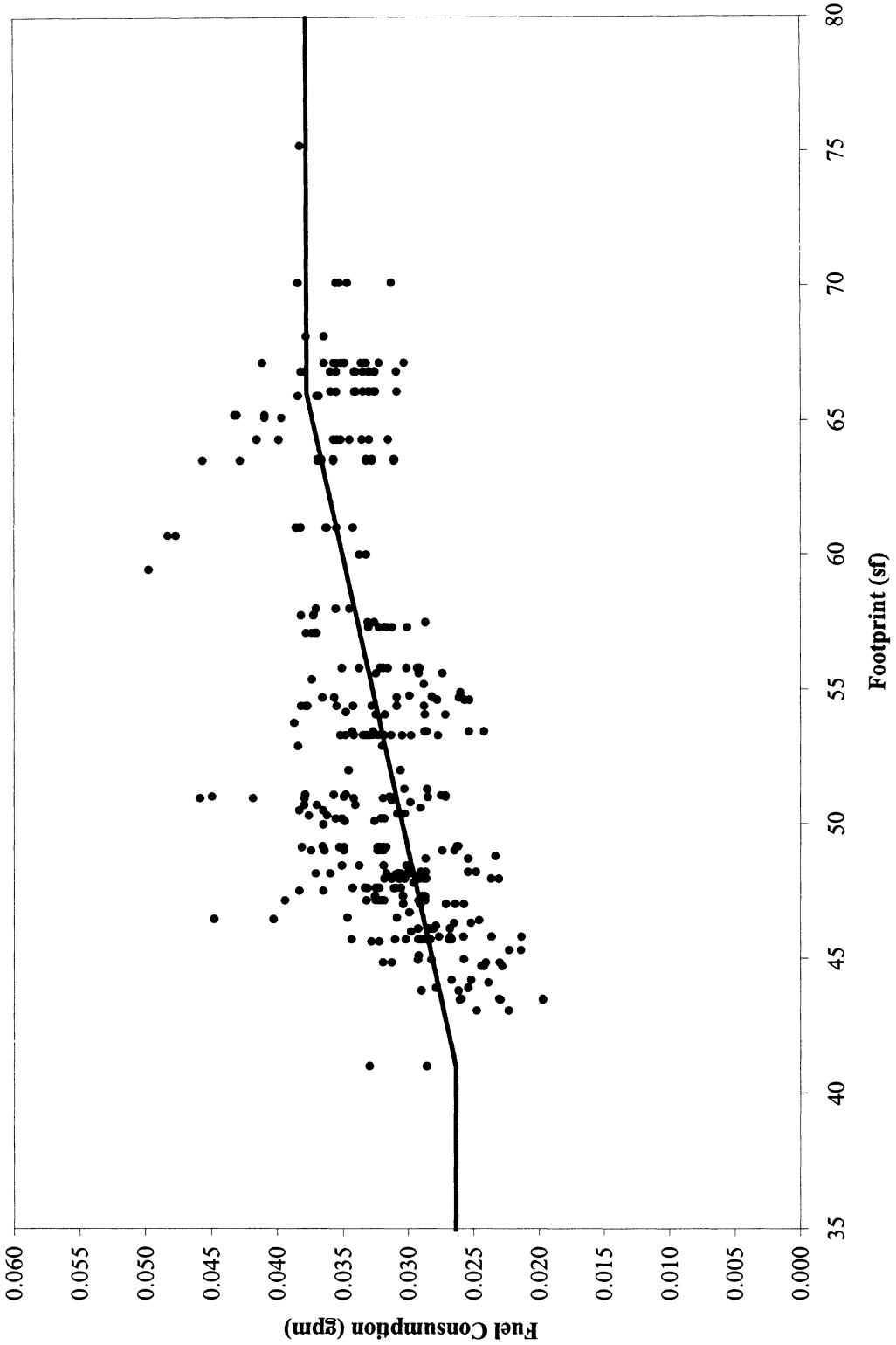

Figure II.C--4 "Maximum Technology" Light Truck with Fitted Constrained Linear Function

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The agencies used these functional forms as a starting point to develop mathematical functions defining the actual proposed standards as discussed above. The agencies then transposed these functions vertically (*i.e.,* on a gpm or CO_2 basis, uniformly downward) to produce the same fleetwide fuel economy (and CO_2 emission levels) for cars and light trucks described in the NPRM.

A number of public comments generally supported the agencies' choice of attribute-based mathematical functions, as well as the methods applied to fit the function. Ferrari indicated support for the use of a constrained linear form rather than a constrained logistic form, support for the application of limits on the functions' values, support for a generally less steep passenger car curve compared to MY 2011, and support for the inclusion of all manufacturers in the analysis used to fit the curves. ICCT also supported the use of a constrained linear form. Toyota expressed general support for the methods and outcome, including a less-steep passenger car curve, and the application of limits on fuel economy targets applicable to the smallest vehicles. The UAW commented that the shapes and levels of the curves are reasonable.

Other commenters suggested that changes to the agencies' methods and results would yield better outcomes. GM suggested that steeper curves would provide a greater incentive for limited-line manufacturers to apply technology to smaller vehicles. GM argued that steeper and, in their view, fairer curves could be obtained by using sales-weighted least-squares regression rather than minimization of the unweighted mean absolute deviation. Conversely, students from UC Santa Barbara commented that the passenger car and light truck curves should be flatter and should converge over time in order to encourage the market to turn, as the agencies' analysis assumes it will, away from light trucks and toward passenger cars.

NADA commented that there should be no "cut-off" points (*i.e.,* lower limits or floors), because these *de facto* "backstops" might limit consumer choice, especially for light trucks—a possibility also suggested by the Alliance. The Alliance and several individual manufacturers also commented that the cut-off point for light trucks should be shifted to 72 square feet (from the proposed 66 square feet), arguing that the preponderance of high-volume light truck models with footprints greater than 66 square feet is such that a 72 square foot cut-off point makes it unduly challenging for manufacturers serving the large pickup market and thereby constitutes a *de facto* backstop. Also, with respect to the smallest light truck models, Honda commented that the cut-off point should be set at the point defining the smallest 10 percent of the fleet, both for consistency with the passenger car cut-off point, and to provide a greater incentive for manufacturers to downsize the smallest light truck models (which provide greater functionality than passenger cars).

Other commenters focused on whether the agencies should have separate curves for different fleets or whether they should have a single curve that applied to both passenger cars and light trucks. This issue is related, to some extent, to commenters who discussed whether car and truck definitions should change. CARB, Ford, and Toyota supported separate curves for cars and trucks, generally stating that different fleets have different functional characteristics and these characteristics are appropriately addressed by separate curves. Likewise, AIAM, Chrysler, and NADA supported leaving the current definitions of car and truck the same. CBD, ICCT, and NESCAUM supported a single curve, based on concerns about manufacturers gaming the system and reclassifying passenger cars as light trucks in order to obtain the often-less stringent light truck standard, which could lead to lower benefits than anticipated by the agencies.

In addition, the students from UC Santa Barbara reported being unable to reproduce the agencies' analysis to fit curves to the passenger car and light truck fleets, even when using the model, inputs, and external analysis files posted to NHTSA's Web site when the NPRM was issued.

Having considered public comments, NHTSA and EPA have re-examined the development of curves underlying the standards proposed in the NPRM, and are promulgating standards based on the same underlying curves. The agencies have made this decision considering that, while EISA mandates that CAFE standards be defined by a mathematical function in terms of one or more attributes related to fuel economy, neither EISA nor the CAA require that the mathematical function be limited to the observed or theoretical dependence of fuel economy on the selected attribute or attributes. As a means by which CAFE and GHG standards are specified, the mathematical function can and does properly play a normative role. Therefore, NHTSA and EPA have concluded that, as supported by comments, the mathematical function can reasonably be based on a blend of analytical and policy considerations, as discussed below and in the Joint Technical Support Document.

With respect to GM's recommendation that NHTSA and EPA use weighted least-squares analysis, the agencies find that the market forecast used for analysis supporting both the NPRM and the final rule exhibits the two key characteristics that previously led NHTSA to use minimization of the unweighted Mean Absolute Deviation (MAD) rather than weighted least-squares analysis. First, projected model-specific sales volumes in the agencies' market forecast cover an extremely wide range, such that, as discussed in NHTSA's rulemaking for MY 2011, while unweighted regression gives low-selling vehicle models and high-selling vehicle models equal emphasis, sales-weighted regression would give some vehicle models considerably more emphasis than other vehicle models.[64] The agencies' intention is to fit a curve that describes a technical relationship between fuel economy and footprint, given comparable levels of technology, and this supports weighting discrete vehicle models equally. On the other hand, sales weighted regression would allow the difference between other vehicle attributes to be reflected in the analysis, and also would reflect consumer demand.

Second, even after NHTSA's "maximum technology" analysis to increase technological parity of vehicle models before fitting curves, the agencies' market forecast contains many significant outliers. As discussed in NHTSA's rulemaking for MY 2011, MAD is a statistical procedure that has been demonstrated to produce more efficient parameter estimates than least-squares analysis in the presence of significant outliers.[65] In addition, the

[64] For example, the agencies' market forecast shows MY 2016 sales of 187,000 units for Toyota's 2WD Sienna, and shows 27 model configurations with MY 2016 sales of fewer than 100 units. Similarly, the agencies' market forecast shows MY 2016 sales of 268,000 for the Toyota Prius, and shows 29 model configurations with MY 2016 sales of fewer than 100 units. Sales-weighted analysis would give the Toyota Sienna and Prius more than a thousand times the consideration of many vehicle model configurations. Sales-weighted analysis would, therefore, cause a large number of vehicle model configurations to be virtually ignored. *See* discussion in NHTSA's final rule for MY 2011 passenger car and light truck CAFE standards, 74 FR 14368 (Mar. 30, 2009), and in NHTSA's NPRM for that rulemaking, 73 FR 24423–24429 (May 2, 2008).

[65] *Id.* In the case of a dataset not drawn from a sample with a Gaussian, or normal, distribution, there is often a need to employ robust estimation methods rather than rely on least-squares approach to curve fitting. The least-squares approach has as an underlying assumption that the data are drawn

agencies remain concerned that the steeper curves resulting from weighted least-squares analysis would increase the risk that energy savings and environmental benefits would be lower than projected, because the steeper curves would provide a greater incentive to increase sales of larger vehicles with lower fuel economy levels. Based on these technical considerations and these concerns regarding potential outcomes, the agencies have decided not to re-fit curves using weighted least-squares analysis, but note that they may reconsider using least-squares regression in future analysis.

NHTSA and EPA have considered GM's comment that steeper curves would provide a greater incentive for limited-line manufacturers to apply technology to smaller vehicles. While the agencies agree that a steeper curve would, absent any changes in fleet mix, tend to shift average compliance burdens away from GM and toward companies that make smaller vehicles, the agencies are concerned, as stated above, that steeper curves would increase the risk that induced increases in vehicle size could erode projected energy and environmental benefits.

NHTSA and EPA have also considered the comments by the students from UC Santa Barbara indicating that the passenger car and light truck curves should be flatter and should converge over time. The agencies conclude that flatter curves would reduce the incentives intended in shifting from "flat" CAFE standards to attribute-based CAFE and GHG standards—those being the incentive to respond to attribute-based standards in ways that minimize compromises in vehicle safety, and the incentive for more manufacturers (than primarily those selling a wider range of vehicles) across the range of the attribute to have to increase the application of fuel-saving technologies. With regard to whether the agencies should set separate curves or a single one, NHTSA also notes that EPCA requires NHTSA to establish standards separately for passenger cars and light trucks, and thus concludes that the standards for each fleet should be based on the characteristics of vehicles in each fleet. In other words, the passenger car curve should be based on the characteristics of passenger cars, and the light truck curve should be based on the characteristics of light trucks—thus to the extent that those characteristics are different, an artificially-forced convergence would not accurately reflect those differences. However, such convergence could be appropriate depending on future trends in the light vehicle market, specifically further reduction in the differences between passenger car and light truck characteristics. While that trend was more apparent when car-like 2WD SUVs were classified as light trucks, it seems likely to diminish for the model year vehicles subject to these rules as the truck fleet will be more purely "truck-like" than has been the case in recent years.

NHTSA and EPA have also considered comments on the maxima and minima that the agencies have applied to "cut off" the linear function underlying the proposed curves for passenger cars and light trucks. Contrary to NADA's suggestion that there should be no such cut-off points, the agencies conclude that curves lacking maximum fuel economy targets (*i.e.,* minimum CO_2 targets) would result in average fuel economy and GHG requirements that would not be technologically feasible or economically practicable for manufacturers concentrating on those market segments. In addition, minimum fuel economy targets (*i.e.,* maximum CO_2 targets) are important to mitigate the risk to energy and environmental benefits of potential market shifts toward large vehicles. The agencies also disagree with comments by the Alliance and several individual manufacturers that the cut-off point for light trucks should be shifted to 72 square feet (from the proposed 66 square feet) to ease compliance burdens facing manufacturers serving the large pickup market. Such a shift would increase the risk that energy and environmental benefits of the standards would be compromised by induced increases in the sales of large pickups, in situations where the increased compliance burden is feasible and appropriate. Also, the agencies' market forecast suggests that most of the light trucks models with footprints larger than 66 square feet have curb weights near or above 5,000 pounds. This suggests, in turn, that in terms of highway safety, there is little or no need to discourage downsizing of light trucks with footprints larger than 66 square feet. Based on these energy, environmental, technological feasibility, economic practicability, and safety considerations, the agencies conclude that the light truck curve should be cut off at 66 square feet, as proposed, rather than at 72 square feet. The agencies also disagree with Honda's suggestion that the cut-off point for the smallest trucks be shifted to a larger footprint value, because doing so could potentially increase the incentive to reclassify vehicles in that size range as light trucks, and could thereby increase the possibility that energy and environmental benefits of the rule would be less than projected.

Finally, considering comments by the UC Santa Barbara students regarding difficulties reproducing NHTSA's analysis, NHTSA reexamined its analysis, and discovered some erroneous entries in model inputs underlying the analysis used to develop the curves proposed in the NPRM. These errors are discussed in NHTSA's final Regulatory Impact Analysis (FRIA) and have since been corrected. They include the following: Incorrect valvetrain phasing and lift inputs for many BMW engines, incorrect indexing for some Daimler models, incorrectly enabled valvetrain technologies for rotary engines and Atkinson cycle engines, omitted baseline applications of cylinder deactivation in some Honda and GM engines, incorrect valve phasing codes for some 4-cylinder Chrysler engines, omitted baseline applications of advanced transmissions in some VW models, incorrectly enabled advanced electrification technologies for several hybrid vehicle models, and incorrect DCT effectiveness estimates for subcompact passenger cars. These errors, while not significant enough to impact the overall analysis of stringency, did affect the fitted slope for the passenger car curve and would have prevented precise replication of NHTSA's NPRM analysis by outside parties.

After correcting these errors and repeating the curve development analysis presented in the NPRM, NHTSA obtained the curves shown below in Figures II.C–5 and II.C–6 for passenger cars and light trucks, respectively. The fitted curves are shown with the underlying "maximum technology" passenger car and light truck fleets. For passenger cars, the mean absolute deviation of the sloped portion of the function was 14 percent. For trucks, the corresponding MAD was 10 percent.

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from a normal distribution, and hence fits a curve using a sum-of-squares method to minimize errors. This approach will, in a sample drawn from a non-normal distribution, give excessive weight to outliers by making their presence felt in proportion to the square of their distance from the fitted curve, and, hence, distort the resulting fit. With outliers in the sample, the typical solution is to use a robust method such as a minimum absolute deviation, rather than a squared term, to estimate the fit (*see, e.g.,* "AI Access: Your Access to Data Modeling," at *http://www.aiaccess.net/English/Glossaries/GlosMod/e_gm_O_Pa.htm#Outlier*). The effect on the estimation is to let the presence of each observation be felt more uniformly, resulting in a curve more representative of the data (*see, e.g.,* Peter Kennedy, *A Guide to Econometrics,* 3rd edition, 1992, MIT Press, Cambridge, MA).

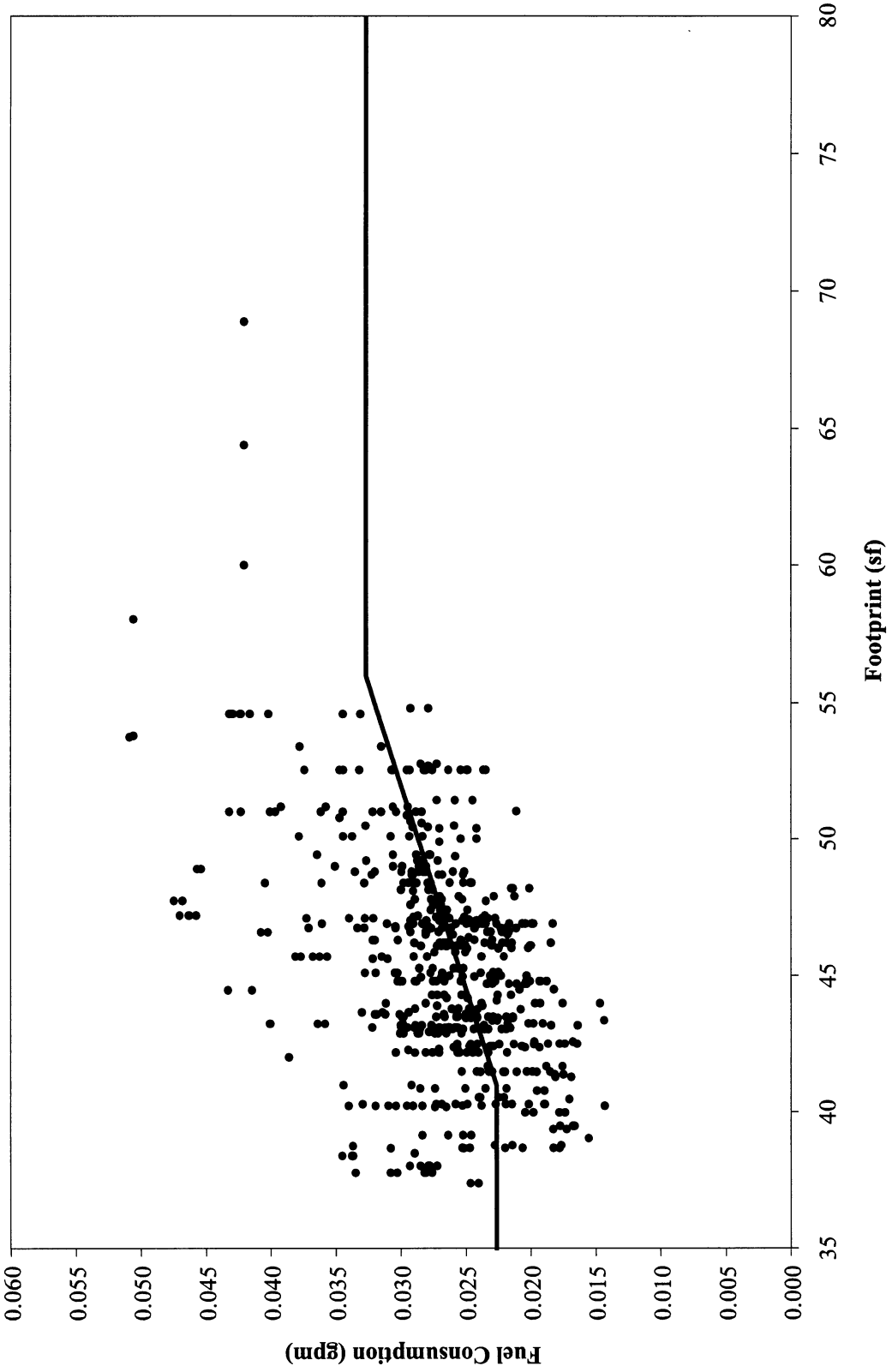

Figure II.C-5 Revised "Maximum Technology" Passenger Fleet with Fitted Constrained Linear Function

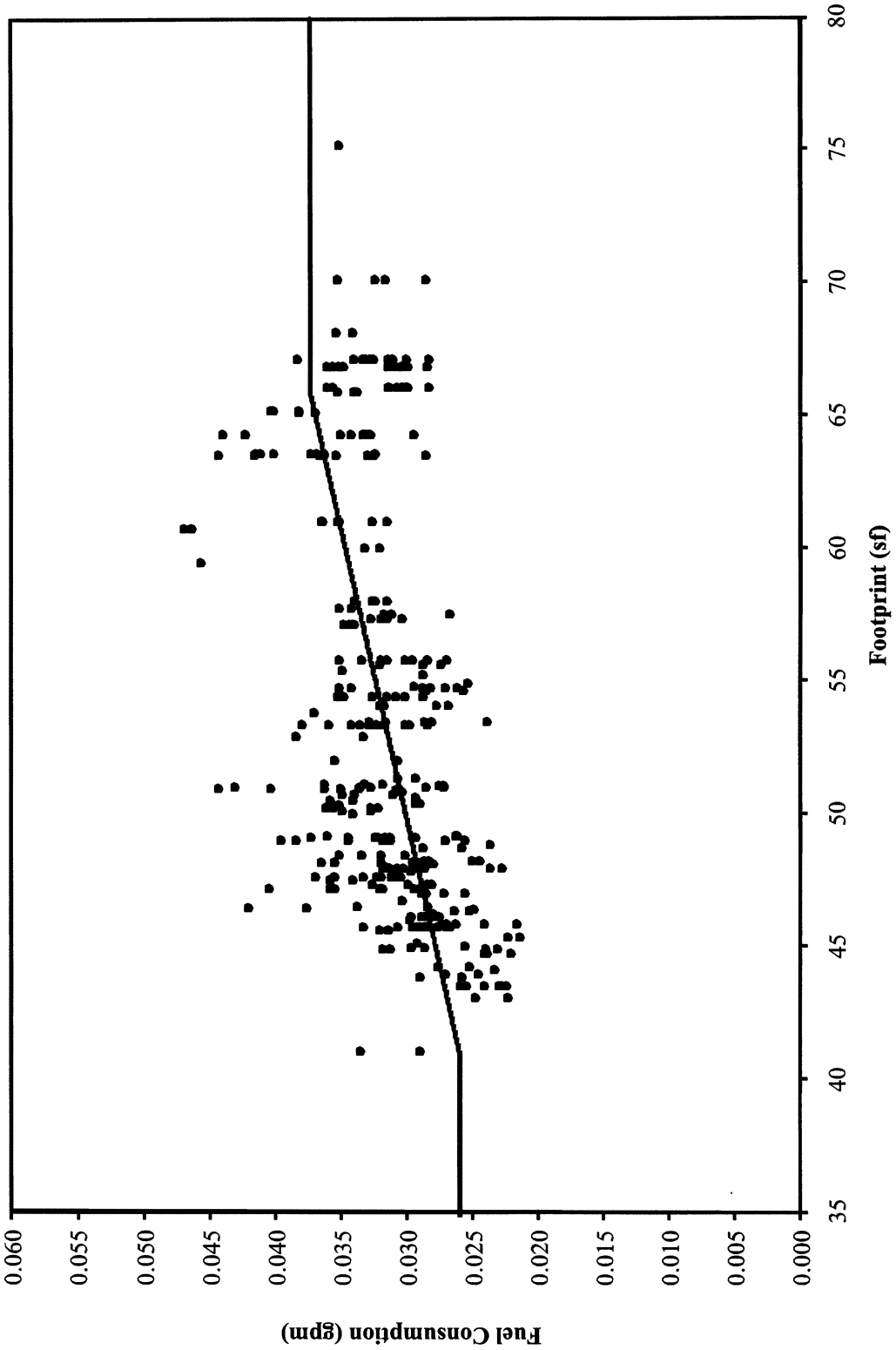

Figure II.C-6 Revised "Maximum Technology" Light Truck with Fitted Constrained Linear Function

This refitted passenger car curve is similar to that presented in the NPRM, and the refitted light truck curve is nearly identical to the corresponding curve in the NPRM. However, the slope of the refitted passenger car curve is about 27 percent steeper (on a gpm per sf basis) than the curve presented in the NPRM. For passenger cars and light trucks, respectively, Figures II.C–7 and II.C–8 show the results of adjustment—discussed in the next section—of the above curves to yield the average required fuel economy levels corresponding to the final standards.

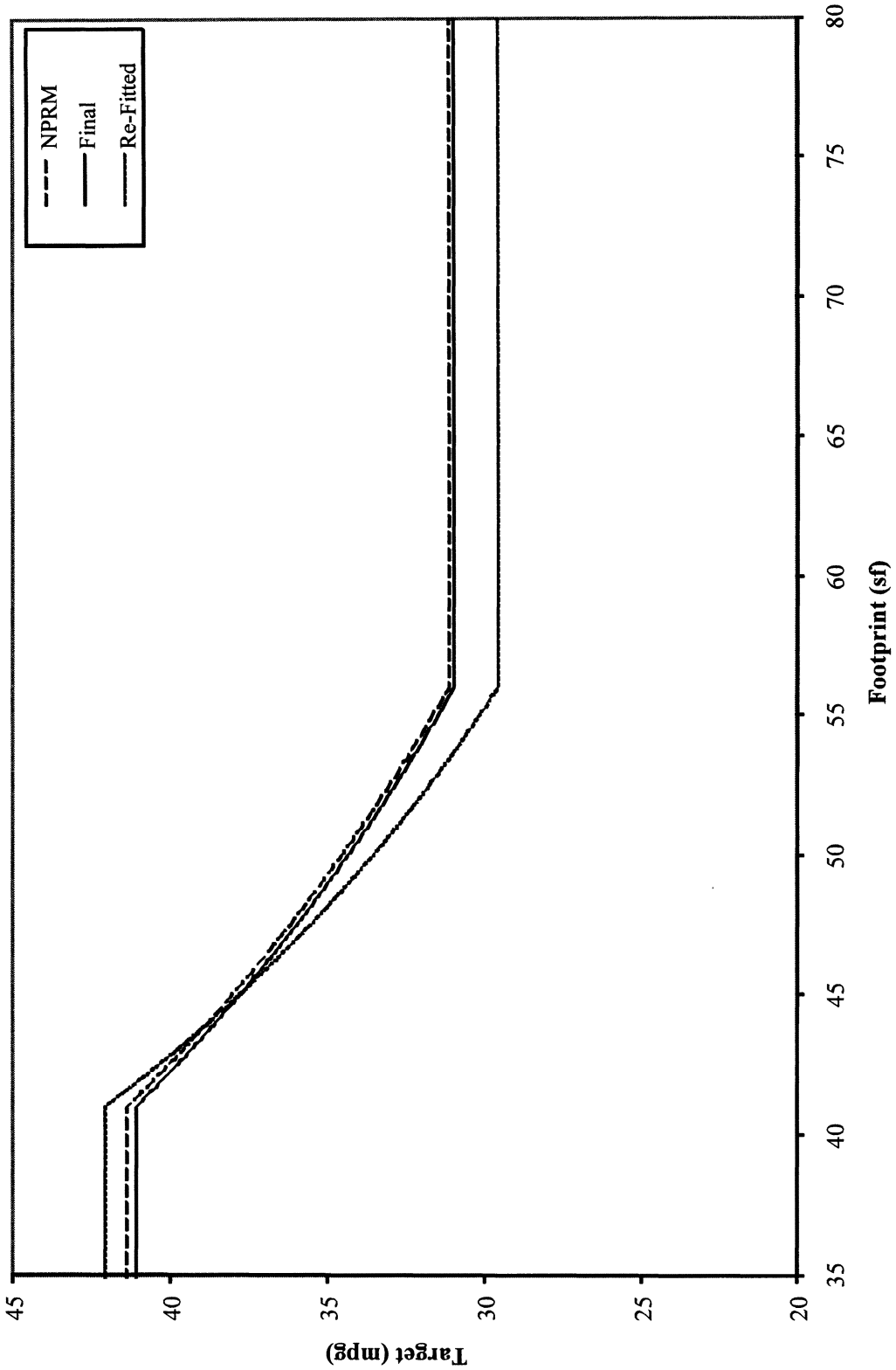

Figure II.C-7 MY 2016 Passenger Car Targets: NPRM, Final Rule, and if Using Re-Fitted Curve

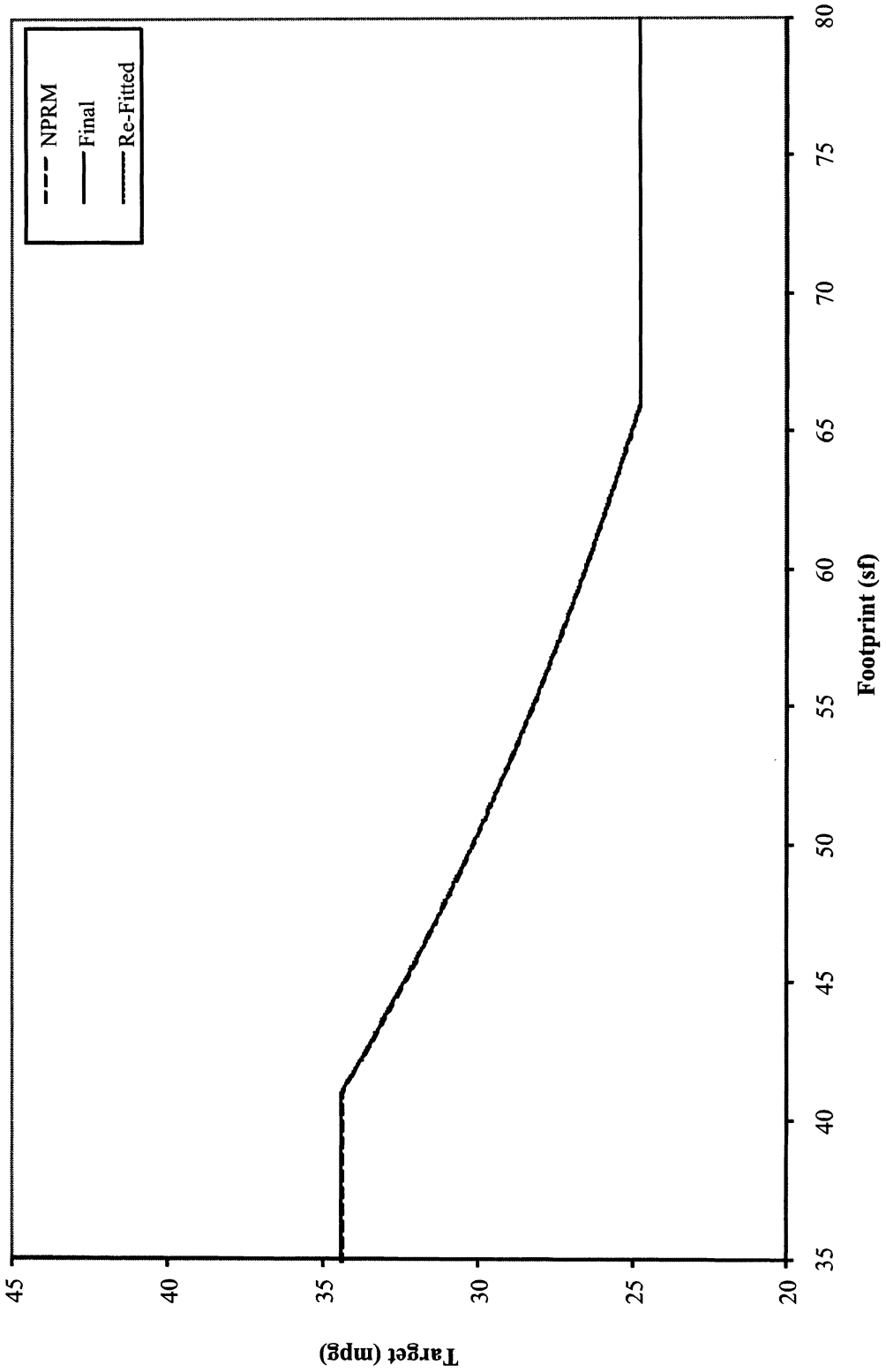

Figure II.C-8 MY 2016 Light Truck Targets: NPRM, Final Rule, and if Using Re-Fitted Curve

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While the resultant light truck curves are visually indistinguishable from one another, the refitted curve for passenger cars would increase stringency for the smallest cars, decrease stringency for the largest cars, and provide a greater incentive to increase vehicle size throughout the range of footprints within which NHTSA and EPA project most passenger car models will be sold through MY 2016. The agencies are concerned that these changes would make it unduly difficult for manufacturers to introduce new small passenger cars in the United States, and unduly risk losses in energy and environmental benefits by increasing incentives for the passenger car market to shift toward larger vehicles.

Also, the agencies note that the refitted passenger car curve produces only a slightly closer fit to the corrected fleet than would the curve estimated in

the NPRM; with respect to the corrected fleet (between the "cut off" footprint values, and after the "maximum technology" analysis discussed above), the mean absolute deviation for the refitted curve is 13.887 percent, and that of a refitted curve held to the original slope is 13.933 percent. In other words, the data support the original slope very nearly as well as they support the refitted slope.

Considering NHTSA's and EPA's concerns regarding the change in incentives that would result from a refitted curve for passenger cars, and considering that the data support the original curves about as well as they would support refitted curves, the agencies are finalizing CAFE and GHG standards based on the curves presented in the NPRM.

Finally, regarding some commenters' inability to reproduce the agencies' NPRM analysis, NHTSA believes that its correction of the errors discussed above and its release (on NHTSA's Web site) of the updated Volpe model and all accompanying inputs and external analysis files should enable outside parties to independently reproduce the agencies' analysis. If outside parties continue to experience difficulty in doing so, we encourage them to contact NHTSA, and the agency will do its best to provide assistance.

Thus, in summary, the agencies' approach to developing the attribute-based mathematical functions for MY 2012–2016 CAFE and CO_2 standards represents the agencies' best technical judgment and consideration of potential outcomes at this time, and we are confident that the conclusions have resulted in appropriate and reasonable standards. The agencies recognize, however, that aspects of these decisions may merit updating or revision in future analysis to support CAFE and CO_2 standards or for other purposes. Consistent with best rulemaking practices, the agencies will take a fresh look at all assumptions and approaches to curve fitting, appropriate attributes, and mathematical functions in the context of future rulemakings.

The agencies also recognized in the NPRM the possibility that lower fuel prices could lead to lower fleetwide fuel economy (and higher CO_2 emissions) than projected in this rule. One way of addressing that concern is through the use of a universal standard—that is, an average standard set at a (single) absolute level. This is often described as a "backstop standard." The agencies explained that under the CAFE program, EISA requires such a minimum average fuel economy standard for domestic passenger cars, but is silent with regard to similar backstops for imported passenger cars and light trucks, while under the CAA, a backstop could be adopted under section 202(a) assuming it could be justified under the relevant statutory criteria. NHTSA and EPA also noted that the flattened portions of the curves at the largest footprints directionally address the issue of a backstop (*i.e.,* the mpg "floor" or gpm "ceiling" applied to the curves provides a universal and absolute value for that range of footprints). The agencies sought comment on whether backstop standards, or any other method within the agencies' statutory authority, should and can be implemented in order to guarantee a level of CO_2 emissions reductions and fuel savings under the attribute-based standards.

The agencies received a number of comments regarding the need for a backstop beyond NHTSA's alternative minimum standard. Comments were divided fairly evenly between support for and opposition to additional backstop standards. The following organizations supported the need for EPA and NHTSA to have explicit backstop standards: American Council for an Energy Efficient Economy (ACEEE), American Lung Association, California Air Resources Board (CARB), Environment America, Environment Defense Fund, Massachusetts Department of Environmental Protection, Natural Resources Defense Council (NRDC), Northeast States for Coordinated Air Use Management (NESCAUM), Public Citizen and Safe Climate Campaign, Sierra Club, State of Washington Department of Ecology, Union of Concerned Scientists, and a number of private citizens. Commenters in favor of additional backstop standards for all fleets for both NHTSA and EPA [66] generally stated that the emissions reductions and fuel savings expected to be achieved by MY 2016 depended on assumptions about fleet mix that might not come to pass, and that various kinds of backstop standards or "ratchet mechanisms" [67] were necessary to ensure that those reductions were achieved in fact. In addition, some commenters [68] stated that manufacturers might build larger vehicles or more trucks during MYs 2012–2016 than the agencies project, for example, because (1) any amount of slope in target curves encourages manufacturers to upsize, and (2) lower targets for light trucks than for passenger cars encourage manufacturers to find ways to reclassify vehicles as light trucks, such as by dropping 2WD versions of SUVs and offering only 4WD versions, perhaps spurred by NHTSA's reclassification of 2WD SUVs as passenger cars. Both of these mechanisms will be addressed further below. Some commenters also discussed EPA authority under the CAA to set backstops,[69] agreeing with EPA's analysis that section 202(a) allows such standards since EPA has wide discretion under that section to craft standards.

The following organizations opposed a backstop: Alliance of Automobile Manufacturers (AAM), Association of International Automobile Manufacturers (AIAM), Ford Motor Company, National Automobile Dealers Association (NADA), Toyota Motor Company, and the United Auto Workers Union. Commenters stating that additional backstops would not be necessary disagreed that upsizing was likely,[70] and emphasized the anti-backsliding characteristics of the target curves. Others argued that universal absolute standards as backstops could restrict consumer choice of vehicles. Commenters making legal arguments under EPCA/EISA[71] stated that Congress' silence regarding backstops for imported passenger cars and light trucks should be construed as a lack of authority for NHTSA to create further backstops. Commenters making legal arguments under the CAA[72] focused on the lack of clear authority under the CAA to create multiple GHG emissions standards for the same fleets of vehicles based on the same statutory criteria, and opposed EPA taking steps that would reduce harmonization with NHTSA in standard setting. Furthermore, AIAM indicated that EISA's requirement that the combined (car and truck) fuel economy level reach at least 35 mpg by

[66] ACEEE, American Lung Association, CARB, Christopher Lish, Environment America, EDF, MA DEP, NRDC, NESCAUM, Public Citizen, Sierra Club *et al.,* SCAQMD, UCS, WA DE.

[67] Commenters generally defined a "ratchet mechanism" as an automatic re-calculation of stringency to ensure cumulative goals are reached by 2016, even if emissions reductions and fuel savings fall short in the earlier years covered by the rulemaking.

[68] CBD, MA DEP, NJ DEP, Public Citizen, Sierra Club *et al.,* UCS.

[69] CARB, Public Citizen, Sierra Club *et al.*

[70] For example, the Alliance and Toyota said that upsizing would not be likely because (1) it would not necessarily make compliance with applicable standards easier, since larger vehicles tend to be heavier and heavier vehicles tend to achieve worse fuel economy/emissions levels; (2) it may require expensive platform changes; (3) target curves become increasingly more stringent from year to year, which reduces the benefits of upsizing; and (4) the mpg floor and gpm ceiling for the largest vehicles (the point at which the curve is "cut off") discourages manufacturers from continuing to upsize beyond a point because doing so makes it increasingly difficult to meet the flat standard at that part of the curve.

[71] AIAM, Alliance, Ford, NADA, Toyota.

[72] Alliance, Ford, NADA, UAW.

2020 itself constitutes a backstop.[73] One individual[74] commented that while additional backstop standards might be necessary given optimism of fleet mix assumptions, both agencies' authorities would probably need to be revised by Congress to clarify that backstop standards (whether for individual fleets or for the national fleet as a whole) were permissible.

In response, EPA and NHTSA remain confident that their projections of the future fleet mix are reliable, and that future changes in the fleet mix of footprints and sales are not likely to lead to more than modest changes in projected emissions reductions or fuel savings.[75] Both agencies thus remain confident in these fleet projections and the resulting emissions reductions and fuel savings from the standards. As explained in Section II.B above, the agencies' projections of the future fleet are based on the most transparent information currently available to the agencies. In addition, there are only a relatively few model years at issue. Moreover, market trends today are consistent with the agencies' estimates, showing shifts from light trucks to passenger cars and increased emphasis on fuel economy from all vehicles.

Finally, the shapes of the curves, including the "flattening" at the largest footprint values, tend to avoid or minimize regulatory incentives for manufacturers to upsize their fleet to change their compliance burden. Given the way the curves are fit to the data points (which represent vehicle models' fuel economy mapped against their footprint), the agencies believe that there is little real benefit to be gained by a manufacturer upsizing their vehicles. As discussed above, the agencies' analysis indicates that, for passenger car models with footprints falling between the two flattened portions of the corresponding curve, the actual slope of fuel economy with respect to footprint, if fit to that data by itself, is about 27 percent steeper than the curve the agencies are promulgating today. This difference suggests that manufacturers would, if anything, have more to gain by reducing vehicle footprint than by increasing vehicle footprint. For light trucks, the agencies' analysis indicates that, for models with footprints falling between the two flatted portions of the corresponding curve, the slope of fuel economy with respect to footprint is nearly identical to the curve the agencies are promulgating today. This suggests that, within this range, manufacturers would typically have little incentive to either incrementally increase or reduce vehicle footprint. The agencies recognize that based on economic and consumer demand factors that are external to this rule, the distribution of footprints in the future may be different (either smaller or larger) than what is projected in this rule. However, the agencies continue to believe that there will not be significant shifts in this distribution as a direct consequence of this rule.

At the same time, adding another backstop standard would have virtually no effect if the standard was weak, but a more stringent backstop could compromise the objectives served by attribute-based standards—that they distribute compliance burdens more equally among manufacturers, and at the same time encourage manufacturers to apply fuel-saving technologies rather than simply downsizing their vehicles, as they did in past decades under flat standards. This is why Congress mandated attribute-based CAFE standards in EISA. This compromise in objectives could occur for any manufacturer whose fleet average was above the backstop, irrespective of why they were above the backstop and irrespective of whether the industry as a whole was achieving the emissions and fuel economy benefits projected for the final standards, the problem the backstop is supposed to address. For example, the projected industry wide level of 250 gm/mile for MY 2016 is based on a mix of manufacturer levels, ranging from approximately 205 to 315 gram/mile[76] but resulting in an industry wide basis in a fleet average of 250 gm/mile. Unless the backstop was at a very weak level, above the high end of this range, then some percentage of manufacturers would be above the backstop even if the performance of the entire industry remains fully consistent with the emissions and fuel economy levels projected for the final standards. For these manufacturers and any other manufacturers who were above the backstop, the objectives of an attribute based standard would be compromised and unnecessary costs would be imposed. This could directionally impose increased costs for some manufacturers. It would be difficult if not impossible to establish the level of a backstop standard such that costs are likely to be imposed on manufacturers only when there is a failure to achieve the projected reductions across the industry as a whole. An example of this kind of industry wide situation could be when there is a significant shift to larger vehicles across the industry as a whole, or if there is a general market shift from cars to trucks. The problem the agencies are concerned about in those circumstances is not with respect to any single manufacturer, but rather is based on concerns over shifts across the fleet as a whole, as compared to shifts in one manufacturer's fleet that may be more than offset by shifts the other way in another manufacturer's fleet. However, in this respect, a traditional backstop acts as a manufacturer specific standard.

The concept of a ratchet mechanism recognizes this problem, and would impose the new more stringent standard only when the problem arises across the industry as a whole. While the new more stringent standards would enter into force automatically, any such standards would still need to provide adequate lead time for the manufacturers. Given the limited number of model years covered by this rulemaking and the short lead-time already before the 2012 model year, a ratchet mechanism in this rulemaking that would automatically tighten the standards at some point after model year 2012 is finished and apply the new more stringent standards for model

[73] NHTSA and EPA agree with AIAM that the EISA 35 mpg requirement in MY 2020 has a backstop-like function, in that it requires a certain level of achieved fleetwide fuel economy by a certain date, although it is not literally a backstop standard. Considering that NHTSA's MY 2011 CAFE standards increased projected average fuel economy requirements (relative to the MY 2010 standards) at a significantly faster rate than would be required to achieve the 35-in-2020 requirement, and considering that the standards being finalized today would increase projected average combined fuel economy requirements to 34.1 mpg in MY 2016, four years before MY 2020, the agencies believe that the U.S. vehicle market would have to shift in highly unexpected ways in order to put the 35-in-2020 requirement at risk, even despite the fact that due to the attribute-based standards, average fuel economy requirements will vary depending on the mix of vehicles produced for sale in the U.S. in each model year. The agencies further emphasize that both NHTSA and EPA plan to conduct and document retrospective analyses to evaluate how the market's evolution during the rulemaking timeframe compares with the agencies' forecasts employed for this rulemaking. Additionally, we emphasize that both agencies have the authority, given sufficient lead time, to revise their standards upwards if necessary to avoid missing the 35-in-2020 requirement.

[74] Schade.

[75] For reference, NHTSA's March 2009 final rule establishing MY 2011 CAFE standards was based on a forecast that passenger cars would represent 57.6 percent of the MY 2011 fleet, and that MY 2011 passenger cars and light trucks would average 45.6 square feet (sf) and 55.1 sf, respectively, such that average required CAFE levels would be 30.2 mpg, 24.1 mpg, and 27.3 mpg, respectively, for passenger cars, light trucks, and the overall light-duty fleet. Based on the agencies' current market forecast, even as soon as MY 2011, passenger cars will comprise a *larger* share (59.2 percent) of the light vehicle market; passenger cars and light trucks will, on average, be smaller by 0.5 sf and 1.3 sf, respectively; and average required CAFE levels will be higher by 0.2 mpg, 0.3 mpg, and 0.3 mpg, respectively, for passenger cars, light trucks, and the overall light-duty fleet.

[76] Based on estimated standards presented in Tables III.B.1–1 and III.B.1–2.

years 2016 or earlier, would fail to provide adequate lead time for any new, more stringent standards

Additionally, we do not believe that the risk of vehicle upsizing or changing vehicle offerings to "game" the passenger car and light truck definitions is as great as commenters imply for the model years in question.[77] The changes that commenters suggest manufacturers might make are neither so simple nor so likely to be accepted by consumers. For example, 4WD versions of vehicles tend to be more expensive and, other things being equal, have inherently lower fuel economy than their 2WD equivalent models. Therefore, although there is a market for 4WD vehicles, and some consumers might shift from 2WD vehicles to 4WD vehicles if 4WD becomes available at little or no extra cost, many consumers still may not desire to purchase 4WD vehicles because of concerns about cost premium and additional maintenance requirements; conversely, many manufacturers often require the 2WD option to satisfy demand for base vehicle models. Additionally, increasing the footprint of vehicles requires platform changes, which usually requires a product redesign phase (the agencies estimate that this occurs on average once every 5 years for most models). Alternatively, turning many 2WD SUVs into 2WD light trucks would require manufacturers to squeeze a third row of seats in or significantly increase their GVWR, which also requires a significant change in the vehicle.[78] The agencies are confident that the anticipated increases in average fuel economy and reductions in average CO_2 emission rates can be achieved without backstops under EISA or the CAA. As noted above, the agencies plan to conduct retrospective analysis to monitor progress. Both agencies have the authority to revise standards if warranted, as long as sufficient lead time is provided.

The agencies acknowledge that the MY 2016 fleet emissions and fuel economy goals of 250 g/mi and 34.1 mpg for EPA and NHTSA respectively are estimates and not standards (the MY 2012–2016 curves are the standards). Changes in fuel prices, consumer preferences, and/or vehicle survival and mileage accumulation rates could result in either smaller or larger oil and GHG savings. As explained above and elsewhere in the rule, the agencies believe that the possibility of not meeting (or, alternatively, exceeding) fuel economy and emissions goals exists, but is not likely. Given this, and given the potential complexities in designing an appropriate backstop, the agencies believe the balance here points to not adopting additional backstops at this time for the MYs 2012–2016 standards other than NHTSA's finalizing of the ones required by EPCA/EISA for domestic passenger cars. Nevertheless, the agencies recognize there are many factors that are inherently uncertain which can affect projections in the future, including fuel price and other factors which are unrelated to the standards contained in this final rule. Such factors can affect consumer preferences and are difficult to predict. At this time and based on the available information, the agencies have not included a backstop for model years 2012–2016. However, if circumstances change in the future in unanticipated ways, the agencies may revisit the issue of a backstop in the context of a future rulemaking either for model years 2012–2016 or as needed for standards for model years beyond 2016. This issue will be discussed further in Sections III and IV.

D. Relative Car-Truck Stringency

The agencies proposed fleetwide standards with the projected levels of stringency of 34.1 mpg or 250 g/mi in MY 2016 (as well as the corresponding intermediate year fleetwide standards) for NHTSA and EPA respectively. To determine the relative stringency of passenger car and light truck standards for those model years, the agencies were concerned that increasing the difference between the car and truck standards (either by raising the car standards or lowering the truck standards) could encourage manufacturers to build fewer cars and more trucks, likely to the detriment of fuel economy and CO_2 reductions.[79] In order to maintain consistent car/truck standards, the agencies applied a constant ratio between the estimated average required performance under the passenger car and light truck standards, in order to maintain a stable set of incentives regarding vehicle classification.

To calculate relative car-truck stringency for the proposal, the agencies explored a number of possible alternatives, and for the reasons described in the proposal used the Volpe model in order to estimate stringencies at which net benefits would be maximized. The agencies have followed the same approach in calculating the relative car-truck stringency for the final standards promulgated today. Further details of the development of this approach can be found in Section IV of this preamble as well as in NHTSA's RIA and EIS. NHTSA examined passenger car and light truck standards that would produce the proposed combined average fuel economy levels from Table I.B.2–2 above. NHTSA did so by shifting downward the curves that maximize net benefits, holding the relative stringency of passenger car and light truck standards constant at the level determined by maximizing net benefits, such that the average fuel economy required of passenger cars remained 31 percent higher than the average fuel economy required of light trucks. This methodology resulted in the average fuel economy levels for passenger cars and light trucks during MYs 2012–2016 as shown in Table I.B.1–1. The following chart illustrates this methodology of shifting the standards from the levels maximizing net benefits to the levels consistent with the combined fuel economy standards in this final rule.

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[77] We note that NHTSA's recent clarification of the light truck definitions has significantly reduced the potential for gaming, and resulted in the reclassification of over a million vehicles from the light truck to the passenger car fleet.

[78] Increasing the GVWR of a light truck (assuming this was the only goal) can be accomplished in a number of ways, and must include consideration of: (1) Redesign of wheel axles; (2) improving the vehicle suspension; (3) changes in tire specification (which will likely affect ride quality); (4) vehicle dynamics development (especially with vehicles equipped with electronic stability control); and (5) brake redesign. Depending on the vehicle, some of these changes may be easier or more difficult than others.

[79] For example, since many 2WD SUVs are classified as passenger cars, manufacturers have already warned that high car standards relative to truck standards could create an incentive for them to drop the 2WD version and sell only the 4WD version.

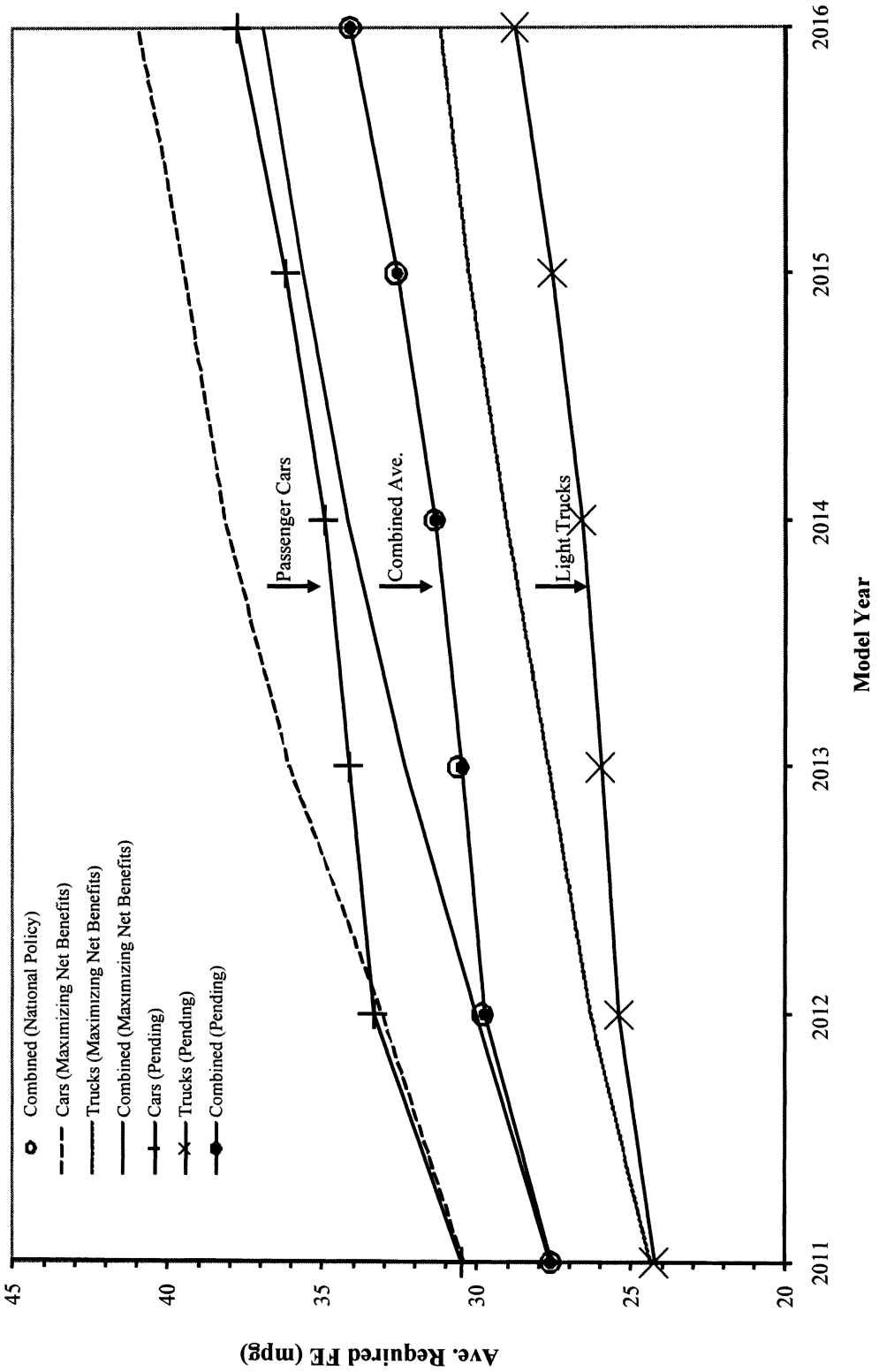

Figure II.D-1 Shifting the Standards from the Maximizing Net Benefit Levels to the Levels Consistent with the Combined Fuel Economy Standards in this Rule

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The final car and truck standards for EPA (Table I.B.1–4 above) were subsequently determined by first converting the average required fuel economy levels to average required CO_2 emission rates, and then applying the expected air conditioning credits for 2012–2016. These A/C credits are shown in the following table. Further details of the derivation of these factors can be found in Section III of this preamble or in the EPA RIA.

[80] We assume slightly higher A/C penetration in 2012 than was assumed in the proposal only to

Continued

TABLE II.D–1 EXPECTED FLEET A/C CREDITS (IN CO_2 EQUIVALENT g/mi) FROM 2012–2016

	Average technology penetration (%)	Average credit for cars	Average credit for trucks	Average credit for combined fleet
2012	[80] 28	3.4	3.8	3.5
2013	40	4.8	5.4	5.0
2014	60	7.2	8.1	7.5
2015	80	9.6	10.8	10.0
2016	85	10.2	11.5	10.6

The agencies sought comment on the use of this methodology for apportioning the fleet stringencies to relative car and truck standards for 2012–2016. General Motors commented that, compared to the passenger car standard, the light truck standard is too stringent because "the most fuel efficient cars and small trucks already meet the 2016 MY requirements" but "the most fuel efficient large trucks must increase fuel economy by 20 percent to meet the 2016 MY requirements." GM recommended that the agencies relax stringency specifically for large pickups, such as the Silverado.

The agencies disagree with the premise of the comment that the standard is too stringent under the applicable statutory provisions because some existing large trucks are not already meeting a later model year standard. Our analysis shows that the standards are not too stringent for manufacturers selling these vehicles. The agencies' analyses demonstrate a means by which manufacturers could apply cost-effective technologies in order to achieve the standards, and we have provided adequate lead time for the technology to be applied. More important, the agencies' analysis demonstrate that the fleetwide emission standards for MY 2016 are technically feasible, for example by implementing technologies such as engine downsizing, turbocharging, direct injection, improving accessories and tire rolling resistance, etc.

GM did not comment on the use of the methodology applied by the agencies to develop the gap between the passenger car and light truck standards—only on the outcome of the methodology. For the reasons discussed below, the agencies maintain that the methodology applied above provides an appropriate basis to determine the gap between the passenger car and light truck standards, and disagree with GM's arguments that the outcome is unfair.

First, GM's argument incorrectly suggests that every individual vehicle model must achieve its fuel economy and emissions targets. CAFE standards and new GHG emissions standards apply to fleetwide average performance, not model-specific performance, even though average required levels are based on average model-specific targets, and the agencies' analysis demonstrates that GM and other manufacturers of large trucks can cost-effectively comply with the new standards.

Second, GM implies that every manufacturer must be challenged equally with respect to fuel economy and emissions. Although NHTSA and EPA maintain that attribute-based CAFE and GHG emissions standards can more evenly balance compliance challenges, attribute-based standards are not intended to and cannot make these challenges equal, and while the agencies are mindful of the potential impacts of the standards on the relative competitiveness of different vehicle manufacturers, there is nothing in EPCA or the CAA [81] requiring that these challenges be equal.

We have also already addressed and rejected GM's suggestion of shifting the "cut off" point for light trucks from 66 square feet to 72 square feet, thereby "dropping the floor" of the target function for light trucks. As discussed in the preceding section, this is so as not to forego the rules' energy and environmental benefits, and because there is little or no safety basis to discourage downsizing of the largest light trucks.

Finally, NHTSA and EPA disagree with GM's claim that the outcome of the agencies' approach is unfairly burdensome for light trucks as compared to passenger cars. Based on the agencies' market forecast, NHTSA's analysis indicates that incremental technology outlays could, on average, be comparable for passenger cars and light trucks under the final CAFE standards, and further indicates that the ratio of total benefits to total costs could be greater under the final light truck standards than under the final passenger car standards.

E. Joint Vehicle Technology Assumptions

Vehicle technology assumptions, *i.e.,* assumptions about technologies' cost, effectiveness, and the rate at which they can be incorporated into new vehicles, are often controversial as they have a significant impact on the levels of the standards. The agencies must, therefore, take great care in developing and justifying these estimates. In developing technology inputs for the analysis of the MY 2012–2016 standards, the agencies reviewed the technology assumptions that NHTSA used in setting the MY 2011 standards, the comments that NHTSA received in response to its May 2008 Notice of Proposed Rulemaking (NPRM), and the comments received in response to the NPRM for this rule. This review is consistent with the request by President Obama in his January 26 memorandum to DOT. In addition, the agencies reviewed the technology input

correct for rounding that occurred in the curve setting process.

[81] As NHTSA explained in the NPRM, the Conference Report for EPCA, as enacted in 1975, makes clear, and the case law affirms, "a determination of maximum feasible average fuel economy should not be keyed to the single manufacturer which might have the most difficulty achieving a given level of average fuel economy." *CEI–I,* 793 F.2d 1322, 1352 (D.C. Cir. 1986). Instead, NHTSA is compelled "to weigh the benefits to the nation of a higher fuel economy standard against the difficulties of individual automobile manufacturers." *Id.* The law permits CAFE standards exceeding the projected capability of any particular manufacturer as long as the standard is economically practicable for the industry as a whole. Similarly, EPA is afforded great discretion under section 202(a) of the CAA to balance issues of technical feasibility, cost, adequacy of lead time, and safety, and certainly is not required to do so in a manner that imposes regulatory obligations uniformly on each manufacturer. *See NRDC* v. *EPA,* 655 F. 2d 318, 322, 328 (D.C. Cir. 1981) (wide discretion afforded by the statutory factors, and EPA predictions of technical feasibility afforded considerable discretion subject to constraints of reasonableness EPA predictions of technical feasibility afforded considerable discretion subject to constraints of reasonableness); and cf. *International Harvester Co.* v. *Ruckelshaus,* 479 F. 2d 615, 640 (D.C. Cir. 1973) ("as long as feasible technology permits the demand for new passenger automobiles to be generally met, the basic requirements of the Act would be satisfied, even though this might occasion fewer models and a more limited choice of engine types").

estimates identified in EPA's July 2008 Advance Notice of Proposed Rulemaking. The review of these documents was supplemented with updated information from more current literature, new product plans from manufacturers, and from EPA certification testing.

As a general matter, EPA and NHTSA believe that the best way to derive technology cost estimates is to conduct real-world tear down studies. Most of the commenters on this issue agreed. The advantages not only lie in the rigor of the approach, but also in its transparency. These studies break down each technology into its respective components, evaluate the costs of each component, and build up the costs of the entire technology based on the contribution of each component and the processes required to integrate them. As such, tear down studies require a significant amount of time and are very costly. EPA has been conducting tear down studies to assess the costs of vehicle technologies under a contract with FEV. Further details for this methodology is described below and in the TSD.

Due to the complexity and time incurred in a tear down study, only a few technologies evaluated in this rulemaking have been costed in this manner thus far. The agencies prioritized the technologies to be costed first based on how prevalent the agencies believed they might be likely to be during the rulemaking time frame, and based on their anticipated cost-effectiveness. The agencies believe that the focus on these important technologies (listed below) is sufficient for the analysis in this rule, but EPA is continuing to analyze more technologies beyond this rule as part of studies both already underway and in the future. For most of the other technologies, because tear down studies were not yet available, the agencies decided to pursue, to the extent possible, the Bill of Materials (BOM) approach as outlined in NHTSA's MY 2011 final rule. A similar approach was used by EPA in the EPA 2008 Staff Technical Report. This approach was recommended to NHTSA by Ricardo, an international engineering consulting firm retained by NHTSA to aid in the analysis of public comments on its proposed standards for MYs 2011–2015 because of its expertise in the area of fuel economy technologies. A BOM approach is one element of the process used in tear down studies. The difference is that under a BOM approach, the build up of cost estimates is conducted based on a review of cost and effectiveness estimates for each component from available literature, while under a tear down study, the cost estimates which go into the BOM come from the tear down study itself. To the extent that the agencies departed from the MY 2011 CAFE final rule estimates, the agencies explained the reasons and provided supporting analyses in the Technical Support Document.

Similarly, the agencies followed a BOM approach for developing the technology effectiveness estimates, insofar as the BOM developed for the cost estimates helped to inform the appropriate effectiveness values derived from the literature review. The agencies supplemented the information with results from available simulation work and real world EPA certification testing.

The agencies would also like to note that per the Energy Independence and Security Act (EISA), the National Academies of Sciences has been conducting a study for NHTSA to update Chapter 3 of their 2002 NAS Report, which presents technology effectiveness estimates for light-duty vehicles. The update takes a fresh look at that list of technologies and their associated cost and effectiveness values. The updated NAS report was expected to be available on September 30, 2009, but has not been completed and released to the public. The results from this study thus are unavailable for this rulemaking. The agencies look forward to considering the results from this study as part of the next round of rulemaking for CAFE/GHG standards.

1. What technologies did the agencies consider?

The agencies considered over 35 vehicle technologies that manufacturers could use to improve the fuel economy and reduce CO_2 emissions of their vehicles during MYs 2012–2016. The majority of the technologies described in this section are readily available, well known, and could be incorporated into vehicles once production decisions are made. Other technologies considered may not currently be in production, but are beyond the research phase and under development, and are expected to be in production in the next few years. These are technologies which can, for the most part, be applied both to cars and trucks, and which are capable of achieving significant improvements in fuel economy and reductions in CO_2 emissions, at reasonable costs. The agencies did not consider technologies in the research stage because the lead time available for this rule is not sufficient to move most of these technologies from research to production.

The technologies considered in the agencies' analysis are briefly described below. They fall into five broad categories: Engine technologies, transmission technologies, vehicle technologies, electrification/accessory technologies, and hybrid technologies. For a more detailed description of each technology and their costs and effectiveness, we refer the reader to Chapter 3 of the Joint TSD, Chapter III of NHTSA's FRIA, and Chapter 1 of EPA's final RIA. Technologies to reduce CO_2 and HFC emissions from air conditioning systems are discussed in Section III of this preamble and in EPA's final RIA.

Types of engine technologies that improve fuel economy and reduce CO_2 emissions include the following:

- *Low-friction lubricants*—low viscosity and advanced low friction lubricants oils are now available with improved performance and better lubrication. If manufacturers choose to make use of these lubricants, they would need to make engine changes and possibly conduct durability testing to accommodate the low-friction lubricants.
- *Reduction of engine friction losses*—can be achieved through low-tension piston rings, roller cam followers, improved material coatings, more optimal thermal management, piston surface treatments, and other improvements in the design of engine components and subsystems that improve engine operation.
- *Conversion to dual overhead cam with dual cam phasing*—as applied to overhead valves designed to increase the air flow with more than two valves per cylinder and reduce pumping losses.
- *Cylinder deactivation*—deactivates the intake and exhaust valves and prevents fuel injection into some cylinders during light-load operation. The engine runs temporarily as though it were a smaller engine which substantially reduces pumping losses.
- *Variable valve timing*—alters the timing of the intake valve, exhaust valve, or both, primarily to reduce pumping losses, increase specific power, and control residual gases.
- *Discrete variable valve lift*—increases efficiency by optimizing air flow over a broader range of engine operation which reduces pumping losses. Accomplished by controlled switching between two or more cam profile lobe heights.
- *Continuous variable valve lift*—is an electromechanically controlled system in which valve timing is changed as lift height is controlled. This yields a wide range of performance

optimization and volumetric efficiency, including enabling the engine to be valve throttled.

• *Stoichiometric gasoline direct-injection technology*—injects fuel at high pressure directly into the combustion chamber to improve cooling of the air/fuel charge within the cylinder, which allows for higher compression ratios and increased thermodynamic efficiency.

• *Combustion restart*—can be used in conjunction with gasoline direct-injection systems to enable idle-off or start-stop functionality. Similar to other start-stop technologies, additional enablers, such as electric power steering, accessory drive components, and auxiliary oil pump, might be required.

• *Turbocharging and downsizing*—increases the available airflow and specific power level, allowing a reduced engine size while maintaining performance. This reduces pumping losses at lighter loads in comparison to a larger engine.

• *Exhaust-gas recirculation boost*—increases the exhaust-gas recirculation used in the combustion process to increase thermal efficiency and reduce pumping losses.

• *Diesel engines*—have several characteristics that give superior fuel efficiency, including reduced pumping losses due to lack of (or greatly reduced) throttling, and a combustion cycle that operates at a higher compression ratio, with a very lean air/fuel mixture, relative to an equivalent-performance gasoline engine. This technology requires additional enablers, such as NO_X trap catalyst after-treatment or selective catalytic reduction NO_X after-treatment. The cost and effectiveness estimates for the diesel engine and aftertreatment system utilized in this final rule have been revised from the NHTSA MY 2011 CAFE final rule. Additionally, the diesel technology option has been made available to small cars in the Volpe and OMEGA models. Though this is not expected to make a significant difference in the modeling results, the agencies agreed with the commenters that supported such a revision.

Types of transmission technologies considered include:

• *Improved automatic transmission controls*— optimizes shift schedule to maximize fuel efficiency under wide ranging conditions, and minimizes losses associated with torque converter slip through lock-up or modulation.

• *Six-, seven-, and eight-speed automatic transmissions*—the gear ratio spacing and transmission ratio are optimized to enable the engine to operate in a more efficient operating range over a broader range of vehicle operating conditions.

• *Dual clutch or automated shift manual transmissions*—are similar to manual transmissions, but the vehicle controls shifting and launch functions. A dual-clutch automated shift manual transmission uses separate clutches for even-numbered and odd-numbered gears, so the next expected gear is pre-selected, which allows for faster and smoother shifting.

• *Continuously variable transmission*—commonly uses V-shaped pulleys connected by a metal belt rather than gears to provide ratios for operation. Unlike manual and automatic transmissions with fixed transmission ratios, continuously variable transmissions can provide fully variable and an infinite number of transmission ratios that enable the engine to operate in a more efficient operating range over a broader range of vehicle operating conditions.

• *Manual 6-speed transmission*—offers an additional gear ratio, often with a higher overdrive gear ratio, than a 5-speed manual transmission.

Types of vehicle technologies considered include:

• *Low-rolling-resistance tires*—have characteristics that reduce frictional losses associated with the energy dissipated in the deformation of the tires under load, thereby improving fuel economy and reducing CO_2 emissions.

• *Low-drag brakes*—reduce the sliding friction of disc brake pads on rotors when the brakes are not engaged because the brake pads are pulled away from the rotors.

• *Front or secondary axle disconnect for four-wheel drive systems*—provides a torque distribution disconnect between front and rear axles when torque is not required for the non-driving axle. This results in the reduction of associated parasitic energy losses.

• *Aerodynamic drag reduction*—is achieved by changing vehicle shape or reducing frontal area, including skirts, air dams, underbody covers, and more aerodynamic side view mirrors.

• *Mass reduction and material substitution*—Mass reduction encompasses a variety of techniques ranging from improved design and better component integration to application of lighter and higher-strength materials. Mass reduction is further compounded by reductions in engine power and ancillary systems (transmission, steering, brakes, suspension, etc.). The agencies recognize there is a range of diversity and complexity for mass reduction and material substitution technologies and there are many techniques that automotive suppliers and manufacturers are using to achieve the levels of this technology that the agencies have modeled in our analysis for the final standards.

Types of electrification/accessory and hybrid technologies considered include:

• *Electric power steering (EPS)*—is an electrically-assisted steering system that has advantages over traditional hydraulic power steering because it replaces a continuously operated hydraulic pump, thereby reducing parasitic losses from the accessory drive.

• *Improved accessories (IACC)*—may include high efficiency alternators, electrically driven (*i.e.,* on-demand) water pumps and cooling fans. This excludes other electrical accessories such as electric oil pumps and electrically driven air conditioner compressors. The latter is covered explicitly within the A/C credit program.

• *Air Conditioner Systems*—These technologies include improved hoses, connectors and seals for leakage control. They also include improved compressors, expansion valves, heat exchangers and the control of these components for the purposes of improving tailpipe CO_2 emissions as a result of A/C use. These technologies are discussed later in this preamble and covered separately in the EPA RIA.

• *12-volt micro-hybrid (MHEV)*—also known as idle-stop or start-stop and commonly implemented as a 12-volt belt-driven integrated starter-generator, this is the most basic hybrid system that facilitates idle-stop capability. Along with other enablers, this system replaces a common alternator with a belt-driven enhanced power starter-alternator, and a revised accessory drive system.

• *Higher Voltage Stop-Start/Belt Integrated Starter Generator (BISG)*—provides idle-stop capability and uses a higher voltage battery with increased energy capacity over typical automotive batteries. The higher system voltage allows the use of a smaller, more powerful electric motor. This system replaces a standard alternator with an enhanced power, higher voltage, higher efficiency starter-alternator, that is belt driven and that can recover braking energy while the vehicle slows down (regenerative braking).

• *Integrated Motor Assist (IMA)/ Crank integrated starter generator (CISG)*—provides idle-stop capability and uses a high voltage battery with increased energy capacity over typical automotive batteries. The higher system voltage allows the use of a smaller, more

powerful electric motor and reduces the weight of the wiring harness. This system replaces a standard alternator with an enhanced power, higher voltage, higher efficiency starter-alternator that is crankshaft mounted and can recover braking energy while the vehicle slows down (regenerative braking).

• *2-mode hybrid (2MHEV)*—is a hybrid electric drive system that uses an adaptation of a conventional stepped-ratio automatic transmission by replacing some of the transmission clutches with two electric motors that control the ratio of engine speed to vehicle speed, while clutches allow the motors to be bypassed. This improves both the transmission torque capacity for heavy-duty applications and reduces fuel consumption and CO_2 emissions at highway speeds relative to other types of hybrid electric drive systems.

• *Power-split hybrid (PSHEV)*—a hybrid electric drive system that replaces the traditional transmission with a single planetary gearset and a motor/generator. This motor/generator uses the engine to either charge the battery or supply additional power to the drive motor. A second, more powerful motor/generator is permanently connected to the vehicle's final drive and always turns with the wheels. The planetary gear splits engine power between the first motor/generator and the drive motor to either charge the battery or supply power to the wheels.

• *Plug-in hybrid electric vehicles (PHEV)*—are hybrid electric vehicles with the means to charge their battery packs from an outside source of electricity (usually the electric grid). These vehicles have larger battery packs with more energy storage and a greater capability to be discharged than other hybrids. They also use a control system that allows the battery pack to be substantially depleted under electric-only or blended mechanical/electric operation.

• *Electric vehicles (EV)*—are vehicles with all-electric drive and with vehicle systems powered by energy-optimized batteries charged primarily from grid electricity.

The cost estimates for the various hybrid systems have been revised from the estimates used in the MY 2011 CAFE final rule, in particular with respect to estimated battery costs.

2. How did the agencies determine the costs and effectiveness of each of these technologies?

As mentioned above, EPA and NHTSA believe that the best way to derive technology cost estimates is to conduct real-world tear down studies. To date, the costs of the following five technologies have been evaluated with respect to their baseline (or replaced) technologies. For these technologies noted below, the agencies relied on the tear down data available and scaling methodologies used in EPA's ongoing study with FEV. Only the cost estimate for the first technology on the list below was used in the NPRM. The others were completed subsequent to the publication of the NPRM.

1. Stoichiometric gasoline direct injection and turbo charging with engine downsizing (T–DS) for a large DOHC 4 cylinder engine to a small DOHC (dual overhead cam) 4 cylinder engine.
2. Stoichiometric gasoline direct injection and turbo charging with engine downsizing for a SOHC single overhead cam) 3 valve/cylinder V8 engine to a SOHC V6 engine.
3. Stoichiometric gasoline direct injection and turbo charging with engine downsizing for a DOHC V6 engine to a DOHC 4 cylinder engine.
4. 6-speed automatic transmission replacing a 5-speed automatic transmission.
5. 6-speed wet dual clutch transmission (DCT) replacing a 6-speed automatic transmission.

This costing methodology has been published and gone through a peer review.[82] Using this tear down costing methodology, FEV has developed costs for each of the above technologies. In addition, FEV and EPA extrapolated the engine downsizing costs for the following scenarios that were outside of the noted study cases:[83]

1. Downsizing a SOHC 2 valve/cylinder V8 engine to a DOHC V6.
2. Downsizing a DOHC V8 to a DOHC V6.
3. Downsizing a SOHC V6 engine to a DOHC 4 cylinder engine.
4. Downsizing a DOHC 4 cylinder engine to a DOHC 3 cylinder engine.

The agencies relied on the findings of FEV in part for estimating the cost of these technologies in this rulemaking. However, for some of the technologies, NHTSA and EPA modified FEV's estimated costs. FEV made the assumption that these technologies would be mature when produced in large volumes (450,000 units or more). The agencies believe that there is some uncertainty regarding each manufacturer's near-term ability to employ the technology at the volumes assumed in the FEV analysis. There is also the potential for near term (earlier than 2016) supplier-level Engineering, Design and Testing (ED&T) costs to be in excess of those considered in the FEV analysis as existing equipment and facilities are converted to production of new technologies. The agencies have therefore decided to average the FEV results with the NPRM values in an effort to account for these near-term factors. This methodology was done for the following technologies:

1. Converting a port-fuel injected (PFI) DOHC I4 to a turbocharged-downsized-stoichiometric GDI DOHC I3.
2. Converting a PFI DOHC V6 engine to a T–DS-stoichiometric GDI DOHC I4.
3. Converting a PFI SOHC V6 engine to a T–DS-stoichiometric GDI DOHC I4.
4. Converting a PFI DOHC V8 engine to a T–DS-stoichiometric GDI DOHC V6.
5. Converting a PFI SOHC 3V V8 engine to a T–DS-stoichiometric GDI DOHC V6.
6. Converting a PFI SOHC 2V V8 engine to a T–DS-stoichiometric GDI DOHC V6.
7. Replacing a 4-speed automatic transmission with a 6-speed automatic transmission.
8. Replacing a 5-speed automatic transmission with a 6-speed automatic transmission.
9. Replacing a 6-speed automatic transmission with a 6-speed wet dual clutch transmission.

For the I4 to Turbo GDI I4 study applied in the NPRM, the agencies requested from FEV an adjusted cost estimate which accounted for these uncertainties as an adjustment to the base technology burden rate.[84] These new costs are used in the final rules. These details are also further described in the memo to the docket.[85] The confidential information provided by manufacturers as part of their product plan submissions to the agencies or discussed in meetings between the agencies and the manufacturers and

[82] EPA–420–R–09–020; EPA docket number EPA–HQ–OAR–2009–0472–11282 and 11285.

[83] "Binning of FEV Costs to GDI, Turbo-charging, and Engine Downsizing," memorandum to Docket EPA–HQ–OAR–2009–0472, from Michael Olechiw, U.S. EPA, dated March 25, 2010.

[84] Burden costs include the following fixed and variable costs: Rented and leased equipment; manufacturing equipment depreciation; plant office equipment depreciation; utilities expense; insurance (fire and general); municipal taxes; plant floor space (equipment and plant offices); maintenance of manufacturing equipment—non-labor; maintenance of manufacturing building—general, internal and external, parts, and labor; operating supplies; perishable and supplier-owned tooling; all other plant wages (excluding direct, indirect and MRO labor); returnable dunnage maintenance; and intra-company shipping costs (*see* EPA–HQ–OAR–2009–0472–0149).

[85] "Binning of FEV Costs to GDI, Turbo-charging, and Engine Downsizing," memorandum to Docket EPA–HQ–OAR–2009–0472, from Michael Olechiw, U.S. EPA, dated March 25, 2010.

suppliers served largely as a check on publicly-available data.

For the other technologies, considering all sources of information (including public comments) and using the BOM approach, the agencies worked together intensively to determine component costs for each of the technologies and build up the costs accordingly. Where estimates differ between sources, we have used our engineering judgment to arrive at what we believe to be the best available cost estimate, and explained the basis for that exercise of judgment in the TSD. Building on NHTSA's estimates developed for the MY 2011 CAFE final rule and EPA's Advance Notice of Proposed Rulemaking, which relied on the EPA 2008 Staff Technical Report,[86] the agencies took a fresh look at technology cost and effectiveness values for purposes of the joint rulemaking under the National Program. For costs, the agencies reconsidered both the direct or "piece" costs and indirect costs of individual components of technologies. For the direct costs, the agencies followed a bill of materials (BOM) approach employed in NHTSA's MY 2011 final rule based on recommendation from Ricardo, Inc., as described above. EPA used a similar approach in the EPA 2008 Staff Technical Report. A bill of materials, in a general sense, is a list of components or sub-systems that make up a system—in this case, an item of fuel economy-improving technology. In order to determine what a system costs, one of the first steps is to determine its components and what they cost.

NHTSA and EPA estimated these components and their costs based on a number of sources for cost-related information. The objective was to use those sources of information considered to be most credible for projecting the costs of individual vehicle technologies. For example, while NHTSA and Ricardo engineers had relied considerably in the MY 2011 final rule on the 2008 Martec Report for costing contents of some technologies, upon further joint review and for purposes of the MY 2012–2016 standards, the agencies decided that some of the costing information in that report was no longer accurate due to downward trends in commodity prices since the publication of that report. The agencies reviewed, then revalidated or updated cost estimates for individual components based on new information. Thus, while NHTSA and EPA found that much of the cost information used in NHTSA's MY 2011 final rule and EPA's staff report was consistent to a great extent, the agencies, in reconsidering information from many sources,[87] [88] [89] [90] [91] [92] [93] revised several component costs of several major technologies: turbocharging with engine downsizing (as described above), mild and strong hybrids, diesels, stoichiometric gasoline direct injection fuel systems, and valve train lift technologies. These are discussed at length in the Joint TSD and in NHTSA's final RIA.

Once costs were determined, they were adjusted to ensure that they were all expressed in 2007 dollars using a ratio of GDP values for the associated calendar years,[94] and indirect costs were accounted for using the ICM (indirect cost multiplier) approach explained in Chapter 3 of the Joint TSD, rather than using the traditional Retail Price Equivalent (RPE) multiplier approach. A report explaining how EPA developed the ICM approach can be found in the docket for this rule. The comments addressing the ICM approach were generally positive and encouraging. However, one commenter suggested that we had mischaracterized the complexity of a few of our technologies, which would result in higher or lower markups than presented in the NPRM. That commenter also suggested that we had used the ICMs as a means of placing a higher level of manufacturer learning on the cost estimates. The latter comment is not true and the methodology behind the ICM approach is explained in detail in the reports that are available in the docket for this rule.[95] The former is open to debate given the subjective nature of the engineering analysis behind it, but upon further thought both agencies believe that the complexities used in the NPRM were appropriate and have, therefore, carried those forward into the final rule. We discuss this in greater detail in the Response to Comments document.

Regarding estimates for technology effectiveness, NHTSA and EPA also reexamined the estimates from NHTSA's MY 2011 final rule and EPA's ANPRM and 2008 Staff Technical Report, which were largely consistent with NHTSA's 2008 NPRM estimates. The agencies also reconsidered other sources such as the 2002 NAS Report, the 2004 NESCCAF report, recent CAFE compliance data (by comparing similar vehicles with different technologies against each other in fuel economy testing, such as a Honda Civic Hybrid versus a directly comparable Honda Civic conventional drive), and confidential manufacturer estimates of technology effectiveness. NHTSA and EPA engineers reviewed effectiveness information from the multiple sources for each technology and ensured that such effectiveness estimates were based on technology hardware consistent with the BOM components used to estimate costs. The agencies also carefully examined the pertinent public comments. Together, they compared the multiple estimates and assessed their validity, taking care to ensure that common BOM definitions and other vehicle attributes such as performance, refinement, and drivability were taken into account. However, because the agencies' respective models employ different numbers of vehicle subclasses and use different modeling techniques to arrive at the standards, direct comparison of BOMs was somewhat more complicated. To address this and to confirm that the outputs from the different modeling techniques produced the same result, NHTSA and EPA developed mapping techniques, devising technology packages and mapping them to corresponding incremental technology estimates. This approach helped compare the outputs

[86] EPA Staff Technical Report: Cost and Effectiveness Estimates of Technologies Used to Reduce Light-Duty Vehicle Carbon Dioxide Emissions. EPA420–R–08–008, March 2008.

[87] National Research Council, "Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards," National Academy Press, Washington, DC (2002) (the "2002 NAS Report"), available at *http://www.nap.edu/openbook.php?isbn=0309076013* (last accessed August 7, 2009—update).

[88] Northeast States Center for a Clean Air Future (NESCCAF), "Reducing Greenhouse Gas Emissions from Light-Duty Motor Vehicles," 2004 (the "2004 NESCCAF Report"), available at *http://www.nesccaf.org/documents/rpt040923ghglightduty.pdf* (last accessed August 7, 2009—update).

[89] "Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions from Motor Vehicles," California Environmental Protection Agency, Air Resources Board, August 6, 2004.

[90] Energy and Environmental Analysis, Inc., "Technology to Improve the Fuel Economy of Light Duty Trucks to 2015," 2006 (the "2006 EEA Report"), Docket EPA–HQ–OAR–2009–0472.

[91] Martec, "Variable Costs of Fuel Economy Technologies," June 1, 2008, (the "2008 Martec Report") available at Docket No. NHTSA–2008–0089–0169.1.

[92] Vehicle fuel economy certification data.

[93] Confidential data submitted by manufacturers in response to the March 2009 and other requests for product plans.

[94] NHTSA examined the use of the CPI multiplier instead of GDP for adjusting these dollar values, but found the difference to be exceedingly small—only $0.14 over $100.

[95] Rogozhin, Alex, Michael Gallaher, and Walter McManus, "Automobile Industry Retail Price Equivalent and Indirect Cost Multipliers," EPA 420–R–09–003, Docket EPA Docket EPA–HQ–OAR–2009–0472–0142, February 2009, *http://epa.gov/otaq/ld-hwy/420r09003.pdf; A. Rogozhin et al., International Journal of Production Economics 124 (2010) 360–368, Volume 124, Issue 2, April 2010.*

from the incremental modeling technique to those produced by the technology packaging approach to ensure results that are consistent and could be translated into the respective models of the agencies.

In general, most effectiveness estimates used in both the MY 2011 final rule and the 2008 EPA staff report were determined to be accurate and were carried forward without significant change first into the NPRM, and now into these final rules. When NHTSA and EPA's estimates for effectiveness diverged slightly due to differences in how the agencies apply technologies to vehicles in their respective models, we report the ranges for the effectiveness values used in each model. There were only a few comments on the technology effectiveness estimates used in the NPRM. Most of the technologies that were mentioned in the comments were the more advanced technologies that are not assumed to have large penetrations in the market within the timeframe of this rule, notably hybrid technologies. Even if the effectiveness figures for hybrid vehicles were adjusted, it would have made little difference in the NHTSA and EPA analysis of the impacts and costs of the rule. The response to comments document has more specific responses to these comments.

The agencies note that the effectiveness values estimated for the technologies considered in the modeling analyses may represent average values, and do not reflect the enormous spectrum of possible values that could result from adding the technology to different vehicles. For example, while the agencies have estimated an effectiveness of 0.5 percent for low friction lubricants, each vehicle could have a unique effectiveness estimate depending on the baseline vehicle's oil viscosity rating. Similarly, the reduction in rolling resistance (and thus the improvement in fuel economy and the reduction in CO_2 emissions) due to the application of low rolling resistance tires depends not only on the unique characteristics of the tires originally on the vehicle, but on the unique characteristics of the tires being applied, characteristics which must be balanced between fuel efficiency, safety, and performance. Aerodynamic drag reduction is much the same—it can improve fuel economy and reduce CO_2 emissions, but it is also highly dependent on vehicle-specific functional objectives. For purposes of the final standards, NHTSA and EPA believe that employing average values for technology effectiveness estimates, as adjusted depending on vehicle subclass, is an appropriate way of recognizing the potential variation in the specific benefits that individual manufacturers (and individual vehicles) might obtain from adding a fuel-saving technology.

Chapter 3 of the Joint Technical Support Document contains a detailed description of our assessment of vehicle technology cost and effectiveness estimates. The agencies note that the technology costs included in this final rule take into account only those associated with the initial build of the vehicle. Although comments were received to the NPRM that suggested there could be additional maintenance required with some new technologies (*e.g.,* turbocharging, hybrids, etc.), and that additional maintenance costs could occur as a result, the agencies do not believe that the amount of additional cost will be significant in the timeframe of this rulemaking, based on the relatively low application rates for these technologies. The agencies will undertake a more detailed review of these potential costs in preparation for the next round of CAFE/GHG standards.

F. Joint Economic Assumptions

The agencies' final analysis of alternative CAFE and GHG standards for the model years covered by this final rulemaking rely on a range of forecast information, economic estimates, and input parameters. This section briefly describes the agencies' choices of specific parameter values. These economic values play a significant role in determining the benefits of both CAFE and GHG standards.

In reviewing these variables and the agency's estimates of their values for purposes of this final rule, NHTSA and EPA reconsidered previous comments that NHTSA had received, reviewed newly available literature, and reviewed comments received in response to the proposed rule. For this final rule, we made three major changes to the economic assumptions. First, we revised the technology costs to reflect more recently available data. Second, we updated fuel price and transportation demand assumptions to reflect the Annual Energy Outlook (AEO) 2010 Early Release. Third, we have updated our estimates of the social cost of carbon (SCC) based on a recent interagency process. The key economic assumptions are summarized below, and are discussed in greater detail in Section III (EPA) and Section IV (NHTSA), as well as in Chapter 4 of the Joint TSD, Chapter VIII of NHTSA's RIA and Chapter 8 of EPA's RIA.

• *Costs of fuel economy-improving technologies*—These estimates are presented in summary form above and in more detail in the agencies' respective sections of this preamble, in Chapter 3 of the Joint TSD, and in the agencies' respective RIAs. The technology cost estimates used in this analysis are intended to represent manufacturers' direct costs for high-volume production of vehicles with these technologies and sufficient experience with their application so that all cost reductions due to "learning curve" effects have been fully realized. Costs are then modified by applying near-term indirect cost multipliers ranging from 1.11 to 1.64 to the estimates of vehicle manufacturers' direct costs for producing or acquiring each technology to improve fuel economy, depending on the complexity of the technology and the time frame over which costs are estimated. This accounts for both the direct and indirect costs associated with implementing new technologies in response to this final rule. The technology cost estimates for a select group of technologies have changed since the NPRM. These changes, as summarized in Section II.E and in Chapter 3 of the Joint TSD, were made in response to updated cost estimates available to the agencies shortly after publication of the NPRM, not in response to comments. In general, commenters were supportive of the cost estimates used in the NPRM and the transparency of the methodology used to generate them.

• *Potential opportunity costs of improved fuel economy*—This estimate addresses the possibility that achieving the fuel economy improvements required by alternative CAFE or GHG standards would require manufacturers to compromise the performance, carrying capacity, safety, or comfort of their vehicle models. If it did so, the resulting sacrifice in the value of these attributes to consumers would represent an additional cost of achieving the required improvements, and thus of manufacturers' compliance with stricter standards. Currently the agencies assume that these vehicle attributes do not change, and include the cost of maintaining these attributes as part of the cost estimates for technologies. However, it is possible that the technology cost estimates do not include adequate allowance for the necessary efforts by manufacturers to maintain vehicle performance, carrying capacity, and utility while improving fuel economy and reducing GHG emissions. While, in principle, consumer vehicle demand models can measure these effects, these models do not appear to be robust across specifications, since authors derive a

wide range of willingness-to-pay values for fuel economy from these models, and there is not clear guidance from the literature on whether one specification is clearly preferred over another. This issue is discussed in EPA's RIA, Section 8.1.2 and NHTSA's RIA Section VIII.H. The agencies requested comment on how to estimate explicitly the changes in vehicle buyers' welfare from the combination of higher prices for new vehicle models, increases in their fuel economy, and any accompanying changes in vehicle attributes such as performance, passenger- and cargo-carrying capacity, or other dimensions of utility. Commenters did not provide recommendations for how to evaluate the quality of different models or identify a model appropriate for the agencies' purposes. Some commenters expressed various concerns about the use of existing consumer vehicle choice models. While EPA and NHTSA are not using a consumer vehicle choice model to analyze the effects of this rule, we continue to investigate these models.

• *The on-road fuel economy "gap"*—Actual fuel economy levels achieved by light-duty vehicles in on-road driving fall somewhat short of their levels measured under the laboratory-like test conditions used by NHTSA and EPA to establish compliance with the final CAFE and GHG standards. The agencies use an on-road fuel economy gap for light-duty vehicles of 20 percent lower than published fuel economy levels. For example, if the measured CAFE fuel economy value of a light truck is 20 mpg, the on-road fuel economy actually achieved by a typical driver of that vehicle is expected to be 16 mpg (20*.80).[96] NHTSA previously used this estimate in its MY 2011 final rule, and the agencies confirmed it based on independent analysis for use in this FRM. No substantive comments were received on this input.

• *Fuel prices and the value of saving fuel*—Projected future fuel prices are a critical input into the preliminary economic analysis of alternative standards, because they determine the value of fuel savings both to new vehicle buyers and to society. For the proposed rule, the agencies had relied on the then most recent fuel price projections from the U.S. Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2009 (Revised Updated). However, for this final rule, the agencies have updated the analyses based on AEO 2010 (December 2009 Early Release) Reference Case forecasts of inflation-adjusted (constant-dollar) retail gasoline and diesel fuel prices, which represent the EIA's most up-to-date estimate of the most likely course of future prices for petroleum products.[97] AEO 2010 includes slightly lower petroleum prices compared to AEO 2009.

The forecasts of fuel prices reported in EIA's AEO 2010 Early Release Reference Case extends through 2035, compared to the AEO 2009 which only went through 2030. As in the proposal, fuel prices beyond the time frame of AEO's forecast were estimated using an average growth rate.

While EIA revised AEO 2010, the vehicle MPG standards are similar to those that were published in AEO 2009. No substantive comments were received on the use of AEO as a source of fuel prices.[98]

• *Consumer valuation of fuel economy and payback period*—In estimating the impacts on vehicle sales, the agencies assume that potential buyers value the resulting fuel savings improvements that would result from alternative CAFE and GHG standards over only part of the expected lifetime of the vehicles they purchase. Specifically, we assume that buyers value fuel savings over the first five years of a new vehicle's lifetime, and that buyers discount the value of these future fuel savings using rates of 3% and 7%. The five-year figure represents the current average term of consumer loans to finance the purchase of new vehicles. One commenter argued that higher-fuel-economy vehicles should have higher resale prices than vehicles with lower fuel economy, but did not provide supporting data. This revision, if made, would increase the net benefits of the rule. Another commenter supported the use of a five-year payback period for this analysis. In the absence of data to support changes, EPA and NHTSA have kept the same assumptions. In the analysis of net benefits, EPA and NHTSA assume that vehicle buyers benefit from the full fuel savings over the vehicle's lifetime, discounted for present value calculations at 3 and 7 percent.

• *Vehicle sales assumptions*—The first step in estimating lifetime fuel consumption by vehicles produced during a model year is to calculate the number of vehicles expected to be produced and sold.[99] The agencies relied on the AEO 2010 Early Release for forecasts of total vehicle sales, while the baseline market forecast developed by the agencies (*see* Section II.B) divided total projected sales into sales of cars and light trucks.

• *Vehicle survival assumptions*—We then applied updated values of age-specific survival rates for cars and light trucks to these adjusted forecasts of passenger car and light truck sales to determine the number of these vehicles remaining in use during each year of their expected lifetimes. No substantive comments were received on vehicle survival assumptions.

• *Total vehicle use*—We then calculated the total number of miles that cars and light trucks produced in each model year will be driven during each year of their lifetimes using estimates of annual vehicle use by age tabulated from the Federal Highway Administration's 2001 National Household Transportation Survey (NHTS),[100] adjusted to account for the effect on vehicle use of subsequent increases in fuel prices. Due to the lower fuel prices projected in AEO 2010, the average vehicle is estimated to be used slightly more (~3 percent) over its lifetime than assumed in the proposal. In order to insure that the resulting mileage schedules imply reasonable estimates of future growth in *total* car and light truck use, we calculated the rate of growth in annual car and light truck mileage at each age that is necessary for total car and light truck travel to increase at the rates forecast in the AEO 2010 Early Release Reference Case. The growth rate in average annual car and light truck use produced by this calculation is

[96] U.S. Environmental Protection Agency, Final Technical Support Document, Fuel Economy Labeling of Motor Vehicle Revisions to Improve Calculation of Fuel Economy Estimates, EPA420–R–06–017, December 2006.

[97] Energy Information Administration, Annual Energy Outlook 2010, Early Release Reference Case (December 2009), Table 12. Available at *http://www.eia.doe.gov/oiaf/aeo/aeoref_tab.html* (last accessed February 02, 2010).

[98] Kahan, A. and Pickrell, D. Memo to Docket EPA–HQ–OAR–2009–0472 and Docket NHTSA–2009–0059. "Energy Information Administration's Annual Energy Outlook 2009 and 2010." March 24, 2010.

[99] Vehicles are defined to be of age 1 during the calendar year corresponding to the model year in which they are produced; thus for example, model year 2000 vehicles are considered to be of age 1 during calendar year 2000, age 2 during calendar year 2001, and to reach their maximum age of 26 years during calendar year 2025. NHTSA considers the maximum lifetime of vehicles to be the age after which less than 2 percent of the vehicles originally produced during a model year remain in service. Applying these conventions to vehicle registration data indicates that passenger cars have a maximum age of 26 years, while light trucks have a maximum lifetime of 36 years. See Lu, S., NHTSA, Regulatory Analysis and Evaluation Division, "Vehicle Survivability and Travel Mileage Schedules," DOT HS 809 952, 8–11 (January 2006). Available at *http://www-nrd.nhtsa.dot.gov/Pubs/809952.pdf* (last accessed Feb. 15, 2010).

[100] For a description of the Survey, *see http://nhts.ornl.gov/quickStart.shtml* (last accessed July 27, 2009).

approximately 1.1 percent per year.[101] This rate was applied to the mileage figures derived from the 2001 NHTS to estimate annual mileage during each year of the expected lifetimes of MY 2012–2016 cars and light trucks.[102] While commenters requested further detail on the assumptions regarding total vehicle use, no specific issues were raised.

• *Accounting for the rebound effect of higher fuel economy*—The rebound effect refers to the fraction of fuel savings expected to result from an increase in vehicle fuel economy—particularly an increase required by the adoption of more stringent CAFE and GHG standards—that is offset by additional vehicle use. The increase in vehicle use occurs because higher fuel economy reduces the fuel cost of driving, typically the largest single component of the monetary cost of operating a vehicle, and vehicle owners respond to this reduction in operating costs by driving slightly more. We received comments supporting our proposed value of 10 percent, although we also received comments recommending higher and lower values. However, we did not receive any new data or comments that justify revising the 10 percent value for the rebound effect at this time.

• *Benefits from increased vehicle use*—The increase in vehicle use from the rebound effect provides additional benefits to their owners, who may make more frequent trips or travel farther to reach more desirable destinations. This additional travel provides benefits to drivers and their passengers by improving their access to social and economic opportunities away from home. These benefits are measured by the net "consumer surplus" resulting from increased vehicle use, over and above the fuel expenses associated with this additional travel. We estimate the economic value of the consumer surplus provided by added driving using the conventional approximation, which is one half of the product of the decline in vehicle operating costs per vehicle-mile and the resulting increase in the annual number of miles driven. Because it depends on the extent of improvement in fuel economy, the value of benefits from increased vehicle use changes by model year and varies among alternative standards.

• *The value of increased driving range*—By reducing the frequency with which drivers typically refuel their vehicles, and by extending the upper limit of the range they can travel before requiring refueling, improving fuel economy and reducing GHG emissions thus provides some additional benefits to their owners. No direct estimates of the value of extended vehicle range are readily available, so the agencies' analysis calculates the reduction in the annual number of required refueling cycles that results from improved fuel economy, and applies DOT-recommended values of travel time savings to convert the resulting time savings to their economic value.[103] *Please see* the Chapter 4 of the Joint TSD for details.

• *Added costs from congestion, crashes and noise*—Although it provides some benefits to drivers, increased vehicle use associated with the rebound effect also contributes to increased traffic congestion, motor vehicle accidents, and highway noise. Depending on how the additional travel is distributed over the day and on where it takes place, additional vehicle use can contribute to traffic congestion and delays by increasing traffic volumes on facilities that are already heavily traveled during peak periods. These added delays impose higher costs on drivers and other vehicle occupants in the form of increased travel time and operating expenses, increased costs associated with traffic accidents, and increased traffic noise. The agencies rely on estimates of congestion, accident, and noise costs caused by automobiles and light trucks developed by the Federal Highway Administration to estimate the increased external costs caused by added driving due to the rebound effect.[104]

• *Petroleum consumption and import externalities*—U.S. consumption and imports of petroleum products also impose costs on the domestic economy that are not reflected in the market price for crude petroleum, or in the prices paid by consumers of petroleum products such as gasoline. In economics literature on this subject, these costs include (1) higher prices for petroleum products resulting from the effect of U.S. oil import demand on the world oil price ("monopsony costs"); (2) the expected costs from the risk of disruptions to the U.S. economy caused by sudden reductions in the supply of imported oil to the U.S.; and (3) expenses for maintaining a U.S. military presence to secure imported oil supplies from unstable regions, and for maintaining the strategic petroleum reserve (SPR) to cushion against resulting price increases.[105] Reducing U.S. imports of crude petroleum or refined fuels can reduce the magnitude of these external costs. Any reduction in their total value that results from lower fuel consumption and petroleum imports represents an economic benefit of setting more stringent standards over and above the dollar value of fuel savings itself. Since the agencies are taking a global perspective with respect to the estimate of the social cost of carbon for this rulemaking, the agencies do not include the value of any reduction in monopsony payments as a benefit from lower fuel consumption, because those payments from a global perspective represent a transfer of income from consumers of petroleum products to oil suppliers rather than a savings in real economic resources. Similarly, the agencies do not include any savings in budgetary outlays to support U.S. military activities among the benefits of higher fuel economy and the resulting fuel savings. Based on a recently-updated ORNL study, we estimate that each gallon of fuel saved that results in a reduction in U.S. petroleum imports (either crude petroleum or refined fuel) will reduce the expected costs of oil supply disruptions to the U.S. economy by $0.169 (2007$). Each gallon of fuel saved as a consequence of higher standards is anticipated to reduce total U.S. imports of crude petroleum or refined fuel by 0.95 gallons.[106]

[101] It was not possible to estimate separate growth rates in average annual use for cars and light trucks, because of the significant reclassification of light truck models as passenger cars discussed previously.

[102] While the adjustment for future fuel prices reduces average mileage at each age from the values derived from the 2001 NHTS, the adjustment for expected future growth in average vehicle use increases it. The net effect of these two adjustments is to increase expected lifetime mileage by about 18 percent for passenger cars and about 16 percent for light trucks.

[103] Department of Transportation, Guidance Memorandum, "The Value of Saving Travel Time: Departmental Guidance for Conducting Economic Evaluations," Apr. 9, 1997. *http://ostpxweb.dot.gov/policy/Data/VOT97guid.pdf* (last accessed Feb. 15, 2010); update *available at http://ostpxweb.dot.gov/policy/Data/VOTrevision1_2-11-03.pdf* (last accessed Feb. 15, 2010).

[104] These estimates were developed by FHWA for use in its 1997 *Federal Highway Cost Allocation Study; http://www.fhwa.dot.gov/policy/hcas/final/index.htm* (last accessed Feb. 15, 2010).

[105] See, *e.g.,* Bohi, Douglas R. and W. David Montgomery (1982). Oil Prices, Energy Security, and Import Policy Washington, DC: Resources for the Future, Johns Hopkins University Press; Bohi, D. R., and M. A. Toman (1993). "Energy and Security: Externalities and Policies," Energy Policy 21:1093–1109; and Toman, M. A. (1993). "The Economics of Energy Security: Theory, Evidence, Policy," in A. V. Kneese and J. L. Sweeney, eds. (1993). Handbook of Natural Resource and Energy Economics, Vol. III. Amsterdam: North-Holland, pp. 1167–1218.

[106] Each gallon of fuel saved is assumed to reduce imports of refined fuel by 0.5 gallons, and the volume of fuel refined domestically by 0.5 gallons. Domestic fuel refining is assumed to utilize 90 percent imported crude petroleum and 10 percent

Continued

The energy security analysis conducted for this rule estimates that the world price of oil will fall modestly in response to lower U.S. demand for refined fuel. One potential result of this decline in the world price of oil would be an increase in the consumption of petroleum products outside the U.S., which would in turn lead to a modest increase in emissions of greenhouse gases, criteria air pollutants, and airborne toxics from their refining and use. While additional information would be needed to analyze this "leakage effect" in detail, NHTSA provides a sample estimate of its potential magnitude in its Final EIS.[107] This analysis indicates that the leakage effect is likely to offset only a modest fraction of the reductions in emissions projected to result from the rule.

EPA and NHTSA received comments about the treatment of the monopsony effect, macroeconomic disruption effect, and the military costs associated with the energy security benefits of this rule. The agencies did not receive any comments that justify changing the energy security analysis. As a result, the agencies continue to only use the macroeconomic disruption component of the energy security analysis under a global context when estimating the total energy security benefits associated with this rule. Further, the Agencies did not receive any information that they could use to quantity that component of military costs directly related to energy security, and thus did not modify that part of its analysis. A more complete discussion of the energy security analysis can be found in Chapter 4 of the Joint TSD, and Sections III and IV of this preamble.

- Air pollutant emissions

○ *Impacts on criteria air pollutant emissions*—While reductions in domestic fuel refining and distribution that result from lower fuel consumption will reduce U.S. emissions of criteria pollutants, additional vehicle use associated with the rebound effect will increase emissions of these pollutants. Thus the net effect of stricter standards on emissions of each criteria pollutant depends on the relative magnitudes of reduced emissions from fuel refining and distribution, and increases in emissions resulting from added vehicle use. Criteria air pollutants emitted by vehicles and during fuel production include carbon monoxide (CO), hydrocarbon compounds (usually referred to as "volatile organic compounds," or VOC), nitrogen oxides (NO_X), fine particulate matter ($PM_{2.5}$), and sulfur oxides (SO_X). It is assumed that the emission rates (per mile) stay constant for future year vehicles.

○ *Economic value of reductions in criteria air pollutants*—For the purpose of the joint technical analysis, EPA and NHTSA estimate the economic value of the human health benefits associated with reducing exposure to $PM_{2.5}$ using a "benefit-per-ton" method. These $PM_{2.5}$-related benefit-per-ton estimates provide the total monetized benefits to human health (the sum of reductions in premature mortality and premature morbidity) that result from eliminating one ton of directly emitted $PM_{2.5}$, or one ton of a pollutant that contributes to secondarily-formed $PM_{2.5}$ (such as NO_X, SO_X, and VOCs), from a specified source. Chapter 4.2.9 of the Technical Support Document that accompanies this rule includes a description of these values. Separately, EPA also conducted air quality modeling to estimate the change in ambient concentrations of criteria pollutants and used this as a basis for estimating the human health benefits and their economic value. Section III.H.7 presents these benefits estimates.

○ *Reductions in GHG emissions*—Emissions of carbon dioxide and other GHGs occur throughout the process of producing and distributing transportation fuels, as well as from fuel combustion itself. By reducing the volume of fuel consumed by passenger cars and light trucks, higher standards will thus reduce GHG emissions generated by fuel use, as well as throughout the fuel supply cycle. The agencies estimated the increases of GHGs other than CO_2, including methane and nitrous oxide, from additional vehicle use by multiplying the increase in total miles driven by cars and light trucks of each model year and age by emission rates per vehicle-mile for these GHGs. These emission rates, which differ between cars and light trucks as well as between gasoline and diesel vehicles, were estimated by EPA using its recently-developed Motor Vehicle Emission Simulator (Draft MOVES 2010).[108] Increases in emissions of non-CO_2 GHGs are converted to equivalent increases in CO_2 emissions using estimates of the Global Warming Potential (GWP) of methane and nitrous oxide.

○ *Economic value of reductions in CO_2 emissions* —EPA and NHTSA assigned a dollar value to reductions in CO_2 emissions using the marginal dollar value (*i.e.,* cost) of climate-related damages resulting from carbon emissions, also referred to as "social cost of carbon" (SCC). The SCC is intended to measure the monetary value society places on impacts resulting from increased GHGs, such as property damage from sea level rise, forced migration due to dry land loss, and mortality changes associated with vector-borne diseases. Published estimates of the SCC vary widely as a result of uncertainties about future economic growth, climate sensitivity to GHG emissions, procedures used to model the economic impacts of climate change, and the choice of discount rates.

EPA and NHTSA received extensive comments about how to improve the characterization of the SCC and have since developed new estimates through an interagency modeling exercise. The comments addressed various issues, such as discount rate selection, treatment of uncertainty, and emissions and socioeconomic trajectories, and justified the revision of SCC for the final rule. The modeling exercise involved running three integrated assessment models using inputs agreed upon by the interagency group for climate sensitivity, socioeconomic and emissions trajectories, and discount rates. A more complete discussion of SCC can be found in the Technical Support Document, *Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (hereafter, "SCC TSD"); revised SCC estimates corresponding to assumed values of the discount rate are shown in Table II.F–1.[109]

domestically-produced crude petroleum as feedstocks. Together, these assumptions imply that each gallon of fuel saved will reduce imports of refined fuel and crude petroleum by 0.50 gallons + 0.50 gallons*90 percent = 0.50 gallons + 0.45 gallons = 0.95 gallons.

[107] NHTSA Final Environmental Impact Statement: Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2012–2016, February 2010, page 3–14.

[108] The MOVES model assumes that the per-mile rates at which cars and light trucks emit these GHGs are determined by the efficiency of fuel combustion during engine operation and chemical reactions that occur during catalytic after-treatment of engine exhaust, and are thus independent of vehicles' fuel consumption rates. Thus MOVES' emission factors for these GHGs, which are expressed per mile of vehicle travel, are assumed to be unaffected by changes in fuel economy.

[109] Interagency Working Group on Social Cost of Carbon, U.S. Government, with participation by Council of Economic Advisers, Council on Environmental Quality, Department of Agriculture, Department of Commerce, Department of Energy, Department of Transportation, Environmental Protection Agency, National Economic Council, Office of Energy and Climate Change, Office of Management and Budget, Office of Science and Technology Policy, and Department of Treasury, "*Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866,*" February 2010, available in docket EPA–HQ–OAR–2009–0472.

TABLE II.F–1—SOCIAL COST OF CO_2, 2010

[In 2007 dollars]

Discount Rate	5%	3%	2.5%	3%
Source of Estimate	Mean of Estimates Values			95th percentile estimate.
2010 Estimate	$5	$21	$35	$65.

• *Discounting future benefits and costs*—Discounting future fuel savings and other benefits is intended to account for the reduction in their value to society when they are deferred until some future date, rather than received immediately. The discount rate expresses the percent decline in the value of these benefits—as viewed from today's perspective—for each year they are deferred into the future. In evaluating the non-climate related benefits of the final standards, the agencies have employed discount rates of both 3 percent and 7 percent. We received some comments on the discount rates used in the proposal, most of which were directed at the discount rates used to value future fuel savings and the rates used to value of the social cost of carbon. In general, commenters were supporting one of the discount rates over the other, although some suggested that our rates were too high or too low. We have revised the discounting used when calculating the net present value of social cost of carbon as explained in Sections III.H. and VI but have not revised our discounting procedures for other costs or benefits.

For the reader's reference, Table II.F–2 below summarizes the values used to calculate the impacts of each final standard. The values presented in this table are summaries of the inputs used for the models; specific values used in the agencies' respective analyses may be aggregated, expanded, or have other relevant adjustments. See the respective RIAs for details.

The agencies recognize that each of these values has some degree of uncertainty, which the agencies further discuss in the Joint TSD. The agencies have conducted a range of sensitivities and present them in their respective RIAs. For example, NHTSA has conducted a sensitivity analysis on several assumptions including (1) forecasts of future fuel prices, (2) the discount rate applied to future benefits and costs, (3) the magnitude of the rebound effect, (4) the value to the U.S. economy of reducing carbon dioxide emissions, (5) inclusion of the monopsony effect, and (6) the reduction in external economic costs resulting from lower U.S. oil imports. This information is provided in NHTSA's RIA.

TABLE II.F–2—ECONOMIC VALUES FOR BENEFITS COMPUTATIONS

[2007$]

Fuel Economy Rebound Effect	10%.
"Gap" between test and on-road MPG	20%.
Value of refueling time per ($ per vehicle-hour)	$24.64.
Average tank volume refilled during refueling stop	55%.
Annual growth in average vehicle use	1.15%.
Fuel Prices (2012–50 average, $/gallon):	
Retail gasoline price	$3.66.
Pre-tax gasoline price	$3.29.
Economic Benefits From Reducing Oil Imports ($/gallon)	
"Monopsony" Component	$0.00.
Price Shock Component	$0.17.
Military Security Component	$0.00.
Total Economic Costs ($/gallon)	$0.17.
Emission Damage Costs (2020, $/ton or $/metric ton)	
Carbon monoxide	$0.
Volatile organic compounds (VOC)	$1,300.
Nitrogen oxides (NO_X)—vehicle use	$5,100.
Nitrogen oxides (NO_X)—fuel production and distribution	$ 5,300.
Particulate matter ($PM_{2.5}$)—vehicle use	$ 240,000.
Particulate matter ($PM_{2.5}$)—fuel production and distribution	$ 290,000.
Sulfur dioxide (SO_2)	$ 31,000.
Carbon dioxide (CO_2) emissions in 2010	$5. $21. $35. $65.
Annual Increase in CO_2 Damage Cost	variable, depending on estimate.
External Costs From Additional Automobile Use ($/vehicle-mile)	
Congestion	$ 0.054.
Accidents	$ 0.023.
Noise	$ 0.001.

TABLE II.F–2—ECONOMIC VALUES FOR BENEFITS COMPUTATIONS—Continued

[2007$]

Total External Costs	$ 0.078.
External Costs From Additional Light Truck Use ($/vehicle-mile)	
Congestion	$0.048.
Accidents	$0.026.
Noise	$0.001.
Total External Costs	$0.075.
Discount Rates Applied to Future Benefits	3%, 7%.

G. What are the estimated safety effects of the final MYs 2012–2016 CAFE and GHG standards?

The primary goals of the final CAFE and GHG standards are to reduce fuel consumption and GHG emissions, but in addition to these intended effects, the agencies must consider the potential of the standards to affect vehicle safety,[110] which the agencies have assessed in evaluating the appropriate levels at which to set the final standards. Safety trade-offs associated with fuel economy increases have occurred in the past, and the agencies must be mindful of the possibility of future ones. These past safety trade-offs occurred because manufacturers chose, at the time, to build smaller and lighter vehicles—partly in response to CAFE standards—rather than adding more expensive fuel-saving technologies (and maintaining vehicle size and safety), and the smaller and lighter vehicles did not fare as well in crashes as larger and heavier vehicles. Historically, as shown in FARS data analyzed by NHTSA, the safest vehicles have been heavy and large, while the vehicles with the highest fatal-crash rates have been light and small, both because the crash rate is higher for small/light vehicles and because the fatality rate per crash is higher for small/light vehicle crashes.

Changes in relative safety are related to shifts in the distribution of vehicles on the road. A policy that induces a widening in the size distribution of vehicles on the road, could result in negative impacts on safety, The primary mechanism in this rulemaking for mitigating the potential negative effects on safety is the application of footprint-based standards, which create a disincentive for manufacturers to produce smaller-footprint vehicles. This is because as footprint decreases, the corresponding fuel economy/GHG emission target becomes more stringent.[111] The shape of the footprint curves themselves have also been designed to be approximately "footprint neutral" within the sloped portion of the functions—that is, to neither encourage manufacturers to increase the footprint of their fleets, nor to decrease it. Upsizing also is discouraged through a "cut-off" at larger footprints. For both cars and light trucks there is a "cut-off" that affects vehicles smaller than 41 square feet. The agencies recognize that for manufacturers who make small vehicles in this size range, this cut off creates some incentive to downsize (*i.e.* further reduce the size and/or increase the production of models currently smaller than 41 square feet) to make it easier to meet the target. The cut off may also create some incentive for manufacturers who do not currently offer such models to do so in the future. However, at the same time, the agencies believe that there is a limit to the market for cars smaller than 41 square feet—most consumers likely have some minimum expectation about interior volume, among other things. In addition, vehicles in this market segment are the lowest price point for the light-duty automotive market, with a number of models in the $10,000 to $15,000 range. In order to justify selling more vehicles in this market in order to generate fuel economy or CO_2 credits (that is, for this final rule to be the incentive for selling more vehicles in this small car segment), a manufacturer would need to add additional technology to the lowest price segment vehicles, which could be challenging. Therefore, due to these two reasons (a likely limit in the market place for the smallest sized cars and the potential consumer acceptance difficulty in adding the necessary technologies in order to generate fuel economy and CO_2 credits), the agencies believe that the incentive for manufacturers to increase the sale of vehicles smaller than 41 square feet due to this rulemaking, if present, is small. For further discussion on these aspects of the standards, *please see* Section II.C above and Chapter 2 of the Joint TSD.

Manufacturers have stated, however, that they will reduce vehicle weight as one of the cost-effective means of increasing fuel economy and reducing CO_2 emissions, and the agencies have incorporated this expectation into our modeling analysis supporting today's final standards. NHTSA's previous analyses examining the relationship between vehicle mass and fatalities found fatality increases as vehicle weight and size were reduced, but these previous analyses did not differentiate between weight reductions and size (*i.e.,* weight and footprint) reductions.

The question of the effect of changes in vehicle mass on safety in the context of fuel economy is a complex question that poses serious analytic challenges and has been a contentious issue for many years, as discussed by a number of commenters to the NPRM. This contentiousness arises, at least in part, from the difficulty of isolating vehicle mass from other confounding factors (*e.g.,* driver behavior, or vehicle factors such as engine size and wheelbase). In addition, several vehicle factors have been closely related historically, such as vehicle mass, wheelbase, and track width. The issue has been reviewed and analyzed in the literature for more than two decades. For the reader's reference, much more information about safety in the CAFE context is available in Chapter IX of NHTSA's FRIA. Chapter 7.6 of EPA's final RIA also contained

[110] In this rulemaking document, vehicle safety is defined as *societal* fatality rates which include fatalities to occupants of all the vehicles involved in the collisions, plus any pedestrians.

[111] We note, however, that vehicle footprint is not synonymous with vehicle size. Since the footprint is only that portion of the vehicle between the front and rear axles, footprint-based standards do not discourage downsizing the portions of a vehicle in front of the front axle and to the rear of the rear axle, or to other portions of the vehicle outside the wheels. The crush space provided by those portions of a vehicle can make important contributions to managing crash energy. At least one manufacturer has confidentially indicated plans to reduce overhang as a way of reducing mass on some vehicles during the rulemaking time frame. Additionally, simply because footprint-based standards create no incentive to downsize vehicles, does not mean that manufacturers may not choose to do so if doing so makes it easier to meet the overall standard (as, for example, if the smaller vehicles are so much lighter that they exceed their targets by much greater amounts).

additional discussion on mass and safety.

Over the past several years, as also discussed by a number of commenters to the NPRM, contention has arisen with regard to the applicability of analysis of historical crash data to future safety effects due to mass reduction. The agencies recognize that there are a host of factors that may make future mass reduction different than what is reflected in the historical data. For one, the footprint-based standards have been carefully developed by the agencies so that they do not encourage vehicle footprint reductions as a way of meeting the standards, but so that they do encourage application of fuel-saving technologies, including mass reduction. This in turn encourages manufacturers to find ways to separate mass reduction from footprint reduction, which will very likely result in a future relationship between mass and fatalities that is safer than the historical relationship. However, as manufacturers pursue these methods of mass reduction, the fleet moves further away from the historical trends, which the agencies recognize.

NHTSA's NPRM analysis of the safety effects of the proposed CAFE standards was based on NHTSA's 2003 report concerning mass and size reduction in MYs 1991–1999 vehicles, and evaluated a "worst-case scenario" in which the safety effects of the combined reductions of both mass and size for those vehicles were determined for the future passenger car and light truck fleets.[112] In the NPRM analysis, mass and size could not be separated from one another, resulting in what NHTSA recognized was a larger safety disbenefit than was likely under the MYs 2012–2016 footprint-based CAFE standards. NHTSA emphasized, however, that actual fatalities would likely be less than these "worst-case" estimates, and possibly significantly less, based on the various factors discussed in the NPRM that could reduce the estimates, such as careful mass reduction through material substitution, etc.

For the final rule, as discussed in the NPRM and in recognition of the importance of conducting analysis that better reflects, within the limits of our current knowledge, the potential safety effects of future mass reduction in response to the final CAFE and GHG standards that is highly unlikely to involve concurrent reductions in footprint, NHTSA has revised its analysis in consultation with EPA. Perhaps the most important change has been that NHTSA agreed with commenters that it was both possible and appropriate to separate the effect of mass reductions from the effect of footprint reductions. NHTSA thus performed a new statistical analysis, hereafter referred to as the 2010 Kahane analysis, of the MYs 1991–99 vehicle database from its 2003 report (now including rather than excluding 2-door cars in the passenger car fleet), assessing relationships between fatality risk, mass, and footprint for both passenger cars and LTVs (light trucks and vans).[113] As part of its results, the new report presents an "upper-estimate scenario," a "lower-estimate scenario," as well as an "actual regression result scenario" representing potential safety effects of future mass reductions without corresponding vehicle size reductions, that assume, by virtue of being a cross-sectional analysis of historical data, that historical relationships between vehicle mass and fatalities are maintained. The "upper-estimate scenario" and "lower-estimate scenario" are based on NHTSA's judgment as a vehicle safety agency, and are not meant to convey any more or less likelihood in the results, but more to convey a sense of bounding for potential safety effects of reducing mass while holding footprint constant. The upper-estimate scenario reflects potential safety effects given the report's finding that, using the one-step regression method of the 2003 Kahane report, the regression coefficients show that mass and footprint each accounted for about half the fatality increase associated with downsizing in a cross-sectional analysis of MYs 1991–1999 cars. A similar effect was found for lighter LTVs. Applying the same regression method to heavier LTVs, however, the coefficients indicated a significant societal fatality reduction when mass, but not footprint, is reduced in the heavier LTVs.[114] Fatalities are reduced primarily because mass reduction in the heavier LTVs will reduce risk to occupants of the other cars and lighter LTVs involved in collisions with these heavier LTVs.[115] Thus, even in the "upper-estimate scenario," the potential fatality increases associated with mass reduction in the passenger cars would be to a large extent offset by the benefits of mass reduction in the heavier LTVs.

The lower-estimate scenario, in turn, reflects NHTSA's estimate of potential safety effects if future mass reduction is accomplished entirely by material substitution, smart design,[116] and component integration, among other things, that can reduce mass without perceptibly changing a vehicle's shape, functionality, or safety performance, maintaining structural strength without compromising other aspects of safety. If future mass reduction follows this path, it could limit the added risk close to only the effects of mass *per se* (the ability to transfer momentum to other vehicles or objects in a collision), resulting in estimated effects in passenger cars that are substantially smaller than in the upper-estimate scenario based directly on the regression results. The lower-estimate scenario also covers both passenger cars and LTVs.

Overall, based on the new analyses, NHTSA estimated that fatality effects could be markedly less than those estimated in the "worst-case scenario" presented in the NPRM. The agencies believe that the overall effect of mass reduction in cars and LTVs may be close to zero, and may possibly be beneficial in terms of the fleet as a whole if mass reduction is carefully applied in the future (as with careful material substitution and other methods of mass reduction that can reduce mass without perceptibly changing a car's shape, functionality, or safety performance,

[112] The analysis excluded 2-door cars.

[113] "Relationships Between Fatality Risk, Mass, and Footprint in Model Year 1991–1999 and Other Passenger Cars and LTVs," Charles J. Kahane, NCSA, NHTSA, March 2010. The text of the report may be found in Chapter IX of NHTSA's FRIA, where it constitutes a section of that chapter. We note that this report has not yet been externally peer-reviewed, and therefore may be changed or refined after it has been subjected to peer review. The results of the report have not been included in the tables summarizing the costs and benefits of this rulemaking and did not affect the stringency of the standards. NHTSA has begun the process for obtaining peer review in accordance with OMB guidance. The agency will ensure that concerns raised during the peer review process are addressed before relying on the report for future rulemakings. The results of the peer review and any subsequent revisions to the report will be made available in a public docket and on NHTSA's Web site as they are completed.

[114] Conversely, the coefficients indicate a significant increase if footprint is reduced.

[115] We note that there may be some (currently non-quantifiable) welfare losses for purchasers of these heavier LTVs, the mass of which is reduced in response to these final standards. This is due to the fact that in certain crashes, as discussed below and in greater detail in Chapter IX of the NHTSA FRIA, more mass will always be helpful (although certainly in other crashes, the amount of mass reduction modeled by the agency will not be enough to have any significant effect on driver/occupant safety). However, we believe the effects of this will likely be minor. Consumer welfare impacts of the final rule are discussed in more detail in Chapter VIII of the NHTSA FRIA.

[116] Manufacturers may reduce mass through smart design using computer aided engineering (CAE) tools that can be used to better optimize load paths within structures by reducing stresses and bending moments applied to structures. This allows better optimization of the sectional thicknesses of structural components to reduce mass while maintaining or improving the function of the component. Smart designs also integrate separate parts in a manner that reduces mass by combining functions or the reduced use of separate fasteners. In addition, some "body on frame" vehicles are redesigned with a lighter "unibody" construction.

and maintain its structural strength without making it excessively rigid). This is especially important if the mass reduction in the heavier LTVs is greater (in absolute terms) than in passenger cars, as discussed further below and in the 2010 Kahane report.

The following sections will address how the agencies addressed potential safety effects in the NPRM for the proposed standards, how commenters responded, and the work that NHTSA has done since the NPRM to revise its estimates of potential safety effects for the final rule. The final section discusses some of the agencies' plans for the future with respect to potential analysis and studies to further enhance our understanding of this important and complex issue.

1. What did the agencies say in the NPRM with regard to potential safety effects?

In the NPRM preceding these final standards, NHTSA's safety assessment derived from the agency's belief that some of these vehicle factors, namely vehicle mass and footprint, could not be accurately separated. NHTSA relied on the 2003 study by Dr. Charles Kahane, which estimates the effect of 100-pound reductions in MYs 1991–1999 heavy light trucks and vans (LTVs), light LTVs, heavy passenger cars, and light passenger cars.[117] The study compares the fatality rates of LTVs and cars to quantify differences between vehicle types, given drivers of the same age/gender, etc. In that analysis, the effect of "weight reduction" is not limited to the effect of mass *per se,* but includes all the factors, such as length, width, structural strength, safety features, and size of the occupant compartment, that were naturally or historically confounded with mass in MYs 1991–1999 vehicles. The rationale was that adding length, width, or strength to a vehicle historically also made it heavier.

NHTSA utilized the relationships between mass and safety from Kahane (2003), expressed as percentage increases in fatalities per 100-pound mass reduction, and examined the mass effects assumed in the NPRM modeling analysis. While previous CAFE rulemakings had limited mass reduction as a "technology option" to vehicles over 5,000 pounds GVWR, both NHTSA's and EPA's modeling analyses in the NPRM included mass reduction of up to 5–10 percent of baseline curb weight, depending on vehicle subclass, in response to recently-submitted manufacturer product plans as well as public statements indicating that these levels were possible and likely. 5–10 percent represented a maximum bound; EPA's modeling, for example, included average vehicle weight reductions of 4 percent between MYs 2011 and 2016, although the average per-vehicle mass reduction was greater in absolute terms for light trucks than for passenger cars. NHTSA's assumptions for mass reduction were also limited by lead time such that mass reductions of 1.5 percent were included for redesigns occurring prior to MY 2014, and mass reductions of 5–10 percent were only "achievable" in redesigns occurring in MY 2014 or later. NHTSA further assumed that mass reductions would be limited to 5 percent for small vehicles (*e.g.,* subcompact passenger cars), and that reductions of 10 percent would only be applied to the larger vehicle types (*e.g.,* large light trucks).

Based on these assumptions of how manufacturers might comply with the standards, NHTSA examined the effects of the identifiable safety trends over the lifetime of the vehicles produced in each model year. The effects were estimated on a year-by-year basis, assuming that certain known safety trends would result in a reduction in the target population of fatalities from which the mass effects are derived.[118] Using this method, NHTSA found a 12.6 percent reduction in fatality levels between 2007 and 2020. The estimates derived from applying Kahane's 2003 percentages to a baseline of 2007 fatalities were then multiplied by 0.874 to account for changes that the agency believed would take place in passenger car and light truck safety between the 2007 baseline on-road fleet used for that particular analysis and year 2020.[119]

NHTSA and EPA both emphasized that the safety effect estimates in the NPRM needed to be understood in the context of the 2003 Kahane report, which is based upon a cross-sectional analysis of the actual on-road safety experience of 1991–1999 vehicles. For those vehicles, heavier usually also meant larger-footprint. Hence, the numbers in those analyses were used to predict the safety-related fatalities that could occur in the unlikely event that weight reduction for MYs 2012–2016 is accomplished entirely by reducing mass *and* reducing footprint. Any estimates derived from those analyses represented a "worst-case" estimate of safety effects, for several reasons.

First, manufacturers are far less likely to reduce mass by "downsizing" (making vehicles smaller overall) under the current attribute-based standards, because the standards are based on vehicle footprint. The selection of footprint as the attribute in setting CAFE and GHG standards helps to reduce the incentive to alter a vehicle's physical dimensions. This is because as footprint decreases, the corresponding fuel economy/GHG emission target becomes more stringent.[120] The shape of the footprint curves themselves have also been designed to be approximately "footprint neutral" within the sloped portion of the functions—that is, to neither encourage manufacturers to increase the footprint of their fleets, nor to decrease it. For further discussion on these aspects of the standards, *please see* Section II.C above and Chapter 2 of the Joint TSD. However, as discussed in Sections III.H.1 and IV.G.6 below, the agencies acknowledge some uncertainty regarding how consumer purchases will change in response to the vehicles

[117] Kahane, Charles J., PhD, "Vehicle Weight, Fatality Risk and Crash Compatibility of Model Year 1991–99 Passenger Cars and Light Trucks," DOT HS 809 662, October 2003, Executive Summary. *Available at http://www.nhtsa.dot.gov/cars/rules/regrev/evaluate/809662.html* (last accessed March 10, 2010).

[118] NHTSA explained that there are several identifiable safety trends that are already in place or expected to occur in the foreseeable future and that were not accounted for in the study. For example, two important new safety standards that have already been issued and will be phasing in during the rulemaking time frame. Federal Motor Vehicle Safety Standard No. 126 (49 CFR 571.126) will require electronic stability control in all new vehicles by MY 2012, and the upgrade to Federal Motor Vehicle Safety Standard No. 214 (Side Impact Protection, 49 CFR 571.214) will likely result in all new vehicles being equipped with head-curtain air bags by MY 2014. Additionally, the agency stated that it anticipates continued improvements in driver (and passenger) behavior, such as higher safety belt use rates. All of these will tend to reduce the absolute number of fatalities resulting from mass reductions. Thus, while the percentage increases in Kahane (2003) was applied, the reduced base resulted in smaller absolute increases than those that were predicted in the 2003 report.

[119] Blincoe, L. and Shankar, U, "The Impact of Safety Standards and Behavioral Trends on Motor Vehicle Fatality Rates," DOT HS 810 777, January 2007. See Table 4 comparing 2020 to 2007 (37,906/43,363 = 12.6% reduction (1-.126 = .874)

[120] We note, however, that vehicle footprint is not synonymous with vehicle size. Since the footprint is only that portion of the vehicle between the front and rear axles, footprint-based standards do not discourage downsizing the portions of a vehicle in front of the front axle and to the rear of the rear axle, or to other portions of the vehicle outside the wheels. The crush space provided by those portions of a vehicle can make important contributions to managing crash energy. NHTSA noted in the NPRM that at least one manufacturer has confidentially indicated plans to reduce overhang as a way of reducing mass on some vehicles during the rulemaking time frame. Additionally, simply because footprint-based standards create no incentive to downsize vehicles, does not mean that manufacturers may not choose to do so if doing so makes it easier to meet the overall standard (as, for example, if the smaller vehicles are so much lighter that they exceed their targets by much greater amounts).

designed to meet the MYs 2012–2016 standards. This could potentially affect the mix of vehicles sold in the future, including the mass and footprint distribution.

As a result, the agencies found it likely that a significant portion of the mass reduction in the MY 2012–2016 vehicles would be accomplished by strategies, such as material substitution, smart design, reduced powertrain requirements,[121] and mass compounding, that have a lesser safety effect than the prevalent 1980s strategy of simply making the vehicles smaller. The agencies noted that to the extent that future mass reductions could be achieved by these methods—without any accompanying reduction in the size or structural strength of the vehicle—then the fatality increases associated with the mass reductions anticipated by the model as a result of the proposed standards could be significantly smaller than those in the worst-case scenario.

However, even though the agencies recognized that these methods of mass reduction could be technologically feasible in the rulemaking time frame, and included them as such in our modeling analyses, the agencies diverged as to how potential safety effects accompanying such methods of mass reduction could be evaluated, particularly in relation to the worst-case scenario presented by NHTSA. NHTSA stated that it could not predict how much smaller those increases would be for any given mixture of mass reduction methods, since the data on the safety effects of mass reduction alone (without size reduction) was not available due to the low numbers of vehicles in the current on-road fleet that have utilized these technologies extensively. Further, to the extent that mass reductions were accomplished through use of light, high-strength materials, NHTSA emphasized that there would be significant additional costs that would need to be determined and accounted for than were reflected in the agency's proposal.

Additionally, NHTSA emphasized that while it thought material substitution and other methods of mass reduction could considerably lessen the potential safety effects compared to the historical trend, NHTSA also stated that it did not believe the effects in passenger cars would be smaller than zero. EPA disagreed with this, and stated in the NPRM that the safety effects could very well be smaller than zero. Even though footprint-based standards discourage downsizing as a way of "balancing out" sales of larger/heavier vehicles, they do not discourage manufacturers from reducing crush space in overhang areas or from reducing structural support as a way of taking out mass.[122] Moreover, NHTSA's analysis had also found that lighter cars have a higher involvement rate in fatal crashes, even after controlling for the driver's age, gender, urbanization, and region of the country. Being unable to explain this clear trend in the crash data, NHTSA stated that it must assume that mass reduction is likely to be associated with higher fatal-crash rates, no matter how the weight reduction is achieved.

NHTSA also noted in the NPRM that several studies by Dynamic Research, Inc. (DRI) had been repeatedly cited to the agency in support of the proposition that reducing vehicle mass while maintaining track width and wheelbase would lead to significant safety benefits. In its 2005 studies, one of which was published and peer-reviewed through the Society of Automotive Engineers as a technical paper, DRI attempted to assess the independent effects of vehicle weight and size (in terms of wheelbase and track width) on safety, and presented results indicating that reducing vehicle weight tends to reduce fatalities, but that reducing vehicle wheelbase and track width tends to increase fatalities. DRI's analysis was based on FARS data for MYs 1985–1998 passenger cars and 1985–1997 light trucks, similar to the MYs 1991–1999 car and truck data used in the 2003 Kahane report. However, DRI included 2-door passenger cars, while the 2003 Kahane report excluded those vehicles out of concern that their inclusion could bias the results of the regression analysis, because a significant proportion of MYs 1991–1999 2-door cars were sports and "muscle" cars, which have particularly high fatal crash rates for their relatively short wheelbases compared to the rest of the fleet. While in the NPRM NHTSA rejected the results of the DRI studies based in part on this concern, the agencies note that upon further consideration, NHTSA has agreed for this final rule that the inclusion of 2-door cars in regression analysis of historical data is appropriate, and indeed has no overly-biasing effects.

The 2005 DRI studies also differed from the 2003 Kahane report in terms of their estimates of the effect of vehicle weight on rollover fatalities. The 2003 Kahane report analyzed a single variable, curb weight, as a surrogate for both vehicle size and weight, and found that curb weight reductions would increase rollover fatalities. The DRI study, in contrast, attempted to analyze curb weight, wheelbase, and track width separately, and found that curb weight reduction would *decrease* rollover fatalities, while wheelbase reduction and track width reduction would increase them. DRI suggested that heavier vehicles may have higher rollover fatalities for two reasons: first, because taller vehicles tend to be heavier, so the correlation between vehicle height and weight and vehicle center-of-gravity height may make heavier vehicles more rollover-prone; and second, because heavier vehicles may have been less rollover-crashworthy due to FMVSS No. 216's constant (as opposed to proportional) requirements for MYs 1995–1999 vehicles weighing more than 3,333 lbs unloaded.

Overall, DRI's 2005 studies found a reduction in fatalities for cars (580 in the first study, and 836 in the second study) and for trucks (219 in the first study, 682 in the second study) for a 100 pound reduction in curb weight without accompanying wheelbase or track width reductions. In the NPRM, NHTSA disagreed with the results of the DRI studies, out of concern that DRI's inclusion of 2-door cars in its analysis biased the results, and because NHTSA was unable to reproduce DRI's results despite repeated attempts. NHTSA stated that it agreed intuitively with DRI's conclusion that vehicle mass reductions without accompanying size reductions (as through substitution of a heavier material for a lighter one) would be less harmful than downsizing, but without supporting real-world data and unable to verify DRI's results, NHTSA stated that it could not conclude that mass reductions would result in safety benefits. EPA, in contrast, believed that DRI's results contained some merit, in particular because the study separated the effects of mass and size and EPA stated that applying them using the curb weight reductions in EPA's modeling analysis would show an overall reduction of fatalities for the proposed standards.

On balance, both agencies recognized that mass reduction could be an important tool for achieving higher levels of fuel economy and reducing CO_2 emissions, and emphasized that NHTSA's fatality estimates represented a worst-case scenario for the potential effects of the proposed standards, and

[121] Reduced powertrain requirements do not include a reduction in performance. When vehicle mass is reduced, engine torque and transmission gearing can be altered so that acceleration performance is held constant instead of improving. A detailed discussion is included in Chapter 3 of the Technical Support Document.

[122] However, we recognize that FMVSS and NCAP ratings may limit the manufacturer's ability to reduce crush space or structural support.

that actual fatalities will be less than these estimates, possibly significantly less, based on the various factors discussed in the NPRM that could reduce the estimates. The agencies sought comment on the safety analysis and discussions presented in the NPRM.

2. What public comments did the agencies receive on the safety analysis and discussions in the NPRM?

Several dozen commenters addressed the safety issue. Claims and arguments made by commenters in response to the safety effects analysis and discussion in the NPRM tended to follow several general themes, as follows:

- NHTSA's safety effects estimates are inaccurate because they do not account for:
  - While NHTSA's study only considers vehicles from MYs 1991–1999, more recently-built vehicles are safer than those, and future vehicles will be safer still;
  - Lighter vehicles are safer than heavier cars in terms of crash-avoidance, because they handle and brake better;
  - Fatalities are linked more to other factors than mass;
  - The structure of the standards reduces/contributes to potential safety effects from mass reduction;
  - NHTSA could mitigate additional safety effects from mass reduction, if there are any, by simply regulating safety more;
  - Casualty risks range widely for vehicles of the same weight or footprint, which skews regression analysis and makes computer simulation a better predictor of the safety effects of mass reduction;
- DRI's analysis shows that lighter vehicles will save lives, and NHTSA reaches the opposite conclusion without disproving DRI's analysis;
  - Possible reasons that NHTSA and DRI have reached different conclusions:
    - NHTSA's study should distinguish between reductions in size and reductions in weight like DRI's;
    - NHTSA's study should include two-door cars;
    - NHTSA's study should have used different assumptions;
    - NHTSA's study should include confidence intervals;
- NHTSA should include a "best-case" estimate in its study;
- NHTSA should not include a "worst-case" estimate in its study;

The agencies recognize that the issue of the potential safety effects of mass reduction, which was one of the many factors considered in the balancing that led to the agencies' conclusion as to appropriate stringency levels for the MYs 2012–2016 standards, is of great interest to the public and could possibly be a more significant factor in regulators' and manufacturers' decisions with regard to future standards beyond MY 2016. The agencies are committed to analyzing this issue thoroughly and holistically going forward, based on the best available science, in order to further their closely related missions of safety, energy conservation, and environmental protection. We respond to the issues and claims raised by commenters in turn below.

NHTSA's estimates are inaccurate because NHTSA's study only considers vehicles from MYs 1991–1999, but more recently-built vehicles are safer than those, and future vehicles will be safer still

A number of commenters (CAS, Adcock, NACAA, NJ DEP, NY DEC, UCS, and Wenzel) argued that the 2003 Kahane report, on which the "worst-case scenario" in the NPRM was based, is outdated because it considers the relationship between vehicle weight and safety in MYs 1991–1999 passenger cars. These commenters generally stated that data from MYs 1991–1999 vehicles provide an inaccurate basis for assessing the relationship between vehicle weight and safety in current or future vehicles, because the fleets of vehicles now and in the future are increasingly different from that 1990s fleet (more crossovers, fewer trucks, lighter trucks, etc.), with different vehicle shapes and characteristics, different materials, and more safety features. Several of these commenters argued that NHTSA should conduct an updated analysis for the final rule using more recent data—Wenzel, for example, stated that an updated regression analysis that accounted for the recent introduction of crossover SUVs would likely find reduced casualty risk, similar to DRI's previous finding using fatality data. CEI, in contrast, argued that the "safety trade-off" would not be eliminated by new technologies and attribute-based standards, because additional weight inherently makes a vehicle safer to its own occupants, citing the 2003 Kahane report, while AISI argued that Desapriya had found that passenger car drivers and occupants are two times more likely to be injured than drivers and occupants in larger pickup trucks and SUVs.

Several commenters (Adcock, CARB, Daimler, NESCAUM, NRDC, Public Citizen, UCS, Wenzel) suggested that NHTSA's analysis was based on overly pessimistic assumptions about how manufacturers would choose to reduce mass in their vehicles, because manufacturers have a strong incentive in the market to build vehicles safely. Many of these commenters stated that several manufacturers have already committed publicly to fairly ambitious mass reduction goals in the mid-term, but several stated further that NHTSA should not assume that manufacturers will reduce the same amount of mass in all vehicles, because it is likely that they will concentrate mass reduction in the heaviest vehicles, which will improve compatibility and decrease aggressivity in the heaviest vehicles. Daimler emphasized that all vehicles will have to comply with the Federal Motor Vehicle Safety Standards, and will likely be designed to test well in NHTSA's NCAP tests.

Other commenters (Aluminum Association, CARB, CAS, ICCT, MEMA, NRDC, U.S. Steel) also emphasized the need for NHTSA to account for the safety benefits to be expected in the future from use of advanced materials for lightweighting purposes and other engineering advances. The Aluminum Association stated that advanced vehicle design and construction techniques using aluminum can improve energy management and minimize adverse safety effects of their use,[123] but that NHTSA's safety analysis could not account for those benefits if it were based on MYs 1991–1999 vehicles. CAS, ICCT, and U.S. Steel discussed similar benefits for more recent and future vehicles built with high strength steel (HSS), although U.S. Steel cautioned that given the stringency of the proposed standards, manufacturers would likely be encouraged to build smaller and lighter vehicles in order to achieve compliance, which fare worse in head-on collisions than larger, heavier vehicles. AISI, in contrast to U.S. Steel, stated that in its research with the Auto/Steel Partnership and in programs supported by DOE, it had found that the use of new Advanced HSS steel grades could enable mass of critical crash structures, such as front rails and bumper systems, to be reduced by 25 percent without degrading performance in standard NHTSA frontal or IIHS offset

[123] The Aluminum Association (NHTSA–2009–0059–0067.3) stated that its research on vehicle safety compatibility between an SUV and a mid-sized car, done jointly with DRI, shows that reducing the weight of a heavier SUV by 20% (a realistic value for an aluminum-intensive vehicle) could reduce the combined injury rate for both vehicles by 28% in moderately severe crashes. The commenter stated that it would keep NHTSA apprised of its results as its research progressed. Based on the information presented, NHTSA believes that this research appears to agree with NHTSA's latest analysis, which finds that a reduction in weight for the heaviest vehicles may improve overall fleet safety.

instrumented crash tests compared to their "heavier counterparts."

Agencies' response: NHTSA, in consultation with EPA and DOE, plans to begin updating the MYs 1991–1999 database on which NHTSA's safety analyses in the NPRM and final rule are based in the next several months in order to analyze the differences in safety effects against vehicles built in more recent model years. As this task will take at least a year to complete, beginning it immediately after the NPRM would not have enabled the agency to complete it and then conduct a new analysis during the period between the NPRM and the final rule.

For purposes of this final rule, however, we believe that using the same MYs 1991–1999 database as that used in the 2003 Kahane study provides a reasonable basis for attempting to estimate safety effects due to reductions in mass. While commenters often stated that updating the database would help to reveal the effect of recently-introduced lightweight vehicles with extensive material substitution, there have in fact not yet been a significant number of vehicles with substantial mass reduction/material substitution to analyze, and they must also show up in the crash databases for NHTSA to be able to add them to its analysis. Based on NHTSA's research, specifically, on three statistical analyses over a 12-year period (1991–2003) covering a range of 22 model years (1978–1999), NHTSA believes that the relationships between mass, size, and safety has only changed slowly over time, although we recognize that they may change somewhat more rapidly in the future.[124] As the on-road fleet gains increasing numbers of vehicles with increasing amounts of different methods of mass reduction applied to them, we may begin to discern changes in the crash databases due to the presence of these vehicles, but any such changes are likely to be slow and evolutionary, particularly in the context of MYs 2000–2009 vehicles. The agencies do expect that further analysis of historical data files will continue to provide a robust and practicable basis for estimating the potential safety effects that might occur with future reductions in vehicle mass. However, we recognize that estimates derived from analysis of historical data, like estimates from any other type of analysis (including simulation-based analysis, which cannot feasibly cover all relevant scenarios), will be uncertain in terms of predicting actual future outcomes with respect to a vehicle fleet, driving population, and operating environment that does not yet exist.

The agencies also recognize that more recent vehicles have more safety features than 1990s vehicles, which are likely to make them safer overall. To account for this, NHTSA did adjust the results of both its NPRM and final rule analysis to include known safety improvements, like ESC and increases in seat belt use, that have occurred since MYs 1991–1999.[125] However, simply because newer vehicles have more safety countermeasures, does not mean that the weight/safety relationship necessarily changes. More likely, it would change the target population (the number of fatalities) to which one would apply the weight/safety relationship. Thus, we still believe that some mass reduction techniques for both passenger cars and light trucks can make them less safe, in certain crashes as discussed in NHTSA's FRIA, than if mass had not been reduced.[126]

As for NHTSA's assumptions about mass reduction, in its analysis, NHTSA generally assumed that lighter vehicles could be reduced in weight by 5 percent while heavier light trucks could be reduced in weight by 10 percent. NHTSA recognizes that manufacturers might choose a different mass reduction scheme than this, and that its quantification of the estimated effect on safety would be different if they did. We emphasize that our estimates are based on the assumptions we have employed and are intended to help the agency consider the potential effect of the final standards on vehicle safety. Thus, based on the 2010 Kahane analysis, reductions in weight for the heavier light trucks would have positive overall safety effects,[127] while mass reductions for passenger cars and smaller light trucks would have negative overall safety effects.

NHTSA's estimates are inaccurate because they do not account for the fact that lighter vehicles are safer than heavier cars in terms of crash-avoidance, because they handle and brake better

ICCT stated that lighter vehicles are better able to avoid crashes because they "handle and brake slightly better," arguing that size-based standards encourage lighter-weight car-based SUVs with "significantly better handling and crash protection" than 1996–1999 mid-size SUVs, which will reduce both fatalities and fuel consumption. ICCT stated that NHTSA did not include these safety benefits in its analysis. DRI also stated that its 2005 report found that crash avoidance improves with reduction in curb weight and/or with increases in wheelbase and track, because "Crash avoidance can depend, amongst other factors, on the vehicle directional control and rollover characteristics." DRI argued that, therefore, "These results indicate that vehicle weight reduction tends to decrease fatalities, but vehicle wheelbase and track reduction tends to increase fatalities."

Agencies' response: In fact, NHTSA's regression analysis of crash fatalities per million registration years measures the effects of crash avoidance, if there are any, as well as crashworthiness. Given that the historical empirical data for passenger cars show a trend of higher crash rates for lighter cars, it is unclear whether lighter cars have, in the net, superior crash avoidance, although the agencies recognize that they may have advantages in certain individual situations. EPA presents a discussion of improved accident avoidance as vehicle mass is reduced in Chapter 7.6 of its final RIA. The important point to emphasize is that it depends on the situation—it would oversimplify drastically to point to one situation in which extra mass helps or hurts and then extrapolate effects for crash avoidance across the board based on only that.

For example, the relationship of vehicle mass to rollover and directional stability is more complex than commenters imply. For rollover, it is true that if heavy pickups were always more top-heavy than lighter pickups of the same footprint, their higher center of gravity could make them more rollover-prone, yet some mass can be placed so as to lower a vehicle's center of gravity and make it less rollover-prone. For mass reduction to be beneficial in rollover crashes, then, it must take

[124] NHTSA notes the CAS' comments regarding changes in the vehicle fleets since the introduction of CAFE standards in the late 1970s, but believes they apply more to the differences between late 1970s through 1980s vehicles and 2010s vehicles than to the differences between 1990s and 2010s vehicles. NHTSA believes that the CAS comments regarding the phase-out of 1970s vehicles and their replacement with safer, better fuel-economy-achieving 1980s vehicles paint with rather too large a brush to be relevant to the main discussion of whether the 2003 Kahane report database can reasonably be used to estimate safety effects of mass reduction for the MYs 2012–2016 fleet.

[125] See NHTSA FRIA Chapter IX.

[126] If one has a vehicle (vehicle A), and both reduces the vehicle's mass and adds new safety equipment to it, thus creating a variant (vehicle A_1), the variant might conceivably have a level of overall safety for its occupants equal to that of the original vehicle (vehicle A). However, vehicle A_1 might not be as safe as second variant (vehicle A_2) of vehicle A, one that is produced by adding to vehicle A the same new safety equipment added to the first variant, but this time without any mass reduction.

[127] This is due to the beneficial effect on the occupants of vehicles struck by the downweighted larger vehicles.

center of gravity height into account along with other factors such as passenger compartment design and structure, suspension, the presence of various safety equipment, and so forth.

Similarly, for directional stability, it is true that having more mass increases the "understeer gradient" of cars—*i.e.,* it reinforces their tendency to proceed in a straight line and slows their response to steering input, which would be harmful where prompt steering response is essential, such as in a double-lane-change maneuver to avoid an obstacle. Yet more mass and a higher understeer gradient could help when it is better to remain on a straight path, such as on a straight road with icy patches where wheel slip might impair directional stability. Thus, while less vehicle mass can sometimes improve crash avoidance capability, there can also be situations when more vehicle mass can help in other kinds of crash avoidance.

Further, NHTSA's research suggests that additional vehicle mass may be even more helpful, as discussed in Chapter IX of NHTSA's FRIA, when the average driver's response to a vehicle's maneuverability is taken into account. Lighter cars have historically (1976–2009) had higher collision-involvement rates than heavier cars—even in multi-vehicle crashes where directional and rollover stability is not particularly an issue.[128] Based on our analyses using nationally-collected FARS and GES data, drivers of lighter cars are more likely to be the culpable party in a 2-vehicle collision, even after controlling for footprint, the driver's age, gender, urbanization, and region of the country.

Thus, based on this data, it appears that lighter cars may not be driven as well as heavier cars, although it is unknown why this is so. If poor drivers intrinsically chose light cars (self-selection), it might be evidenced by an increase in antisocial driving behavior (such as DWI, drug involvement, speeding, or driving without a license) as car weight decreases, after controlling for driver age and gender—in addition to the increases in merely culpable driver behavior (such as failure to yield the right of way). But analyses in NHTSA's 2003 report did not show an increase in antisocial driver behavior in the lighter cars paralleling their increase in culpable involvements.

NHTSA also hypothesizes that certain aspects of lightness and/or smallness in a car may give a driver a perception of greater maneuverability that ultimately results in driving with less of a "safety margin," *e.g.,* encouraging them to weave in traffic. That may appear paradoxical at first glance, as maneuverability is, in the abstract, a safety plus. Yet the situation is not unlike powerful engines that could theoretically enable a driver to escape some hazards, but in reality have long been associated with high crash and fatality rates.[129]

NHTSA's estimates are inaccurate because fatalities are linked more to other factors than mass

Tom Wenzel stated that the safety record of recent model year crossover SUVs indicates that weight reduction in this class of vehicles (small to mid-size SUVs) resulted in a reduction in fatality risk. Wenzel argued that NHTSA should acknowledge that other vehicle attributes may be as important, if not more important, than vehicle weight or footprint in terms of occupant safety, such as unibody construction as compared to ladder-frame, lower bumpers, and less rigid frontal structures, all of which make crossover SUVs more compatible with cars than truck-based SUVs.

Marc Ross commented that fatalities are linked more strongly to intrusion than to mass, and stated that research by safety experts in Japan and Europe suggests the main cause of serious injuries and deaths is intrusion due to the failure of load-bearing elements to properly protect occupants in a severe crash. Ross argued that the results from this project have "overturned the original views about compatibility," which thought that mass and the mass ratio were the dominant factors. Since footprint-based standards will encourage the reduction of vehicle weight through materials substitution while maintaining size, Ross stated, they will help to reduce intrusion and consequently fatalities, as the lower weight reduces crash forces while maintaining size preserves crush space. Ross argued that this factor was not considered by NHTSA in its discussion of safety. ICCT agreed with Ross' comments on this issue.

In previous comments on NHTSA rulemakings and in several studies, Wenzel and Ross have argued generally that vehicle design and "quality" is a much more important determinant of vehicle safety than mass. In comments on the NPRM, CARB, NRDC, Sierra Club, and UCS echoed this theme.

ICCT commented as well that fatality rates in the EU are much lower than rates in the U.S., even though the vehicles in the EU fleet tend to be smaller and lighter than those in the U.S. fleet. Thus, ICCT argued, "This strongly supports the idea that vehicle and highway design are far more important factors than size or weight in vehicle safety." ICCT added that "It also suggests that the rise in SUVs in the U.S. has not helped reduce fatalities." CAS also commented that Germany's vehicle fleet is both smaller and lighter than the American fleet, and has lower fatality rates.

Agencies' response: NHTSA and EPA agree that there are many features that affect safety. While crossover SUVs have lower fatality rates than truck-based SUVs, there are no analyses that attribute the improved safety to mass alone, and not to other factors such as the lower center of gravity or the unibody construction of these vehicles. While a number of improvements in safety can be made, they do not negate the potential that another 100 lbs. could make a passenger car or crossover vehicle safer for its occupants, because of the effects of mass per se as discussed in NHTSA's FRIA, albeit similar mass reductions could make heavier LTVs safer to other vehicles without necessarily harming their own drivers and occupants. Moreover, in the 2004 response to docket comments, NHTSA explained that the significant relationship between mass and fatality risk persisted even after controlling for vehicle price or nameplate, suggesting that vehicle "quality" as cited by Wenzel and Ross is not necessarily more important than vehicle mass.

As for reductions in intrusions due to material substitution, the agencies agree generally that the use of new and innovative materials may have the potential to reduce crash fatalities, but such vehicles have not been introduced in large numbers into the vehicle fleet. The agencies will continue to monitor the situation, but ultimately the effects of different methods of mass reduction on overall safety in the real world (not just in simulations) will need to be analyzed when vehicles with these types of mass reduction are on the road in sufficient quantities to provide statistically significant results. For example, a vehicle that is designed to be

[128] See, *e.g.,* NHTSA (2000). *Traffic Safety Facts 1999.* Report No. DOT HS 809 100. Washington, DC: National Highway Traffic Safety Administration, p. 71; Najm, W.G., Sen, B., Smith, J.D., and Campbell, B.N. (2003). *Analysis of Light Vehicle Crashes and Pre-Crash Scenarios Based on the 2000 General Estimates System,* Report No. DOT HS 809 573. Washington, DC: National Highway Traffic Safety Administration, p. 48.

[129] Robertson, L.S. (1991), "How to Save Fuel and Reduce Injuries in Automobiles," *The Journal of Trauma,* Vol. 31, pp. 107–109; Kahane, C.J. (1994). Correlation of NCAP Performance with Fatality Risk in Actual Head-On Collisions, NHTSA Technical Report No. DOT HS 808 061. Washington, DC: National Highway Traffic Safety Administration, *http://www-nrd.nhtsa.dot.gov/Pubs/808061.PDF,* pp. 4–7.

much stiffer to reduce intrusion is likely to have a more severe crash pulse and thus impose greater forces on the occupants during a crash, and might not necessarily be good for elderly and child occupant safety in certain types of crashes. Such trade-offs make it difficult to estimate overall results accurately without real world data. The agencies will continue to evaluate and analyze such real world data as it becomes available, and will keep the public informed as to our progress.

ICCT's comment illustrates the fact that different vehicle fleets in different countries can face different challenges. NHTSA does not believe that the fact that the EU vehicle fleet is generally lighter than the U.S. fleet is the exclusive reason, or even the primary factor, for the EU's lower fatality rates. The data ICCT cites do not account for significant differences between the U.S. and EU such as in belt usage, drunk driving, rural/urban roads, driving culture, etc.

The structure of the standards reduces/contributes to potential safety risks from mass reduction

Since switching in 2006 to setting attribute-based light truck CAFE standards, NHTSA has emphasized that one of the benefits of a footprint-based standard is that it discourages manufacturers from building smaller, less safe vehicles to achieve CAFE compliance by "balancing out" their larger vehicles, and thus avoids a negative safety consequence of increasing CAFE stringency.[130] Some commenters on the NPRM (Daimler, IIHS, NADA, NRDC, Sierra Club *et al.*) agreed that footprint-based standards would protect against downsizing and help to mitigate safety risks, while others stated that there would still be safety risks even with footprint-based standards—CEI, for example, argued that mass reduction inherently creates safety risks, while IIHS and Porsche expressed concern about footprint-based standards encouraging manufacturers to manipulate wheelbase, which could reduce crush space and worsen vehicle handling. U.S. Steel and AISI both commented that the "aggressive schedule" for the proposed increases in stringency could encourage manufacturers to build smaller, lighter vehicles in order to comply.

Some commenters also focused on the shape and stringency of the target curves and their potential effect on vehicle safety. IIHS agreed with the agencies' tentative decision to cut off the target curves at the small-footprint end. Regarding the safety effect of the curves requiring less stringent targets for larger vehicles, while IIHS stated that increasing footprint is good for safety, CAS, Wenzel, and the UCSB students stated that decreasing footprint may be better for safety in terms of risk to occupants of other vehicles. Daimler, Wenzel, and the University of PA Environmental Law Project commented generally that more similar passenger car and light truck targets at identical footprints (as Wenzel put it, a single target curve) would improve fleet compatibility and thus, safety, by encouraging manufacturers to build more passenger cars instead of light trucks.

Agencies' response: The agencies continue to believe that footprint-based standards help to mitigate potential safety risks from downsizing if the target curves maintain sufficient slope, because, based on NHTSA's analysis, larger-footprint vehicles are safer than smaller-footprint vehicles.[131] The structure of the footprint-based curves will also discourage the upsizing of vehicles. Nevertheless, we recognize that footprint-based standards are not a panacea—NHTSA's analysis continues to show that there was a historical relationship between lower vehicle mass and increased safety risk in passenger cars even if footprint is maintained, and there are ways that manufacturers may increase footprint that either improve or reduce vehicle safety, as indicated by IIHS and Porsche.

With regard to whether the agencies should set separate curves or a single one, NHTSA also notes in Section II.C that EPCA requires NHTSA to establish standards separately for passenger cars and light trucks, and thus concludes that the standards for each fleet should be based on the characteristics of vehicles in each fleet. In other words, the passenger car curve should be based on the characteristics of passenger cars, and the light truck curve should be based on the characteristics of light trucks—thus to the extent that those characteristics are different, an artificially-forced convergence would not accurately reflect those differences. However, such convergence could be appropriate depending on future trends in the light vehicle market, specifically further reduction in the differences between passenger car and light truck characteristics. While that trend was more apparent when car-like 2WD SUVs were classified as light trucks, it seems likely to diminish for the model year vehicles subject to these rules as the truck fleet will be more purely "truck-like" than has been the case in recent years.

NHTSA's estimates are inaccurate because NHTSA could mitigate additional safety risks from mass reduction, if there are any, by simply regulating safety more

Since NHTSA began considering the potential safety risks from mass reduction in response to increased CAFE standards, some commenters have suggested that NHTSA could mitigate those safety risks, if any, by simply regulating more.[132] In response to the safety analysis presented in the NPRM, several commenters stated that NHTSA should develop additional safety regulations to require vehicles to be designed more safely, whether to improve compatibility (Adcock, NY DEC, Public Citizen, UCS), to require seat belt use (CAS, UCS), to improve rollover and roof crush resistance (UCS), or to improve crashworthiness generally by strengthening NCAP and the star rating system (Adcock). Wenzel commented further that "Improvements in safety regulations will have a greater effect on occupant safety than FE standards that are structured to maintain, but may actually increase, vehicle size."

Agencies' response: NHTSA appreciates the commenters' suggestions and notes that the agency is continually striving to improve motor vehicle safety consistent with its mission. As noted above, improving safety in other areas affects the target population that the mass/footprint relationship could affect, but it does not necessarily change the relationship.

The 2010 Kahane analysis discussed in this final rule evaluates the relative safety risk when vehicles are made lighter than they might otherwise be absent the final MYs 2012–2016 standards. It does consider the effect of known safety regulations as they are projected to affect the target population.

Casualty risks range widely for vehicles of the same weight or footprint, which skews regression analysis and makes computer simulation a better predictor of the safety effects of mass reduction

[130] We note that commenters were divided on whether they believed there was a clear correlation between vehicle size/weight and safety (CEI, Congress of Racial Equality, Heritage Foundation, IIHS, Spurgeon, University of PA Environmental Law Project) or whether they believed that the correlation was less clear, for example, because they believed that vehicle design was more important than vehicle mass (CARB, Public Citizen).

[131] *See* Chapter IX of NHTSA's FRIA.

[132] *See, e.g.,* MY 2011 CAFE final rule, 74 FR 14403–05 (Mar. 30, 2009).

Wenzel commented that he had found, in his most recent work, after accounting for drivers and crash location, that there is a wide range in casualty risk for vehicles with the same weight or footprint. Wenzel stated that for drivers, casualty risk does generally decrease as weight or footprint increases, especially for passenger cars, but the degree of variation in the data for vehicles (particularly light trucks) at a given weight or footprint makes it difficult to say that a decrease in weight or footprint will necessarily result in increased casualty risk. In terms of risk imposed on the drivers of other vehicles, Wenzel stated that risk increases as light truck weight or footprint increases.

Wenzel further stated that because a regression analysis can only consider the average trend in the relationship between vehicle weight/size and risk, it must "ignore" vehicles that do not follow that trend. Wenzel therefore recommended that the agency employ computer crash simulations for analyzing the effect of vehicle weight reduction on safety, because they can "pinpoint the effect of specific vehicle designs on safety," and can model future vehicles which do not yet exist and are not bound to analyzing historical data. Wenzel cited, as an example, a DRI simulation study commissioned by the Aluminum Association (Kebschull 2004), which used a computer model to simulate the effect of changing SUV mass or footprint (without changing other attributes of the vehicle) on crash outcomes, and showed a 15 percent net decrease in injuries, while increasing wheelbase by 4.5 inches while maintaining weight showed a 26 percent net decrease in serious injuries.

Agencies' response: The agencies have reviewed Mr. Wenzel's draft report for DOE to which he referred in his comments, but based on NHTSA's work do not find such a wide range of safety risk for vehicles with the same weight, although we agree there is a range of risk for a given footprint. Wenzel found that for drivers, casualty risk does generally decrease as weight or footprint increases, especially for passenger cars, and that in terms of risk imposed on the drivers of other vehicles, risk increases as light truck weight or footprint increases, but concluded that the variation in the data precluded the possibility of drawing any conclusions. In the 2010 Kahane study presented in the FRIA, NHTSA undertook a similar analysis in which it correlated weight to fatality risk for vehicles of essentially the same footprint.[133] The "decile analysis," provided as a check on the trend/direction of NHTSA's regression analysis, shows that societal fatality risk generally increases and rarely decreases for lighter relative to heavier cars of the same footprint. Thus, while Mr. Wenzel was reluctant to draw a conclusion, NHTSA believes that both our research and Mr. Wenzel's appear to point to the same conclusion. We agree that there is a wide range in casualty risk among cars of the same footprint, but we find that that casualty risk is correlated with weight. The correlation shows that heavier cars have lower overall societal fatality rates than lighter cars of very similar footprint.

The agencies agree that simulation can be beneficial in certain circumstances. NHTSA cautions, however, that it is difficult for a simulation analysis to capture the full range of variations in crash situations in the way that a statistical regression analysis does. Vehicle crash dynamics are complex, and small changes in initial crash conditions (such as impact angle or closing speed) can have large effects on injury outcome. This condition is a consequence of variations in the deformation mode of individual components (*e.g.,* buckling, bending, crushing, material failure, etc.) and how those variations affect the creation and destruction of load paths between the impacting object and the occupant compartment during the crash event. It is therefore difficult to predict and assess structural interactions using computational methods when one does not have a detailed, as-built geometric and material model. Even when a complete model is available, prudent engineering assessments require extensive physical testing to verify crash behavior and safety. Despite all this, the agencies recognize that detailed crash simulations can be useful in estimating the relative structural effects of design changes over a limited range of crash conditions, and will continue to evaluate the appropriate use of this tool in the future.

Simplified crash simulations can also be valuable tools, but only when employed as part of a comprehensive analytical program. They are especially valuable in evaluating the relative effect and associated confidence intervals of feasible design alternatives. For example, the method employed by Nusholtz *et al.*[134] could be used by a vehicle designer to estimate the benefit of incremental changes in mass or wheelbase as well as the tradeoffs that might be made between them once that designer has settled on a preliminary design. A key difference between the research by Nusholtz and the research by Kebschull that Mr. Wenzel cited[135] is in their suggested applications. The former is useful in evaluating proposed alternatives early in the design process—Nusholtz specifically warns that the model provides only "general insights into the overall risk * * * and cannot be used to obtain specific response characteristics." Mr. Wenzel implies the latter can "isolate the effect of specific design changes, such as weight reduction" and thus quantify the fleet-wide effect of substantial vehicle redesigns. Yet while Kebschull reports injury reductions to three significant digits, there is no validation that vehicle structures of the proposed weight and stiffness are even feasible with current technology. Thus, while the agencies agree that computer simulations can be useful tools, we also recognize the value of statistical regression analysis for determining fleet-wide effects, because it inherently incorporates real-world factors in historical safety assessments.

DRI's analysis shows that lighter vehicles will save lives, and NHTSA reaches the opposite conclusion without disproving DRI's analysis

The difference between NHTSA's results and DRI's results for the relationship between vehicle mass and vehicle safety has been at the crux of this issue for several years. While NHTSA offered some theories in the NPRM as to why DRI might have found a safety benefit for mass reduction, NHTSA's work since then has enabled it to identify what we believe is the most likely reason for DRI's findings.

[133] Subsections 2.4 and 3.3 of new report.

[134] Nusholtz, G.S., G. Rabbiolo, and Y. Shi, "Estimation of the Effects of Vehicle Size and Mass on Crash-Injury Outcome Through Parameterized Probability Manifolds," Society of Automotive Engineers (2003), Document No. 2003–01–0905. *Available at http://www.sae.org/technical/papers/2003–01–0905* (last accessed Feb. 15, 2010).

[135] Mr. Wenzel cites the report by Kebschull et al. [2004, DRI–TR–04–04–02] as an example of what he regards as the effective use of computer crash simulation. NHTSA does not concur that this analysis represents a viable analytical method for evaluating the fleet-wide tradeoffs between vehicle mass and societal safety. The simulation method employed was not a full finite element representation of each major structural component in the vehicles in question. Instead, an Articulated Total Body (ATB) representation was constructed for each of two representative vehicles. In the ATB model, large structural subsystems were represented by a single ellipsoid. Consolidated load-deflection properties of these subsystems and the joints that tie them together were "calibrated" for an ATB vehicle model by requiring that it reproduce the acceleration pulse of a physical NHTSA crash test. NHTSA notes that vehicle simulation models that are calibrated to a single crash test configuration (*e.g.,* a longitudinal NCAP test into a rigid wall) are often ill-equipped to analyze alternative crash scenarios (*e.g.,* vehicle-to-vehicle crashes at arbitrary angles and lateral offsets).

The potential near multicollinearity of the variables of curb weight, track width, and wheelbase creates some degree of concern that any regression models with those variables could inaccurately calibrate their effects. However, based on its own experience with statistical analysis, NHTSA believes that the specific two-step regression model used by DRI increases this concern, because it weakens relationships between curb weight and dependent variables by splitting the effect of curb weight across the two regression steps.

The comments below are in response to NHTSA's theories in the NPRM about the source of the differences between NHTSA's and DRI's results. The majority of them are answered more fully in the 2010 Kahane report included in NHTSA's FRIA, but we respond to them in this document as well for purposes of completeness.

NHTSA and DRI may have reached different conclusions because NHTSA's study does not distinguish between reductions in size and reductions in weight like DRI's

Several commenters (CARB, CBD, EDF, ICCT, NRDC, and UCS) stated that DRI had been able to separate the effect of size and weight in its analysis, and in so doing proved that there was a safety benefit to reducing weight without reducing size. The commenters suggested that if NHTSA properly distinguished between reductions in size and reductions in weight, it would find the same result as DRI.

Agencies' response: In the 2010 Kahane analysis presented in the FRIA, NHTSA did attempt to separate the effects of vehicle size and weight by performing regression analyses with footprint (or alternatively track width and wheelbase) and curb weight as separate independent variables. For passenger cars, NHTSA found that the regressions attribute the fatality increase due to downsizing about equally to mass and footprint—that is, the effect of reducing mass alone is about half the effect of reducing mass *and* reducing footprint. Unlike DRI's results, NHTSA's regressions for passenger cars and for lighter LTVs did not find a safety benefit to reducing weight without reducing size; while NHTSA did find a safety benefit for reducing weight in the heaviest LTVs, the magnitude of the benefit as compared to DRI's was significantly smaller. NHTSA believes that these differences in results may be an artifact of DRI's two-step regression model, as explained above.

NHTSA and DRI may have reached different conclusions because NHTSA's study does not include two-door cars like DRI's

One of NHTSA's primary theories in the NPRM as to why NHTSA and DRI's results differed related to DRI's inclusion in its analysis of 2-door cars. NHTSA had excluded those vehicles from its analysis on the grounds that 2-door cars had a disproportionate crash rate (perhaps due to their inclusion of muscle and sports cars) which appeared likely to skew the regression. Several commenters argued that NHTSA should have included 2-door cars in its analysis. DRI and James Adcock stated that 2-door cars should not be excluded because they represent a significant portion of the light-duty fleet, while CARB and ICCT stated that because DRI found safety benefits whether 2-door cars were included or not, NHTSA should include 2-door cars in its analysis. Wenzel also commented that NHTSA should include 2-door cars in subsequent analyses, stating that while his analysis of MY 2000–2004 crash data from 5 states indicates that, in general, 4-door cars tend to have lower fatality risk than 2-door cars, the risk is even lower when he accounts for driver age/gender and crash location. Wenzel suggested that the increased fatality risk in the 2-door car population seemed primarily attributable to the sports cars, and that that was not sufficient grounds to exclude all 2-door cars from NHTSA's analysis.

Agencies' response: The agencies agree that 2-door cars can be included in the analysis, and NHTSA retracts previous statements that DRI's inclusion of them was incorrect. In its 2010 analysis, NHTSA finds that it makes little difference to the results whether 2-door cars are included, partially included, or excluded from the analysis. Thus, analyses of 2-door and 4-door cars combined, as well as other combinations, have been included in the analysis. That said, no combination of 2-door and 4-door cars resulted in NHTSA's finding a safety benefit for passenger cars due to mass reduction.

NHTSA and DRI may have reached different conclusions due to different assumptions

DRI commented that the differences found between its study and NHTSA's may be due to the different assumptions about the linearity of the curb weight effect and control variable for driver age, vehicle age, road conditions, and other factors. NHTSA's analysis was based on a two-piece linear model for curb weight with two different weight groups (less than 2,950 lbs., and greater than or equal to 2.950 lbs). The DRI analysis assumed a linear model for curb weight with a single weight group. Additionally, DRI stated that NHTSA's use of eight control variables (rather than three control variables like DRI used) for driver age introduces additional degrees of freedom into the regressions, which it suggested may be correlated with the curb weight, wheelbase, and track width, and/or other control variables. DRI suggested that this may also affect the results and cause or contribute to the differences in outcomes between NHTSA and DRI.

Agencies' response: NHTSA's FRIA documents that NHTSA analyzed its database using both a single parameter for weight (a linear model) and two parameters for weight (a two-piece linear model). In both cases, the logistic regression responded identically, allocating the same way between weight, wheelbase, track width, or footprint.[136] Thus, NHTSA does not believe that the differences between its results and DRI's results are due to whether the studies used a single weight group or two weight groups.

The FRIA also documents that NHTSA examined NHTSA's use of eight control variables for driver age (ages 14–30, 30–50, 50–70, 70+ for males and females separately, versus DRI's use of three control variables for age (FEMALE = 1 for females, 0 for males, YOUNGDRV = 35–AGE for drivers under 35, 0 for all others, OLDMAN = AGE–50 for males over 50, 0 for all others; OLDWOMAN = AGE–45 for females over 45, 0 for all others) to see if that affected the results. NHTSA ran its analysis using the eight control variables and again using three control variables for age, and obtained similar results each time.[137] Thus, NHTSA does not believe that the differences between its results and DRI's results are due to the number of control variables used for driver age.

NHTSA's and DRI's conclusions may be similar if confidence intervals are taken into account

DRI commented that NHTSA has not reported confidence intervals, while DRI has reported them in its studies. Thus, DRI argued, it is not possible to determine whether the confidence intervals overlap and whether the differences between NHTSA's and DRI's analyses are statistically significant.

Agencies' response: NHTSA has included confidence intervals for the main results of the 2010 Kahane analysis, as shown in Chapter IX of NHTSA's FRIA. For passenger cars, the NHTSA results are a statistically

[136] Subsections 2.2 and 2.3 of new report.

[137] *Id.*

significant increase in fatalities with a 100 pound reduction while maintaining track width and wheelbase (or footprint); the DRI results are a statistically significant decrease in fatalities with a 100 pound reduction while maintaining track width and wheelbase. The DRI results are thus outside the confidence bounds of the NHTSA results and do not overlap.

NHTSA should include a "best-case" estimate in its study

Several commenters (Center for Auto Safety, NRDC, Public Citizen, Sierra Club *et al.,* and Wenzel) urged NHTSA to include a "best-case" estimate in the final rule, showing scenarios in which lives were saved rather than lost. Public Citizen stated that there would be safety benefits to reducing the weight of the heaviest vehicles while leaving the weight of the lighter vehicles unchanged, and that increasing the number of smaller vehicles would provide safety benefits to pedestrians, bicyclists, and motorcyclists. Sierra Club *et al.* stated that new materials, smart design, and lighter, more advanced engines can all improve fuel economy while maintaining or increasing vehicle safety. Both Center for Auto Safety and Sierra Club argued that the agency should have presented a "best-case" scenario to balance out the "worst-case" scenario presented in the NPRM, especially if NHTSA itself believed that the worst-case scenario was not inevitable. NRDC requested that NHTSA present both a "best-case" and a "most likely" scenario. Wenzel simply stated that NHTSA did not present a "best-case" scenario, despite DRI's finding in 2005 that fatalities would be reduced if track width was held constant.

Agencies' response: NHTSA has included an "upper estimate" and a "lower estimate" in the new 2010 Kahane analysis. The lower estimate assumes that mass reduction will be accomplished entirely by material substitution or other techniques that do not perceptibly change a vehicle's shape, structural strength, or ride quality. The lower estimate examines specific crash modes and is meant to reflect the increase in fatalities for the specific crash modes in which a reduction in mass *per se* in the case vehicle would result in a reduction in safety: namely, collisions with larger vehicles not covered by the regulations (*e.g.,* trucks with a GVWR over 10,000 lbs), collisions with partially-movable objects (*e.g.,* some trees, poles, parked cars, etc.), and collisions of cars or light LTVs with heavier LTVs—as well as the specific crash modes where a reduction in mass *per se* in the case vehicle would benefit safety: namely, collisions of heavy LTVs with cars or lighter LTVs. NHTSA believes that this is the effect of mass *per se, i.e.,* the effects of reduced mass will generally persist in these crashes regardless of how the mass is reduced. The lower estimate attempts to quantify that scenario, although any such estimate is hypothetical and subject to considerable uncertainty. NHTSA believes that a "most likely" scenario cannot be determined with any certainty, and would depend entirely upon agency assumptions about how manufacturers intend to reduce mass in their vehicles. While we can speculate upon the potential effects of different methods of mass reduction, we cannot predict with certainty what manufacturers will ultimately do.

NHTSA should not include a "worst-case" estimate in its study

NRDC, Public Citizen and Sierra Club *et al.* commented that NHTSA should remove the "worst-case scenario" estimate from the rulemaking, generally because it was based on an analysis that evaluated historical vehicles, and future vehicles would be sufficiently different to render the "worst-case scenario" inapplicable.

Agencies' response: NHTSA stated in the NPRM that the "worst-case scenario" addressed the effect of a kind of downsizing (*i.e.,* mass reduction accompanied by footprint reduction) that was not likely to be a consequence of attribute-based CAFE standards, and that the agency would refine its analysis of such a scenario for the final rule. NHTSA has not used the "worst-case scenario" in the final rule. Instead, we present three scenarios: the first is an estimate based directly on the regression coefficients of weight reduction *while maintaining footprint* in the statistical analyses of historical data. As discussed above, presenting this scenario is possible because NHTSA attempted to separate the effects of weight and footprint reduction in the new analysis. However, even the new analysis of LTVs produced some coefficients that NHTSA did not consider entirely plausible. NHTSA also presents an "upper estimate" in which those coefficients for the LTVs were adjusted based on additional analyses and expert opinion as a safety agency and a "lower estimate," which estimates the effect if mass reduction is accomplished entirely by safety-conscious technologies such as material substitution.

3. How has NHTSA refined its analysis for purposes of estimating the potential safety effects of this Final Rule?

During the past months, NHTSA has extensively reviewed the literature on vehicle mass, size, and fatality risk. NHTSA now agrees with DRI and other commenters that it is essential to analyze the effect of mass independently from the effects of size parameters such as wheelbase, track width, or footprint—and that the NPRM's "worst-case" scenario based on downsizing (in which weight, wheelbase, and track width could all be changed) is not useful for that purpose. The agency should instead provide estimates that better reflect the more likely effect of the regulation—estimating the effect of mass reduction that maintains footprint.

Yet it is more difficult to analyze multiple, independent parameters than a single parameter (*e.g.,* curb weight), because there is a potential concern that the near multicollinearity of the parameters—the strong, natural and historical correlation of mass and size—can lead to inaccurate statistical estimates of their effects.[138] NHTSA has performed new statistical analyses of its historical database of passenger cars, light trucks, and vans (LTVs) from its 2003 report (now including also 2-door cars), assessing relationships between fatality risk, mass, and footprint. They are described in Subsections 2.2 (cars) and 3.2 (LTVs) of the 2010 Kahane report presented in Chapter IX of the FRIA. While the potential concerns associated with near multicollinearity are inherent in regression analyses with multiple size/mass parameters, NHTSA believes that the analysis approach in the 2010 Kahane report, namely a single-step regression analysis, generally reduces those concerns[139] and models the trends in the historical data. The results differ substantially from DRI's, based on a two-step regression analysis. Subsections 2.3 and 2.4 of the 2010

[138] Greene, W. H. (1993). *Econometric Analysis,* Second Edition. New York: Macmillan Publishing Company, pp. 266–268; Allison, P.D. (1999), *Logistic Regression Using the SAS System.* Cary, NC: SAS Institute Inc., pp. 48–51. The report shows variance inflation factor (VIF) scores in the 5–7 range for curb weight, wheelbase, and track width (or, alternatively, curb weight and footprint) in NHTSA's database, exceeding the 2.5 level where near multicollinearity begins to become a concern in logistic regression analyses.

[139] NHTSA believes that, given the near multicollinearity of the independent variables, the two-step regression augments the possibility of estimating inaccurate coefficients for curb weight, because it weakens relationships between curb weight and dependent variables by splitting the effect of curb weight across the two regression steps as discussed further in Subsection 2.3 of NHTSA's report.

Kahane report attempt to account for the differences primarily by applying selected techniques from DRI's analyses to NHTSA's database.

The statistical analyses—logistic regressions—of trends in MYs 1991–1999 vehicles generate one set of estimates of the possible effects of reducing mass by 100 pounds while maintaining footprint. While these effects might conceivably carry over to future mass reductions, there are two reasons that future safety effects of mass reduction could differ from projections from historical data:

- The statistical analyses are "cross-sectional" analyses that estimate the increase in fatality rates for vehicles weighing n-100 pounds relative to vehicles weighing n pounds, across the spectrum of vehicles on the road, from the lightest to the heaviest. They do not directly compare the fatality rates for a specific make and model before and after a 100-pound reduction from that model. Instead, they use the differences across makes and models as a surrogate for the effects of actual reductions within a specific model; those cross-sectional differences could include trends that are statistically, but not causally related to mass.
- The manner in which mass changed across MY 1991–1999 vehicles might not be consistent with future mass reductions, due to the availability of newer materials and design methods.

Therefore, Subsections 2.5 and 3.4 of the 2010 Kahane report supplement those estimates with one or more scenarios in which some of the logistic regression coefficients are replaced by numbers based on additional analyses and NHTSA's judgment of the likely effect of mass *per se* (the ability to transfer momentum to other vehicles or objects in a collision) and of what trends in the historical data could be avoided by current mass-reduction technologies such as materials substitution. The various scenarios may be viewed as a plausible range of point estimates for the effects of mass reduction while maintaining footprint, but they should not be construed as upper and lower bounds. Furthermore, being point estimates, they are themselves subject to uncertainties, such as, for example, the sampling errors associated with statistical analyses.

The principal findings and conclusions of the 2010 Kahane report are as follows:

Passenger cars: This database with the one-step regression method of the 2003 Kahane report estimates an increase of 700–800 fatalities when curb weight is reduced by 100 pounds *and* footprint is reduced by 0.65 square feet (the historic average footprint reduction per 100-pound mass reduction in cars). The regression attributes the fatality increase *about equally to curb weight and to footprint.* The results are approximately the same whether 2-door cars are fully included or partially included in the analysis or whether only 4-door cars are included (as in the 2003 report). Regressions by curb weight, track width and wheelbase produce findings quite similar to the regressions by curb weight and footprint, but the results with the single "size" variable, footprint, rather than the two variables, track width and wheelbase vary even less with the inclusion or exclusion of 2-door cars.

In Subsection 2.3 of the new report, a two-step regression method that resembles (without exactly replicating) the approach by DRI, *when applied to the same (NHTSA's) crash and registration data,* estimates a large *benefit* when mass is reduced, offset by even larger fatality increases when track width and wheelbase (or footprint) are reduced. NHTSA believes that the benefit estimated by this method is inaccurate, due to the potential concerns with the near multicollinearity of the parameters (curb weight, track width, and wheelbase) [140] even though the analysis is theoretically unbiased.[141] Almost any analysis incorporating those parameters has a possibility of inaccurate coefficients due to near multicollinearity; however, based on our own experience with other regression analyses of crash data, NHTSA believes a DRI-type two-step method augments the possibility of estimating inaccurate coefficients for curb weight, because it weakens relationships between curb weight and dependent variables by splitting the effect of curb weight across the two regression steps.

In Subsection 2.4 of the new report, as a check on the results from the regression methods, NHTSA also performed what we refer to as "decile" analyses: Simpler, tabular data analysis that compares fatality rates of cars of different mass but similar footprint. Decile analysis is not a precise tool because it does not control for confounding factors such as driver age/gender or the specific type of car, but it may be helpful in identifying the general directional trend in the data when footprint is held constant and curb weight varies. The decile analyses show that fatality risk in MY 1991–1999 cars generally increased and rarely decreased for lighter relative to heavier cars *of the same footprint.* They suggest that the historical, cross-sectional trend was generally in the lighter ↔ more fatalities direction and not in the opposite direction, as might be suggested by the regression coefficients from the method that resembles DRI's approach.

The regression coefficients from NHTSA's one-step method suggest that mass and footprint each accounted for about half the fatality increase associated with downsizing in a cross-sectional analysis of 1991–1999 cars. They estimate the historical difference in *societal* fatality rates (*i.e.,* including fatalities to occupants of all the vehicles involved in the collisions, plus any pedestrians) of cars of different curb weights but the same footprint. They may be considered an "upper-estimate scenario" of the effect of future mass reduction—if it were accomplished in a manner that resembled the historical cross-sectional trend—*i.e.,* without any particular regard for safety (other than not to reduce footprint).

However, NHTSA believes that future vehicle design is likely to take advantage of safety-conscious technologies such as materials substitution that can reduce mass without perceptibly changing a car's shape or ride and maintain its structural strength. This could avoid much of the risk associated with lighter and smaller vehicles in the historical analyses, especially the historical trend toward higher crash-involvement rates for lighter and smaller vehicles.[142] It could thereby shrink the added risk close to just the effects of mass *per se* (the ability to transfer momentum to other vehicles or objects in a collision). Subsection 2.5 of the 2010 Kahane report attempts to quantify a "lower-estimate scenario" for the potential effect of mass reduction achieved by safety-conscious technologies; the estimated effects are substantially smaller than in the upper-

[140] As evidenced by VIF scores in the 5–7 range, exceeding the 2.5 level where near multicollinearity begins to become a concern in logistic regression analyses.

[141] Subsection 2.3 of the 2010 Kahane report attempts to explain why the two-step method, when applied to NHTSA's 2003 database, produces results a lot like DRI's, but it does not claim that DRI obtained its results from its own database for exactly those reasons. NHTSA did not analyze DRI's database. The two-step method is "theoretically unbiased" in the sense that it seeks to estimate the same parameters as the one-step analysis.

[142] This is discussed in greater depth in Subsections 2.1 and 2.5 of the 2010 Kahane report. The historic trend toward higher crash-involvement rates for lighter and smaller vehicles is documented in IIHS Advisory No. 5, July 1988, *http://www.iihs.org/research/advisories/iihs_advisory_5.pdf*; IIHS News Release, February 24, 1998, *http://www.iihs.org/news/1998/iihs_news_022498.pdf*; Auto Insurance Loss Facts, September 2009, *http://www.iihs.org/research/hldi/fact_sheets/CollisionLoss_0909.pdf.*

estimate scenario based directly on the regression results.

We note, again, that the preceding paragraph is conditional. Nothing in the CAFE standard requires manufacturers to use material substitution or, more generally, take a safety-conscious approach to mass reduction.[143] Federal Motor Vehicle Safety Standards include performance tests that verify historical improvements in structural strength and crashworthiness, but few FMVSS provide test information that sheds light about how a vehicle rides or otherwise helps explain the trend toward higher crash-involvement rates for lighter and smaller vehicles. It is possible that using material substitution and other current mass reduction methods could avoid the historical trend in this area, but that remains to be studied as manufacturers introduce more of these vehicles into the on-road fleet in coming years. A detailed discussion of methods currently used for reducing the mass of passenger cars and light trucks is included in Chapter 3 of the Technical Support Document.

LTVs: The principal difference between LTVs and passenger cars is that mass reduction in the heavier LTVs is estimated to have significant societal benefits, in that it reduces the fatality risk for the occupants of cars and light LTVs that collide with the heavier LTVs. By contrast, footprint (size) reduction in LTVs has a harmful effect (for the LTVs' own occupants), as in cars. The regression method of the 2003 Kahane report applied to the database of that report estimates a societal increase of 231 fatalities when curb weight is reduced by 100 pounds *and* footprint is reduced by 0.975 square feet (the historic average footprint reduction per 100-pound mass reduction in LTVs). But the regressions attribute an overall *reduction* of 266 fatalities to the 100-pound mass reduction and an increase of 497 fatalities to the .975-square-foot footprint reduction. The regression results constitute one of the scenarios for the possible societal effects of future mass reduction in LTVs.

However, NHTSA cautions that some of the regression coefficients, even by NHTSA's preferred method, might not accurately model the historical trend in the data, possibly due to near multicollinearity of curb weight and footprint or because of the interaction of both of these variables with LTV type.[144] Based on supplementary analyses and discussion in Subsections 3.3 and 3.4, the new report defines an additional upper-estimate scenario that NHTSA believes may more accurately reflect the historical trend in the data and a lower-estimate scenario that may come closer to the effects of mass *per se.* All three scenarios, however, attribute a societal fatality reduction to mass reduction in the heavier LTVs.

Overall effects of mass reduction while maintaining footprint in cars and LTVs: The immediate purpose of the new report's analyses of relationships between fatality risk, mass, and footprint is to develop the four parameters that the Volpe model needs in order to predict the safety effects, if any, of the modeled mass reductions in MYs 2012–2016 cars and LTVs over the lifetime of those vehicles. The four numbers are the overall percentage increases or decreases, per 100-pound mass reduction while holding footprint constant, in crash fatalities involving: (1) Cars < 2,950 pounds (which was the median curb weight of cars in MY 1991–1999), (2) cars ≥ 2,950 pounds, (3) LTVs < 3,870 pounds (which was the median curb weight of LTVs in those model years), and (4) LTVs ≥ 3,870 pounds. Here are the percentage effects for each of the three alternative scenarios, again, the "upper-estimate scenario" and the "lower-estimate scenario" have been developed based on NHTSA's expert opinion as a vehicle safety agency:

FATALITY INCREASE PER 100-POUND REDUCTION (%) [145]

	Actual regression result scenario	NHTSA expert opinion upper-estimate scenario [146]	NHTSA expert opinion lower-estimate scenario
Cars < 2,950 pounds	2.21	2.21	1.02
Cars ≥ 2,950 pounds	0.90	0.90	0.44
LTVs < 3,870 pounds	0.17	0.55	0.41
LTVs ≥ 3,870 pounds	−1.90	−0.62	−0.73

In all three scenarios, the estimated effects of a 100-pound mass reduction while maintaining footprint are an increase in fatalities in cars < 2,950 pounds, substantially smaller increases in cars ≥ 2,950 pounds and LTVs < 3,870 pounds, and a societal benefit for LTVs ≥ 3,870 pounds (because it reduces fatality risk to occupants of cars and lighter LTVs they collide with). These are the estimated effects of reducing each vehicle by exactly 100pounds. However, the actual mass reduction will vary by make, model, and year. The aggregate effect on fatalities can only be estimated by attempting to forecast, as NHTSA has using inputs to the Volpe model, the mass reductions by make and model. It should be noted, however, that a 100-pound reduction would be 5 percent of the mass of a 2000-pound car but only 2 percent of a 5000-pound LTV. Thus, a forecast that mass will decrease by an equal or greater percentage in the heavier vehicles than in the lightest cars would be proportionately more influenced by the benefit for mass reduction in the heavy LTVs than by the fatality increases in the other groups; it is likely to result in an estimated net benefit under one or more of the scenarios. It should also be noted, again, that the

[143] Footprint-based standards do not specify how or where to remove mass while maintaining footprint, nor do they categorically forbid footprint reductions, even if they discourage them.

[144] For example, mid-size SUVs of the 1990s typically had high mass relative to their short wheelbase and footprint (and exceptionally high rates of fatal rollovers); minivans typically have low mass relative to their footprint (and low fatality rates); heavy-duty pickup trucks used extensively for work tend to have more mass, for the same footprint, as basic full-sized pickup trucks that are more often used for personal transportation.

[145] Reducing mass by 100 pounds in these vehicles is estimated to have the listed percentage effect on fatalities in crashes involving these vehicles. For example, if these vehicles are involved in crashes that result in 10,000 fatalities, 2.21 means that if mass is reduced by 100 pounds, fatalities will increase to 10,221 and −0.73 means fatalities will decrease to 9,927. In the scenario based on actual regression results, the 1.96-sigma sampling errors in the above estimates are ±0.91 percentage points for cars < 2,950 pounds and also for cars ≥ 2,950 pounds, ±0.82 percentage points for LTVs < 3,870 pounds, and ±1.18 percentage points for LTVs ≥ 3,870 pounds. In other words, the fatality increase in the cars < 2,950 pounds and the societal fatality reduction attributed to mass reduction in the LTVs ≥ 3,870 pounds are statistically significant. The sampling errors associated with the scenario based on actual regression results perhaps also indicate the general level of statistical noise in the other two scenarios.

[146] For passenger cars, the upper-estimate scenario *is* the actual-regression-result scenario.

three scenarios are point estimates and are subject to uncertainties, such as the sampling errors associated with the regression results. In the scenario based on actual regression results, the 1.96-sigma sampling errors in the above estimates are ± 0.91 percentage points for cars < 2,950 pounds and also for cars ≥ 2,950 pounds, ± 0.82 percentage points for LTVs < 3,870 pounds, and ± 1.18 percentage points for LTVs ≥ 3,870 pounds. In other words, the fatality increase in the cars < 2,950 pounds and the societal fatality reduction attributed to mass reduction in the LTVs ≥ 3,870 pounds are statistically significant. The sampling errors associated with the scenario based on actual regression results perhaps also indicate the general level of statistical noise in the other two scenarios.

4. What are the estimated safety effects of this Final Rule?

The table below shows the estimated safety effects of the modeled reduction in vehicle mass provided in the NPRM and in this final rule in order to meet the MYs 2012–2016 standards, based on the analysis described briefly above and in much more detail in Chapter IX of the FRIA. These are combined results for passenger cars and light trucks. A positive number is an estimated increase in fatalities and a negative number (shown in parentheses) is an estimated reduction in fatalities over the lifetime of the model year vehicles compared to the MY 2011 baseline fleet.

	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
NPRM "Worst Case"	34	54	194	313	493
NHTSA Expert Opinion Final Rule Upper Estimate	9	14	26	24	22
NHTSA Expert Opinion Final Rule Lower Estimate	2	4	(17)	(53)	(80)
Actual Regression Result Scenario	0	2	(94)	(206)	(301)

NHTSA emphasizes that the table above is based on the NHTSA's assumptions about how manufacturers might choose to reduce the mass of their vehicles in response to the final rule, which are very similar to EPA's assumptions. In general, as discussed above, the agencies assume that mass will be reduced by as much as 10 percent in the heaviest LTVs but only by as much as 5 percent in other vehicles and that substantial mass reductions will take place only in the year that models are redesigned. The actual mass reduction that is likely to occur in response to the standards will of course vary by make and model, depending on each manufacturer's particular approach, with likely more opportunity for the largest LTVs that still use separate frame construction.

The "upper estimate" presented above, as discussed in the FRIA, assumes only that manufacturers will reduce vehicle mass without reducing footprint. Thus, under such a scenario, safety effects could be somewhat adverse if, for example, manufacturers chose to reduce crush space associated with vehicle overhang as a way of reducing mass without changing footprint. The "lower estimate," in turn, is based on the assumption that manufacturers will reduce vehicle mass solely through methods like material substitution, which (under these assumptions) fully maintain not only footprint but also all structural integrity, and other aspects of vehicle safety. Under these scenarios, safety effects could be worse if mass reduction was not undertaken thoughtfully to maintain existing safety levels, but could also be better if it was undertaken with a thorough and extensive vehicle redesign to maximize both mass reduction and safety.

And finally, while NHTSA does not believe that the "worst-case" scenario presented in the NPRM is likely to occur during the MYs 2012–2016 timeframe, we cannot guarantee that manufacturers will never choose to reduce vehicle footprint, particularly if market forces lead to increased sales of small vehicles in response to sharp increases in the price of petroleum, though this situation would not be in direct response to the CAFE/GHG standards. Thus, we cannot completely reject the worst-case scenario for all vehicles, although we can and do recognize that the footprint-based standards will significantly limit the likelihood of its occurrence within the context of this rulemaking.

In summary, the agencies recognize the balancing inherent in achieving higher levels of fuel economy and lower levels of CO_2 emissions through reduction of vehicle mass. Based on the 2010 Kahane analysis that attempts to separate the effects of mass reductions and footprint reductions, and to account better for the possibility that mass reduction will be accomplished entirely through methods that preserves structural strength and vehicle safety, the agencies now believe that the likely deleterious safety effects of the MYs 2012–2016 standards may be much lower than originally estimated. They may be close to zero, or possibly beneficial if mass reduction is carefully undertaken in the future and if the mass reduction in the heavier LTVs is greater (in absolute terms) than in passenger cars. In light of these findings, we believe that the balancing is reasonable.

5. How do the agencies plan to address this issue going forward?

NHTSA and EPA believe that it is important for the agencies to conduct further study and research into the interaction of mass, size and safety to assist future rulemakings. The agencies intend to begin working collaboratively and to explore with DOE, CARB, and perhaps other stakeholders an interagency/intergovernmental working group to evaluate all aspects of mass, size and safety. It would also be the goal of this team to coordinate government supported studies and independent research, to the extent possible, to help ensure the work is complementary to previous and ongoing research and to guide further research in this area. DOE's EERE office has long funded extensive research into component advanced vehicle materials and vehicle mass reduction. Other agencies may have additional expertise that will be helpful in establishing a coordinated work plan. The agencies are interested in looking at the weight-safety relationship in a more holistic (complete vehicle) way, and thanks to this CAFE rulemaking NHTSA has begun to bring together parts of the agency—crashworthiness, and crash avoidance rulemaking offices and the agency's Research & Development office—in an interdisciplinary way to better leverage the expertise of the agency. Extending this effort to other agencies will help to ensure that all aspects of the weight-safety relationship are considered completely and carefully with our future research. The agencies also intend to carefully consider comments received in response to the NPRM in developing plans for future studies and research and to solicit input from stakeholders.

The agencies also plan to watch for safety effects as the U.S. light-duty vehicle fleet evolves in response both to the CAFE/GHG standards and to consumer preferences over the next several years. Additionally, as new and

advanced materials and component smart designs are developed and commercialized, and as manufacturers implement them in more vehicles, it will be useful for the agencies to learn more about them and to try to track these vehicles in the fleet to understand the relationship between vehicle design and injury/fatality data. Specifically, the agencies intend to follow up with study and research of the following:

First, NHTSA is in the process of contracting with an independent institution to review the statistical methods that NHTSA and DRI have used to analyze historical data related to mass, size and safety, and to provide recommendation on whether the existing methods or other methods should be used for future statistical analysis of historical data. This study will include a consideration of potential near multicollinearity in the historical data and how best to address it in a regression analysis. This study is being initiated because, in response to the NPRM, NHTSA received a number of comments related to the methodology NHTSA used for the NPRM to determine the relationship between mass and safety, as discussed in detail above.

Second, NHTSA and EPA, in consultation with DOE, intend to begin updating the MYs 1991–1999 database on which the safety analyses in the NPRM and final rule are based with newer vehicle data in the next several months. This task will take at least a year to complete. This study is being initiated in response to the NPRM comments related to the use of data from MYs 1991–1999 in the NHTSA analysis, as discussed in detail above.

Third, in order to assess if the design of recent model year vehicles that incorporate various mass reduction methods affect the relationships among vehicle mass, size and safety, NHTSA and EPA intend to conduct collaborative statistical analysis, beginning in the next several months. The agencies intend to work with DOE to identify vehicles that are using material substitution and smart design. After these vehicles are identified, the agencies intend to assess if there are sufficient data for statistical analysis. If there are sufficient data, statistical analysis would be conducted to compare the relationship among mass, size and safety of these smart design vehicles to vehicles of similar size and mass with more traditional designs. This study is being initiated because, in response to the NPRM, NHTSA received comments related to the use of data from MYs 1991–1999 in the NHTSA analysis that did not include new designs that might change the relationship among mass, size and safety, as discussed in detail above.

NHTSA may initiate a two-year study of the safety of the fleet through an analysis of the trends in structural stiffness and whether any trends identified impact occupant injury response in crashes. Vehicle manufacturers may employ stiffer light weight materials to limit occupant compartment intrusion while controlling for mass that may expose the occupants to higher accelerations resulting in a greater chance of injury in real-world crashes. This study would provide information that would increase the understanding of the effects on safety of newer vehicle designs.

In addition, NHTSA and EPA, possibly in collaboration with DOE, may conduct a longer-term computer modeling-based design and analysis study to help determine the maximum potential for mass reduction in the MYs 2017–2021 timeframe, through direct material substitution and smart design while meeting safety regulations and guidelines, and maintaining vehicle size and functionality. This study may build upon prior research completed on vehicle mass reduction. This study would further explore the comprehensive vehicle effects, including dissimilar material joining technologies, manufacturer feasibility of both supplier and OEM, tooling costs, and crash simulation and perhaps eventual crash testing.

III. EPA Greenhouse Gas Vehicle Standards

A. Executive Overview of EPA Rule

1. Introduction

The Environmental Protection Agency (EPA) is establishing GHG emissions standards for the largest sources of transportation GHGs—light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles (hereafter light vehicles). These vehicle categories, which include cars, sport utility vehicles, minivans, and pickup trucks used for personal transportation, are responsible for almost 60% of all U.S. transportation related emissions of the six gases discussed above (Section I.A). This action represents the first-ever EPA rule to regulate vehicle GHG emissions under the Clean Air Act (CAA) and will establish standards for model years 2012–2016 and later light vehicles sold in the United States.

EPA is adopting three separate standards. The first and most important is a set of fleet-wide average carbon dioxide (CO_2) emission standards for cars and trucks. These standards are CO_2 emissions-footprint curves, where each vehicle has a different CO_2 emissions compliance target depending on its footprint value. Vehicle CO_2 emissions will be measured over the EPA city and highway tests. The rule allows for credits based on demonstrated improvements in vehicle air conditioner systems, including both efficiency and refrigerant leakage improvement, which are not captured by the EPA tests. The EPA projects that the average light vehicle tailpipe CO_2 level in model year 2011 will be 325 grams per mile while the average vehicle fleetwide average CO_2 emissions compliance level for the model year 2016 standard will be 250 grams per mile, an average reduction of 23 percent from today's CO_2 levels.

EPA is also finalizing standards that will cap tailpipe nitrous oxide (N_2O) and methane (CH_4) emissions at 0.010 and 0.030 grams per mile, respectively. Even after adjusting for the higher relative global warming potencies of these two compounds, nitrous oxide and methane emissions represent less than one percent of overall vehicle greenhouse gas emissions from new vehicles. Accordingly, the goal of these two standards is to limit any potential increases of tailpipe emissions of these compounds in the future but not to force reductions relative to today's low levels.

This final rule responds to the Supreme Court's 2007 decision in *Massachusetts* v. *EPA* [147] which found that greenhouse gases fit within the definition of air pollutant in the Clean Air Act. The Court held that the Administrator must determine whether or not emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. The Court further ruled that, in making these decisions, the EPA Administrator is required to follow the language of section 202(a) of the CAA. The case was remanded back to the Agency for reconsideration in light of the court's decision.

The Administrator has responded to the remand by issuing two findings under section 202(a) of the Clean Air

[147] 549 U.S.C. 497 (2007). For further information on *Massachusetts* v. *EPA* see the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) the Clean Air Act, published in the Federal Register on December 15, 2009 (74 FR 66496). There is a comprehensive discussion of the litigation's history, the Supreme Court's findings, and subsequent actions undertaken by the Bush Administration and the EPA from 2007–2008 in response to the Supreme Court remand. This information is also available at: *http://www.epa.gov/climatechange/endangerment.html.*

Act.[148] First, the Administrator found that the science supports a positive endangerment finding that the mix of six greenhouse gases (carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)) in the atmosphere endangers the public health and welfare of current and future generations. This is referred to as the endangerment finding. Second, the Administrator found that the combined emissions of the same six gases from new motor vehicles and new motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change. This is referred to as the cause and contribute finding. Motor vehicles and new motor vehicle engines emit carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. EPA provides more details below on the legal and scientific bases for this final rule.

As discussed in Section I, this GHG rule is part of a joint National Program such that a large majority of the projected benefits are achieved jointly with NHTSA's CAFE rule which is described in detail in Section IV of this preamble. EPA projects total CO_2 equivalent emissions savings of approximately 960 million metric tons as a result of the rule, and oil savings of 1.8 billion barrels over the lifetimes of the MY 2012–2016 vehicles subject to the rule. EPA projects that over the lifetimes of the MY 2012–2016 vehicles, the rule will cost $52 billion but will result in benefits of $240 billion at a 3 percent discount rate, or $192 billion at a 7 percent discount rate (both values assume the average SCC value at 3%, *i.e.,* the $21/ton SCC value in 2010). Accordingly, these light vehicle greenhouse gas emissions standards represent an important contribution under the Clean Air Act toward meeting long-term greenhouse gas emissions and import oil reduction goals, while providing important economic benefits as well. The results of our analysis of 2012–2016 MY vehicles, which we refer to as our "model year analysis," are summarized in Tables III.H.10–4 to III.H.10–7.

We have also looked beyond the lifetimes of 2012–2016 MY vehicles at annual costs and benefits of the program for the 2012 through 2050 timeframe. We refer to this as our "calendar year" analysis (as opposed to the costs and benefits mentioned above which we refer to as our "model year analysis"). In our calendar year analysis, the new 2016 MY standards are assumed to apply to all vehicles sold in model years 2017 and later. The net present values of annual costs for the 2012 through 2050 timeframe are $346 billion for new vehicle technology which will provide $1.5 billion in fuel savings, both values at a 3 percent discount rate. At a 7 percent discount rate over the same period, the technology costs are estimated at $192 billion which will provide $673 billion in fuel savings. The social benefits during the 2012 through 2050 timeframe are estimated at $454 billion and $305 billion at a 3 and 7 percent discount rate, respectively. Both of these benefit estimates assume the average SCC value at 3% (*i.e.,* the $21/ton SCC value in 2010). The net benefits during this time period are then $1.7 billion and $785 million at a 3 and 7 percent discount rate, respectively. The results of our "calendar year" analysis are summarized in Tables III.H 10–1 to III.H.10–3.

2. Why is EPA establishing this Rule?

This rule addresses only light vehicles. EPA is addressing light vehicles as a first step in control of greenhouse gas emissions under the Clean Air Act for four reasons. First, light vehicles are responsible for almost 60% of all mobile source GHG emissions, a share three times larger than any other mobile source subsector, and represent about one-sixth of all U.S. greenhouse gas emissions. Second, technology exists that can be readily and cost-effectively applied to these vehicles to reduce their greenhouse gas emissions in the near term. Third, EPA already has an existing testing and compliance program for these vehicles, refined since the mid-1970s for emissions compliance and fuel economy determinations, which would require only minor modifications to accommodate greenhouse gas emissions regulations. Finally, this rule is an important step in responding to the Supreme Court's ruling in *Massachusetts* v. *EPA,* which applies to other emissions sources in addition to light-duty vehicles. In fact, EPA is currently evaluating controls for motor vehicles other than those covered by this rule, and is also reviewing seven motor vehicle related petitions submitted by various states and organizations requesting that EPA use its Clean Air Act authorities to take action to reduce greenhouse gas emissions from aircraft (under § 231(a)(2)), ocean-going vessels (under § 213(a)(4)), and other nonroad engines and vehicle sources (also under § 213(a)(4)).

a. Light Vehicle Emissions Contribute to Greenhouse Gases and the Threat of Climate Change

Greenhouse gases are gases in the atmosphere that effectively trap some of the Earth's heat that would otherwise escape to space. Greenhouse gases are both naturally occurring and anthropogenic. The primary greenhouse gases of concern that are directly emitted by human activities include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

These gases, once emitted, remain in the atmosphere for decades to centuries. Thus, they become well mixed globally in the atmosphere and their concentrations accumulate when emissions exceed the rate at which natural processes remove greenhouse gases from the atmosphere. The heating effect caused by the human-induced buildup of greenhouse gases in the atmosphere is very likely the cause of most of the observed global warming over the last 50 years.[149] The key effects of climate change observed to date and projected to occur in the future include, but are not limited to, more frequent and intense heat waves, more severe wildfires, degraded air quality, heavier and more frequent downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, continued ocean acidification, harm to agriculture, and harm to wildlife and ecosystems. A detailed explanation of observed and projected changes in greenhouse gases and climate change and its impact on health, society, and the environment is included in EPA's technical support document for the recently promulgated Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act.[150]

Mobile sources represent a large and growing share of United States greenhouse gases and include light-duty vehicles, light-duty trucks, medium-duty passenger vehicles, heavy duty trucks, airplanes, railroads, marine vessels and a variety of other sources. In 2007, all mobile sources emitted 31% of

[148] *See* 74 FR 66496 (Dec. 15, 2009), "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act".

[149] "Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act" Docket: EPA–HQ–OAR–2009–0472–11292.

[150] 74 FR 66496 (Dec. 15, 2009). Both the **Federal Register** Notice and the Technical Support Document for Endangerment and Cause or Contribute Findings are found in the public docket No. EPA–OAR–2009–0171, in the public docket established for this rulemaking, and at *http://epa.gov/climatechange/endangerment.html.*

all U.S. GHGs, and were the fastest-growing source of U.S. GHGs in the U.S. since 1990. Transportation sources, which do not include certain off-highway sources such as farm and construction equipment, account for 28% of U.S. GHG emissions, and Section 202(a) sources, which include light-duty vehicles, light-duty trucks, medium-duty passenger vehicles, heavy-duty trucks, buses, and motorcycles account for 23% of total U.S. GHGs.[151]

Light vehicles emit carbon dioxide, methane, nitrous oxide and hydrofluorocarbons. Carbon dioxide (CO_2) is the end product of fossil fuel combustion. During combustion, the carbon stored in the fuels is oxidized and emitted as CO_2 and smaller amounts of other carbon compounds.[152] Methane (CH_4) emissions are a function of the methane content of the motor fuel, the amount of hydrocarbons passing uncombusted through the engine, and any post-combustion control of hydrocarbon emissions (such as catalytic converters).[153] Nitrous oxide (N_2O) (and nitrogen oxide (NO_X)) emissions from vehicles and their engines are closely related to air-fuel ratios, combustion temperatures, and the use of pollution control equipment. For example, some types of catalytic converters installed to reduce motor vehicle NO_X, carbon monoxide (CO) and hydrocarbon emissions can promote the formation of N_2O.[154] Hydrofluorocarbons (HFC) emissions are progressively replacing chlorofluorocarbons (CFC) and hydrochlorofluorocarbons (HCFC) in these vehicles' cooling and refrigeration systems as CFCs and HCFCs are being phased out under the Montreal Protocol and Title VI of the CAA. There are multiple emissions pathways for HFCs with emissions occurring during charging of cooling and refrigeration systems, during operations, and during decommissioning and disposal.[155]

b. Basis for Action Under the Clean Air Act

Section 202(a)(1) of the Clean Air Act (CAA) states that "the Administrator shall by regulation prescribe (and from time to time revise) * * * standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles * * *, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." As noted above, the Administrator has found that the elevated concentrations of greenhouse gases in the atmosphere may reasonably be anticipated to endanger public health and welfare.[156] The Administrator defined the "air pollution" referred to in CAA section 202(a) to be the combined mix of six long-lived and directly emitted GHGs: Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The Administrator has further found under CAA section 202(a) that emissions of the single air pollutant defined as the aggregate group of these same six greenhouse gases from new motor vehicles and new motor vehicle engines contribute to air pollution. As a result of these findings, section 202(a) requires EPA to issue standards applicable to emissions of that air pollutant. New motor vehicles and engines emit CO_2, methane, N_2O and HFC. This preamble describes the provisions that control emissions of CO_2, HFCs, nitrous oxide, and methane. For further discussion of EPA's authority under section 202(a), see Section I.C.2 of the preamble to the proposed rule (74 FR at 49464–66).

There are a variety of other CAA Title II provisions that are relevant to standards established under section 202(a). The standards are applicable to motor vehicles for their useful life. EPA has the discretion in determining what standard applies over the vehicles' useful life and has exercised that discretion in this rule. See Section II*I.E.*4 below.

The standards established under CAA section 202(a) are implemented and enforced through various mechanisms. Manufacturers are required to obtain an EPA certificate of conformity before they may sell or introduce their new motor vehicle into commerce, according to CAA section 206(a). The introduction into commerce of vehicles without a certificate of conformity is a prohibited act under CAA section 203 that may subject a manufacturer to civil penalties and injunctive actions (see CAA sections 204 and 205). Under CAA section 206(b), EPA may conduct testing of new production vehicles to determine compliance with the standards. For in-use vehicles, if EPA determines that a substantial number of vehicles do not conform to the applicable regulations then the manufacturer must submit and implement a remedial plan to address the problem (see CAA section 207(c)). There are also emissions-based warranties that the manufacturer must implement under CAA section 207(a). Section III.E describes the rule's certification, compliance, and enforcement mechanisms.

c. EPA's Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act

On December 7, 2009 EPA's Administrator signed an action with two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act. On December 15, 2009, the final findings were published in the Federal Register. This action is called the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act (Endangerment Finding).[157] Below are the two distinct findings:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Specifically, the Administrator found, after a thorough examination of the scientific evidence on the causes and impact of current and future climate change, and careful review of public comments, that the science compellingly supports a positive finding that atmospheric concentrations of these greenhouse gases result in air pollution which may reasonably be anticipated to endanger both public health and welfare. In her finding, the Administrator relied heavily upon the major findings and conclusions from the

[151] Inventory of U.S. Greenhouse Gases and Sinks: 1990–2007.

[152] Mobile source carbon dioxide emissions in 2006 equaled 26 percent of total U.S. CO_2 emissions.

[153] In 2006, methane emissions equaled 0.32 percent of total U.S. methane emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion.

[154] In 2006, nitrous oxide emissions for these sources accounted for 8 percent of total U.S. nitrous oxide emissions.

[155] In 2006, HFC from these source categories equaled 56 percent of total U.S. HFC emissions, making it the single largest source category of U.S. HFC emissions.

[156] 74 FR 66496 (Dec. 15, 2009).

[157] 74 FR 66496 (Dec. 15, 2009)

recent assessments of the U.S. Climate Change Science Program and the U.N. Intergovernmental Panel on Climate Change.[158] The Administrator made a positive endangerment finding after considering both observed and projected future effects of climate change, key uncertainties, and the full range of risks and impacts to public health and welfare occurring within the United States. In addition, the finding focused on impacts within the U.S. but noted that the evidence concerning risks and impacts occurring outside the U.S. provided further support for the finding.

The key scientific findings supporting the endangerment finding are that:

— Concentrations of greenhouse gases are at unprecedented levels compared to recent and distant past. These high concentrations are the unambiguous result of anthropogenic emissions and are very likely the cause of the observed increase in average temperatures and other climatic changes.

— The effects of climate change observed to date and projected to occur in the future include more frequent and intense heat waves, more severe wildfires, degraded air quality, heavier downpours and flooding, increasing drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems. These impacts are effects on public health and welfare within the meaning of the Clean Air Act.

The Administrator found that emissions of the single air pollutant defined as the aggregate group of these same six greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the air pollution and hence to the threat of climate change. Key facts supporting this cause and contribute finding for on-highway vehicles regulated under section 202(a) of the Clean Air Act are that these sources are responsible for 24% of total U.S. greenhouse gas emissions, and more than 4% of total global greenhouse gas emissions.[159] As noted above, these findings require EPA to issue standards under section 202(a) "applicable to emission" of the air pollutant that EPA found causes or contributes to the air pollution that endangers public health and welfare. The final emissions standards satisfy this requirement for greenhouse gases from light-duty vehicles. Under section 202(a) the Administrator has significant discretion in how to structure the standards that apply to the emission of the air pollutant at issue here, the aggregate group of six greenhouse gases. EPA has the discretion under section 202(a) to adopt separate standards for each gas, a single composite standard covering various gases, or any combination of these. In this rulemaking EPA is finalizing separate standards for nitrous oxide and methane, and a CO_2 standard that provides for credits based on reductions of HFCs, as the appropriate way to issue standards applicable to emission of the single air pollutant, the aggregate group of six greenhouse gases. EPA is not setting any standards for perfluorocarbons (PFCs) or sulfur hexafluoride (SF_6) as they are not emitted by motor vehicles.

3. What is EPA adopting?

a. Light-Duty Vehicle, Light-Duty Truck, and Medium-Duty Passenger Vehicle Greenhouse Gas Emission Standards and Projected Compliance Levels

The following section provides an overview of EPA's final rule. The key public comments are not discussed here, but are discussed in the sections that follow which provide the details of the program. Comments are also discussed in the Response to Comments document.

The CO_2 emissions standards are by far the most important of the three standards and are the primary focus of this summary. As proposed, EPA is adopting an attribute-based approach for the CO_2 fleet-wide standard (one for cars and one for trucks), using vehicle footprint as the attribute. These curves establish different CO_2 emissions targets for each unique car and truck footprint. Generally, the larger the vehicle footprint, the higher the corresponding vehicle CO_2 emissions target. Table III.A.3–1 shows the greenhouse gas standards for light vehicles that EPA is finalizing for model years (MY) 2012 and later:

TABLE III.A.3–1—INDUSTRY-WIDE GREENHOUSE GAS EMISSIONS STANDARDS

Standard/covered compounds	Form of standard	Level of standard	Credits	Test cycles
CO_2 Standard:[160] Tailpipe CO_2.	Fleetwide average footprint CO_2-curves for cars and trucks.	Projected Fleetwide CO_2 level of 250 g/mi (See footprint curves in Sec. III.B.2).	CO_2-e credits[161]	EPA 2-cycle (FTP and HFET test cycles).[162]
N_2O Standard: Tailpipe N_2O.	Cap per vehicle	0.010 g/mi	None *	EPA FTP test.
CH_4 Standard: Tailpipe CH_4.	Cap per vehicle	0.030 g/mi	None *	EPA FTP test.

* For N_2O and CH_4, manufacturers may optionally demonstrate compliance with a CO_2-equivalent standard equal to its footprint-based CO_2 target level, using the FTP and HFET tests.

One important flexibility associated with the CO_2 standard is the option for

[158] The U.S. Climate Change Science Program (CCSP) is now called the U.S. Global Change Research Program (GCRP).

[159] This figure includes the greenhouse gas contributions of light vehicles, heavy duty vehicles, and remaining on-highway mobile sources. Light-duty vehicles are responsible for over 70 percent of Section 202(a) mobile source GHGs, or about 17% of total U.S. greenhouse gas emissions. U.S. EPA.2009 Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Washington, DC. pp. 180–194. Available at *http://epa.gov/climatechange/endangerment/downloads/Endangerment%20TSD.pdf.*

[160] While over 99 percent of the carbon in automotive fuels is converted to CO_2 in a properly functioning engine, compliance with the CO_2 standard will also account for the very small levels of carbon associated with vehicle tailpipe hydrocarbon (HC) and carbon monoxide (CO) emissions, converted to CO_2 on a mass basis, as discussed further in Section III.B.

[161] CO_2-e refers to CO_2-equivalent, and is a metric that allows non-CO_2 greenhouse gases (such as hydrofluorocarbons used as automotive air conditioning refrigerants) to be expressed as an equivalent mass (*i.e.,* corrected for relative global warming potency) of CO_2 emissions.

[162] FTP is the Federal Test Procedure which uses what is commonly referred to as the "city" driving schedule, and HFET is the Highway Fuel Economy Test which uses the "highway" driving schedule. Compliance with the CO_2 standard will be based on the same 2-cycle values that are currently used for

Continued

manufacturers to obtain credits associated with improvements in their air conditioning systems. EPA is adopting the air conditioning provisions with minor modifications. As will be discussed in greater detail in later sections, EPA is establishing test procedures and design criteria by which manufacturers can demonstrate improvements in both air conditioner efficiency (which reduces vehicle tailpipe CO_2 by reducing the load on the engine) and air conditioner refrigerants (using lower global warming potency refrigerants and/or improving system design to reduce GHG emissions associated with leaks). Neither of these strategies to reduce GHG emissions from air conditioners will be reflected in the EPA FTP or HFET tests. These improvements will be translated to a g/mi CO_2-equivalent credit that can be subtracted from the manufacturer's tailpipe CO_2 compliance value. EPA expects a high percentage of manufacturers to use this flexibility to earn air conditioning-related credits for MY 2012–2016 vehicles such that the average credit earned is about 11 grams per mile CO_2-equivalent in 2016.

A second flexibility, being finalized essentially as proposed, is CO_2 credits for flexible and dual fuel vehicles, similar to the CAFE credits for such vehicles which allow manufacturers to gain up to 1.2 mpg in their overall CAFE ratings. The Energy Independence and Security Act of 2007 (EISA) mandated a phase-out of these flexible fuel vehicle CAFE credits beginning in 2015, and ending after 2019. EPA is allowing comparable CO_2 credits for flexible fuel vehicles through MY 2015, but for MY 2016 and beyond, the GHG rule treats flexible and dual fuel vehicles on a CO_2-performance basis, calculating the overall CO_2 emissions for flexible and dual fuel vehicles based on a fuel use-weighted average of the CO_2 levels on gasoline and on the alternative fuel, and on a manufacturer's demonstration of actual usage of the alternative fuel in its vehicle fleet.

Table III.A.3–2 summarizes EPA projections of industry-wide 2-cycle CO_2 emissions and fuel economy levels that will be achieved by manufacturer compliance with the GHG standards for MY 2012–2016.

For MY 2011, Table III.A.3–2 uses the NHTSA projections of the average fuel economy level that will be achieved by the MY 2011 fleet of 30.8 mpg for cars and 23.3 mpg for trucks, converted to an equivalent combined car and truck CO_2 level of 326 grams per mile.[163] EPA believes this is a reasonable estimate with which to compare the MY 2012–2016 CO_2 emission standards. Identifying the proper MY 2011 estimate is complicated for many reasons, among them being the turmoil in the current automotive market for consumers and manufacturers, uncertain and volatile oil and gasoline prices, the ability of manufacturers to use flexible fuel vehicle credits to meet MY 2011 CAFE standards, and the fact that most manufacturers have been surpassing CAFE standards (particularly the car standard) in recent years. Taking all of these considerations into account, EPA believes that the MY 2011 projected CAFE achieved values, converted to CO_2 emissions levels, represent a reasonable estimate.

Table III.A.3–2 shows projected industry-wide average CO_2 emissions values. The Projected CO_2 Emissions for the Footprint-Based Standard column shows the CO_2 g/mi level corresponding with the footprint standard that must be met. It is based on the promulgated CO_2-footprint curves and projected footprint values, and will decrease each year to 250 grams per mile (g/mi) in MY 2016. For MY 2012–2016, the emissions impact of the projected utilization of flexible fuel vehicle (FFV) credits and the temporary lead-time allowance alternative standard (TLAAS, discussed below) are shown in the next two columns. The Projected CO_2 Emissions column gives the CO_2 emissions levels projected to be achieved given use of the flexible fuel credits and temporary lead-time allowance program. This column shows that, relative to the MY 2011 estimate, EPA projects that MY 2016 CO_2 emissions will be reduced by 23 percent over five years. The Projected A/C Credit column represents the industry wide average air conditioner credit manufacturers are expected to earn on an equivalent CO_2 gram per mile basis in a given model year. In MY 2016, the projected A/C credit of 10.6 g/mi represents 14 percent of the 76 g/mi CO_2 emissions reductions associated with the final standards. The Projected 2-cycle CO_2 Emissions column shows the projected CO_2 emissions as measured over the EPA 2-cycle tests, which will allow compliance with the standard assuming projected utilization of the FFV, TLAAS, and A/C credits.

TABLE III.A.3–2—PROJECTED FLEETWIDE CO_2 EMISSIONS VALUES

[Grams per mile]

Model year	Projected CO_2 emissions for the footprint-based standard	Projected FFV credit	Projected TLAAS credit	Projected CO_2 emissions	Projected A/C credit	Projected 2-cycle CO_2 emissions
2011	.....	.....	.....	(326)	.....	(326)
2012	295	6.5	1.2	303	3.5	307
2013	286	5.8	0.9	293	5.0	298
2014	276	5.0	0.6	282	7.5	290
2015	263	3.7	0.3	267	10.0	277
2016	250	0.0	0.1	250	10.6	261

EPA is also finalizing a series of flexibilities for compliance with the CO_2 standard which are not expected to significantly affect the projected compliance and achieved values shown above, but which should reduce the costs of achieving those reductions. These flexibilities include the ability to earn: Annual credits for a manufacturer's over-compliance with its unique fleet-wide average standard, early credits from MY 2009–2011, credit for "off-cycle" CO_2 reductions from new and innovative technologies that are not reflected in CO_2/fuel economy tests, as

CAFE standards compliance; EPA projects that fleet-wide in-use or real world CO_2 emissions are approximately 25 percent higher, on average, than 2-cycle CO_2 values. Separate mechanisms apply for A/C credits.

[163] As discussed in Section IV of this preamble.

well as the carry-forward and carry-backward of credits, and the ability to transfer credits between a manufacturer's car and truck fleets. These flexibilities are being adopted with only very minor changes from the proposal, as discussed in Section III.C.

EPA is finalizing an incentive to encourage the commercialization of advanced GHG/fuel economy control technologies, including electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs), and fuel cell vehicles (FCVs), for model years 2012–2016. EPA's proposal included an emissions compliance value of zero grams/mile for EVs and FCVs, and the electric portion of PHEVs, and a multiplier in the range of 1.2 to 2.0, so that each advanced technology vehicle would count as greater than one vehicle in a manufacturer's fleet-wide compliance calculation. Several commenters were very concerned about these credits and upon considering the public comments on this issue, EPA is finalizing an advanced technology vehicle incentive program to assign a zero gram/mile emissions compliance value for EVs and FCVs, and the electric portion of PHEVs, for up to the first 200,000 EV/PHEV/FCV vehicles produced by a given manufacturer during MY 2012–2016. For any production greater than this amount, the compliance value for the vehicle will be greater than zero gram/mile, set at a level that reflects the vehicle's average net increase in upstream greenhouse gas emissions in comparison to the gasoline or diesel vehicle it replaces. EPA is not finalizing a multiplier based on the concerns potentially excessive credits using that incentive. EPA agrees that the multiplier, in combination with the zero grams/mile compliance value, would be excessive. EPA will also allow this early advanced technology incentive program beginning in MYs 2009 through 2011. Further discussion on the advanced technology vehicle incentives, including more detail on the public comments and EPA's response, is found in Section III.C.

EPA is also finalizing a temporary lead-time allowance (TLAAS) for manufacturers that sell vehicles in the U.S. in MY 2009 and for which U.S. vehicle sales in that model year are below 400,000 vehicles. This allowance will be available only during the MY 2012–2015 phase-in years of the program. A manufacturer that satisfies the threshold criteria will be able to treat a limited number of vehicles as a separate averaging fleet, which will be subject to a less stringent GHG standard.[164] Specifically, a standard of 125 percent of the vehicle's otherwise applicable foot-print target level will apply to up to 100,000 vehicles total, spread over the four-year period of MY 2012 through 2015. Thus, the number of vehicles to which the flexibility could apply is limited. EPA also is setting appropriate restrictions on credit use for these vehicles, as discussed further in Section III. By MY 2016, these allowance vehicles must be averaged into the manufacturer's full fleet (*i.e.,* they will no longer be eligible for a different standard). EPA discusses this in more detail in Section III.B of the preamble.

EPA received comments from several smaller manufacturers that the TLAAS program was insufficient to allow manufacturers with very limited product lines to comply. These manufacturers commented that they need additional lead-time to meet the standards, because their CO_2 baselines are significantly higher and their vehicle product lines are even more limited, reducing their ability to average across their fleets compared even to other TLAAS manufacturers. EPA fully summarizes the public comments on the TLAAS program, including comments not supporting the program, in Section III.B. In summary, in response to the lead time issues raised by manufacturers, EPA is modifying the TLAAS program that applies to manufacturers with between 5,000 and 50,000 U.S. vehicle sales in MY 2009. These manufactures would have an increased allotment of vehicles, a total of 250,000, compared to 100,000 vehicles for other TLAAS-eligible manufacturers. In addition, the TLAAS program for these manufacturers would be extended by one year, through MY 2016 for these vehicles, for a total of five years of eligibility. The other provisions of the TLAAS program would continue to apply, such as the restrictions on credit trading and the level of the standard. Additional restrictions would also apply to these vehicles, as discussed in Section III.B.5. In addition, for the smallest volume manufacturers, those with U.S. sales of below 5,000 vehicles, EPA is not setting standards at this time but is instead deferring standards until a future rulemaking. This is the same approach we are using for small businesses. The unique issues involved with these manufacturers will be addressed in that future rulemaking. Further discussion of the public comment on these issues and details on these changes from the proposed program are included in Section III.B.6. The agency received comments on its compliance with the Regulatory Flexibility Act. As stated in Section III.I.3, small entities are not significantly impacted by this rulemaking.

EPA is also adopting caps on the tailpipe emissions of nitrous oxide (N_2O) and methane (CH_4)—0.010 g/mi for N_2O and 0.030 g/mi for CH_4—over the EPA FTP test. While N_2O and CH_4 can be potent greenhouse gases on a relative mass basis, their emission levels from modern vehicle designs are extremely low and represent only about 1% of total late model light vehicle GHG emissions. These cap standards are designed to ensure that N_2O and CH_4 emissions levels do not rise in the future, rather than to force reductions in the already low emissions levels. Accordingly, these standards are not designed to require automakers to make any changes in current vehicle designs, and thus EPA is not projecting any environmental or economic costs or benefits associated with these standards.

EPA has attempted to build on existing practice wherever possible in designing a compliance program for the GHG standards. In particular, the program structure will streamline the compliance process for both manufacturers and EPA by enabling manufacturers to use a single data set to satisfy both the new GHG and CAFE testing and reporting requirements. Timing of certification, model-level testing, and other compliance activities also follow current practices established under the Tier 2 emissions and CAFE programs.

EPA received numerous comments on issues related to the impacts on stationary sources, due to the Clean Air Act's provisions for permitting requirements related to the issuance of the proposed GHG standards for new motor vehicles. Some comments suggested that EPA had underestimated the number of stationary sources that may be subject to GHG permitting requirements; other comments suggested that EPA did not adequately consider the permitting impact on small business sources. Other comments related to EPA's interpretation of the CAA's provisions for subjecting stationary sources to permit regulation after GHG standards are set. EPA's response to these comments is contained in the Response to Comments document; however, many of these comments pertain to issues that EPA is addressing in its consideration of the final Greenhouse Gas Permit Tailoring

[164] EPCA does not permit such an allowance. Consequently, manufacturers who may be able to take advantage of a lead-time allowance under the GHG standards would be required to comply with the applicable CAFE standard or be subject to penalties for non-compliance.

Rule, Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule; Proposed Rule, 74 FR 55292 (October 27, 2009) and will thus be fully addressed in that rulemaking.

Some of the comments relating to the stationary source permitting issues suggested that EPA should defer setting GHG standards for new motor vehicles to avoid such stationary source permitting impacts. EPA is issuing these final GHG standards for light-duty vehicles as part of its efforts to expeditiously respond to the Supreme Court's nearly three year old ruling in *Massachusetts* v. *EPA,* 549 U.S. 497 (2007). In that case, the Court held that greenhouse gases fit within the definition of air pollutant in the Clean Air Act, and that EPA is therefore compelled to respond to the rulemaking petition under section 202(a) by determining whether or not emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. The Court further ruled that, in making these decisions, the EPA Administrator is required to follow the language of section 202(a) of the CAA. The Court stated that under section 202(a), "[i]f EPA makes [the endangerment and cause or contribute findings], the Clean Air Act requires the agency to regulate emissions of the deleterious pollutant." 549 U.S. at 534. As discussed above, EPA has made the two findings on contribution and endangerment. 74 FR 66496 (December 15, 2009). Thus, EPA is required to issue standards applicable to emissions of this air pollutant from new motor vehicles.

The Court properly noted that EPA retained "significant latitude" as to the "timing * * * and coordination of its regulations with those of other agencies" (id.). However it has now been nearly three years since the Court issued its opinion, and the time for delay has passed. In the absence of these final standards, there would be three separate Federal and State regimes independently regulating light-duty vehicles to increase fuel economy and reduce GHG emissions: NHTSA's CAFE standards, EPA's GHG standards, and the GHG standards applicable in California and other states adopting the California standards. This joint EPA–NHTSA program will allow automakers to meet all of these requirements with a single national fleet because California has indicated that it will accept compliance with EPA's GHG standards as compliance with California's GHG standards. 74 FR at 49460. California has not indicated that it would accept NHTSA's CAFE standards by themselves. Without EPA's vehicle GHG standards, the states will not offer the Federal program as an alternative compliance option to automakers and the benefits of a harmonized national program will be lost. California and several other states have expressed strong concern that, without comparable Federal vehicle GHG standards, the states will not offer the Federal program as an alternative compliance option to automakers. Letter dated February 23, 2010 from Commissioners of California, Maine, New Mexico, Oregon and Washington to Senators Harry Reid and Mitch McConnell (Docket EPA–HQ–OAR–2009–0472–11400). The automobile industry also strongly supports issuance of these rules to allow implementation of the national program and avoid "a myriad of problems for the auto industry in terms of product planning, vehicle distribution, adverse economic impacts and, most importantly, adverse consequences for their dealers and customers." Letter dated March 17, 2010 from Alliance of Automobile Manufacturers to Senators Harry Reid and Mitch McConnell, and Representatives Nancy Pelosi and John Boehner (Docket EPA–HQ–OAR–2009–0472–11368). Thus, without EPA's GHG standards as part of a Federal harmonized program, important GHG reductions as well as benefits to the automakers and to consumers would be lost.[165] In addition, delaying the rule would impose significant burdens and uncertainty on automakers, who are already well into planning for production of MY 2012 vehicles, relying on the ability to produce a single national fleet. Delaying the issuance of this final rule would very seriously disrupt the industry's plans.

Instead of delaying the LDV rule and losing the benefits of this rule and the harmonized national program, EPA is directly addressing concerns about stationary source permitting in other actions that EPA is taking with regard to such permitting. That is the proper approach to address the issue of stationary source permitting, as compared to delaying the issuance of this rule for some undefined, indefinite time period.

Some parties have argued that EPA's issuance of this light-duty vehicle rule amounts to a denial of various administrative requests pending before EPA, in which parties have requested that EPA reconsider and stay the GHG endangerment finding published on December 15, 2009. That is not an accurate characterization of the impact of this final rule. EPA has not taken final action on these administrative requests, and issuance of this vehicle rule is not final agency action, explicitly or implicitly, on those requests. Currently, while we carefully consider the pending requests for reconsideration on endangerment, these final findings on endangerment and contribution remain in place. Thus under section 202(a) EPA is obligated to promulgate GHG motor vehicle standards, although there is no statutory deadline for issuance of the light-duty vehicle rule or other motor vehicle rules. In that context, issuance of this final light-duty vehicle rule does no more than recognize the current status of the findings—they are final and impose a rulemaking obligation on EPA, unless and until we change them. In issuing the vehicle rule we are not making a decision on requests to reconsider or stay the endangerment finding, and are not in any way prejudicing or limiting EPA's discretion in making a final decision on these administrative requests.

For discussion of comments on impacts on small entities and EPA's compliance with the Regulatory Flexibility Act, see the discussion in Section III.I.3.

b. Environmental and Economic Benefits and Costs of EPA's Standards

In Table III.A.3–3 EPA presents estimated annual net benefits for the indicated calendar years. The table also shows the net present values of those benefits for the calendar years 2012–2050 using both a 3 percent and a 7 percent discount rate. As discussed previously, EPA recognizes that much of these same costs and benefits are also attributable to the CAFE standard contained in this joint final rule.

[165] As discussed elsewhere, EPA's GHG standards achieve greater overall reductions in GHGs than NHTSA's CAFE standards.

TABLE III.A.3–3—PROJECTED QUANTIFIABLE BENEFITS AND COSTS FOR CO_2 STANDARD

[In million 2007$]

	2020	2030	2040	2050	NPV, 3% [a]	NPV, 7% [a]
Quantified Annual Costs [b]	−$20,100	−$64,000	−$101,900	−$152,200	−$1,199,700	−$480,700
Benefits From Reduced CO_2 Emissions at Each Assumed SCC Value [c d e]						
Avg SCC at 5%	900	2,700	4,600	7,200	34,500	34,500
Avg SCC at 3%	3,700	8,900	14,000	21,000	176,700	176,700
Avg SCC at 2.5%	5,800	14,000	21,000	30,000	299,600	299,600
95th percentile SCC at 3%	11,000	27,000	43,000	62,000	538,500	538,500
Other Impacts						
Criteria Pollutant Benefits [f g h i]	B	1,200–1,300	1,200–1,300	1,200–1,300	21,000	14,000
Energy Security Impacts (price shock)	2,200	4,500	6,000	7,600	81,900	36,900
Reduced Refueling	2,400	4,800	6,300	8,000	87,900	40,100
Value of Increased Driving [j]	4,200	8,800	13,000	18,400	171,500	75,500
Accidents, Noise, Congestion	−2,300	−4,600	−6,100	−7,800	−84,800	−38,600
Quantified Net Benefits at Each Assumed SCC Value [c d e]						
Avg SCC at 5%	27,500	81,500	127,000	186,900	1,511,700	643,100
Avg SCC at 3%	30,300	87,700	136,400	200,700	1,653,900	785,300
Avg SCC at 2.5%	32,400	92,800	143,400	209,700	1,776,800	908,200
95th percentile SCC at 3%	37,600	105,800	165,400	241,700	2,015,700	1,147,100

[a] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to Section III.F for more detail.

[b] Quantified annual costs are negative because of fuel savings (see Table III.H.10–1 for a breakdown of the vehicle technology costs and fuel savings). The fuel savings outweigh the vehicle technology costs and, therefore, the costs are presented here are negative values.

[c] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC Technical Support Document (TSD) notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[d] Section III.H.6 notes that SCC increases over time. Corresponding to the years in this table, the SCC estimates range as follows: for Average SCC at 5%: $5–$16; for Average SCC at 3%: $21–$45; for Average SCC at 2.5%: $35–$65; and for 95th percentile SCC at 3%: $65–$136. Section III.H.6 also presents these SCC estimates.

[e] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to SCC TSD for more detail.

[f] Note that "B" indicates unquantified criteria pollutant benefits in the year 2020. For the final rule, we only modeled the rule's $PM_{2.5}$- and ozone-related impacts in the calendar year 2030. For the purposes of estimating a stream of future-year criteria pollutant benefits, we assume that the benefits out to 2050 are equal to, and no less than, those modeled in 2030 as reflected by the stream of estimated future emission reductions. The NPV of criteria pollutant-related benefits should therefore be considered a conservative estimate of the potential benefits associated with the final rule.

[g] The benefits presented in this table include an estimate of PM-related premature mortality derived from Laden et al., 2006, and the ozone-related premature mortality estimate derived from Bell et al., 2004. If the benefit estimates were based on the ACS study of PM-related premature mortality (Pope et al., 2002) and the Levy et al., 2005 study of ozone-related premature mortality, the values would be as much as 70% smaller.

[h] The calendar year benefits presented in this table assume either a 3% discount rate in the valuation of PM-related premature mortality ($1,300 million) or a 7% discount rate ($1,200 million) to account for a twenty-year segmented cessation lag. Note that the benefits estimated using a 3% discount rate were used to calculate the NPV using a 3% discount rate and the benefits estimated using a 7% discount rate were used to calculate the NPV using a 7% discount rate. For benefits totals presented at each calendar year, we used the mid-point of the criteria pollutant benefits range ($1,250).

[i] Note that the co-pollutant impacts presented here do not include the full complement of endpoints that, if quantified and monetized, would change the total monetized estimate of impacts. The full complement of human health and welfare effects associated with PM and ozone remain unquantified because of current limitations in methods or available data. We have not quantified a number of known or suspected health effects linked with ozone and PM for which appropriate health impact functions are not available or which do not provide easily interpretable outcomes (*e.g.,* changes in heart rate variability). Additionally, we are unable to quantify a number of known welfare effects, including reduced acid and particulate deposition damage to cultural monuments and other materials, and environmental benefits due to reductions of impacts of eutrophication in coastal areas.

[j] Calculated using pre-tax fuel prices.

4. Basis for the GHG Standards Under Section 202(a)

EPA statutory authority under section 202(a)(1) of the Clean Air Act (CAA) is discussed in more detail in Section I.C.2 of the proposed rule (74 FR at 49464–65). The following is a summary of the basis for the final GHG standards under section 202(a), which is discussed in more detail in the following portions of Section III.

With respect to CO_2 and HFCs, EPA is adopting attribute-based light-duty car and truck standards that achieve large and important emissions reductions of GHGs. EPA has evaluated the technological feasibility of the standards, and the information and analysis performed by EPA indicates that these standards are feasible in the lead time provided. EPA and NHTSA have carefully evaluated the effectiveness of individual technologies as well as the interactions when technologies are combined. EPA's projection of the technology that would be used to comply with the standards indicates that manufacturers will be able to meet the standards by employing

a wide variety of technologies that are already commercially available and can be incorporated into their vehicles at the time of redesign. In addition to the consideration of the manufacturers' redesign cycle, EPA's analysis also takes into account certain flexibilities that will facilitate compliance especially in the early years of the program when potential lead time constraints are most challenging. These flexibilities include averaging, banking, and trading of various types of credits. For the industry as a whole, EPA's projections indicate that the standards can be met using technology that will be available in the lead-time provided. At the same time, it must be noted that because technology is commercially available today does not mean it can automatically be incorporated fleet-wide during the model years in question. As discussed below, and in detail in Section III.D.7, EPA and NHTSA carefully analyzed issues of adequacy of lead time in determining the level of the standards, and the agencies are convinced both that lead time is sufficient to meet the standards but that major further additions of technology across the fleet is not possible during these model years.

To account for additional lead-time concerns for various manufacturers of typically higher performance vehicles, EPA is adopting a Temporary Lead-time Allowance similar to that proposed that will further facilitate compliance for limited volumes of such vehicles in the program's initial years. For a few very small volume manufacturers, EPA is deferring standards pending later rulemaking.

EPA has also carefully considered the cost to manufacturers of meeting the standards, estimating piece costs for all candidate technologies, direct manufacturing costs, cost markups to account for manufacturers' indirect costs, and manufacturer cost reductions attributable to learning. In estimating manufacturer costs, EPA took into account manufacturers' own practices such as making major changes to model technology packages during a planned redesign cycle. EPA then projected the average cost across the industry to employ this technology, as well as manufacturer-by-manufacturer costs. EPA considers the per vehicle costs estimated from this analysis to be within a reasonable range in light of the emissions reductions and benefits received. EPA projects, for example, that the fuel savings over the life of the vehicles will more than offset the increase in cost associated with the technology used to meet the standards.

EPA has also evaluated the impacts of these standards with respect to reductions in GHGs and reductions in oil usage. For the lifetime of the model year 2012–2016 vehicles we estimate GHG reductions of approximately 960 million metric tons CO_2 eq. and fuel reductions of 1.8 billion barrels of oil. These are important and significant reductions. EPA has also analyzed a variety of other impacts of the standards, ranging from the standards' effects on emissions of non-GHG pollutants, impacts on noise, energy, safety and congestion. EPA has also quantified the cost and benefits of the standards, to the extent practicable. Our analysis to date indicates that the overall quantified benefits of the standards far outweigh the projected costs. Utilizing a 3% discount rate, we estimate the total net social benefits over the life of the model year 2012–2016 vehicles is $192 billion, and the net present value of the net social benefits of the standards through the year 2050 is $1.9 trillion dollars.[166] These values are estimated at $136 billion and $787 billion, respectively, using a 7% discount rate and the SCC discounted at 3 percent.[167]

Under section 202(a) EPA is called upon to set standards that provide adequate lead-time for the development and application of technology to meet the standards. EPA's standards satisfy this requirement, as discussed above. In setting the standards, EPA is called upon to weigh and balance various factors, and to exercise judgment in setting standards that are a reasonable balance of the relevant factors. In this case, EPA has considered many factors, such as cost, impacts on emissions (both GHG and non-GHG), impacts on oil conservation, impacts on noise, energy, safety, and other factors, and has, where practicable, quantified the costs and benefits of the rule. In summary, given the technical feasibility of the standard, the moderate cost per vehicle in light of the savings in fuel costs over the life time of the vehicle, the very significant reductions in emissions and in oil usage, and the significantly greater quantified benefits compared to quantified costs, EPA is confident that the standards are an appropriate and reasonable balance of the factors to consider under section 202(a). See *Husqvarna AB* v. *EPA,* 254 F. 3d 195, 200 (DC Cir. 2001) (great discretion to balance statutory factors in considering level of technology-based standard, and statutory requirement "to [give appropriate] consideration to the cost of applying * * * technology" does not mandate a specific method of cost analysis); see also *Hercules Inc.* v. *EPA,* 598 F. 2d 91, 106 (DC Cir. 1978) ("In reviewing a numerical standard we must ask whether the agency's numbers are within a zone of reasonableness, not whether its numbers are precisely right"); *Permian Basin Area Rate Cases,* 390 U.S. 747, 797 (1968) (same); *Federal Power Commission* v. *Conway Corp.,* 426 U.S. 271, 278 (1976) (same); *Exxon Mobil Gas Marketing Co.* v. *FERC,* 297 F. 3d 1071, 1084 (DC Cir. 2002) (same).

EPA recognizes that the vast majority of technologies which we are considering for purposes of setting standards under section 202(a) are commercially available and already being utilized to a limited extent across the fleet. The vast majority of the emission reductions, which would result from this rule, would result from the increased use of these technologies. EPA also recognizes that this rule would enhance the development and limited use of more advanced technologies, such as PHEVs and EVs. In this technological context, there is no clear cut line that indicates that only one projection of technology penetration could potentially be considered feasible for purposes of section 202(a), or only one standard that could potentially be considered a reasonable balancing of the factors relevant under section 202(a). EPA therefore evaluated two sets of alternative standards, one more stringent than the promulgated standards and one less stringent.

The alternatives are 4% per year increase in standards which would be less stringent and a 6% per year increase in the standards which would be more stringent. EPA is not adopting either of these. As discussed in Section III.D.7, the 4% per year forgoes CO_2 reductions which can be achieved at reasonable cost and are achievable by the industry within the rule's timeframe. The 6% per year alternative requires a significant increase in the projected required technology penetration which appears inappropriate in this timeframe due to the limited available lead time and the current difficult financial condition of the automotive industry. (See Section III.D.7 for a detailed discussion of why EPA is not adopting either of the alternatives.) EPA also believes that the no backsliding standards it is adopting

[166] Based on the mean SCC at 3 percent discount rate, which is $21 per metric ton CO_2 in 2010 rising to $45 per metric ton CO_2 in 2050.

[167] SCC was discounted at 3 percent to maintain internal consistency in the SCC calculations while all other benefits were discounted at 7 percent. Specifically, the same discount rate used to discount the value of damages from future CO_2 emissions is used to calculate net present value of SCC.

for N_2O and CH_4 are appropriate under section 202(a).

B. GHG Standards for Light-Duty Vehicles, Light-Duty Trucks, and Medium-Duty Passenger Vehicles

EPA is finalizing new emission standards to control greenhouse gases (GHGs) from light-duty vehicles. First, EPA is finalizing an emission standard for carbon dioxide (CO_2) on a gram per mile (g/mile) basis that will apply to a manufacturer's fleet of cars, and a separate standard that will apply to a manufacturer's fleet of trucks. CO_2 is the primary greenhouse gas resulting from the combustion of vehicular fuels, and the amount of CO_2 emitted is directly correlated to the amount of fuel consumed. Second, EPA is providing auto manufacturers with the opportunity to earn credits toward the fleet-wide average CO_2 standards for improvements to air conditioning systems, including both hydrofluorocarbon (HFC) refrigerant losses (*i.e.,* system leakage) and indirect CO_2 emissions related to the increased load on the engine. Third, EPA is finalizing separate emissions standards for two other GHGs: Methane (CH_4) and nitrous oxide (N_20). CH_4 and N_2O emissions relate closely to the design and efficient use of emission control hardware (*i.e.,* catalytic converters). The standards for CH_4 and N_2O will be set as a cap that will limit emissions increases and prevent backsliding from current emission levels. The final standards described below will apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles (MDPVs). As an overall group, they are referred to in this preamble as light vehicles or simply as vehicles. In this preamble section passenger cars may be referred to simply as "cars", and light-duty trucks and MDPVs as "light trucks" or "trucks." [168]

EPA's program includes a number of credit opportunities and other flexibilities to help manufacturers comply, especially in the early years of the program. EPA is establishing a system of averaging, banking, and trading of credits integral to the fleet averaging approach, based on manufacturer fleet average CO_2 performance, as discussed in Section III.B.4. This approach is similar to averaging, banking, and trading (ABT) programs EPA has established in other programs and is also similar to provisions in the CAFE program. In addition to traditional ABT credits based on the fleet emissions average, EPA is also including A/C credits as an aspect of the standards, as mentioned above. EPA is also including several additional credit provisions that apply only in the initial model years of the program. These include flex fuel vehicle credits, incentives for the early commercialization of certain advanced technology vehicles, credits for new and innovative "off-cycle" technologies that are not captured by the current test procedures, and generation of credits prior to model year 2012. The A/C credits and additional credit opportunities are described in Section III.C. These credit programs will provide flexibility to manufacturers, which may be especially important during the early transition years of the program. EPA will also allow a manufacturer to carry a credit deficit into the future for a limited number of model years. A parallel provision, referred to as credit carry-back, will be part of the CAFE program. Finally, EPA is finalizing an optional compliance flexibility, the Temporary Leadtime Allowance Alternative Standard program, for intermediate volume manufacturers, and is deferring standards for the smallest manufacturers, as discussed in Sections III.B.5 and 6 below.

1. What fleet-wide emissions levels correspond to the CO_2 standards?

The attribute-based CO_2 standards are projected to achieve a national fleet-wide average, covering both light cars and trucks, of 250 grams/mile of CO_2 in model year (MY) 2016. This includes CO_2-equivalent emission reductions from A/C improvements, reflected as credits in the standard. The standards will begin with MY 2012, with a generally linear increase in stringency from MY 2012 through MY 2016. EPA will have separate standards for cars and light trucks. The tables in this section below provide overall fleet average levels that are projected for both cars and light trucks over the phase-in period which is estimated to correspond with the standards. The actual fleet-wide average g/mi level that will be achieved in any year for cars and trucks will depend on the actual production for that year, as well as the use of the various credit and averaging, banking, and trading provisions. For example, in any year, manufacturers may generate credits from cars and use them for compliance with the truck standard. Such transfer of credits between cars and trucks is not reflected in the table below. In Section III.F, EPA discusses the year-by-year estimate of emissions reductions that are projected to be achieved by the standards.

In general, the schedule of standards acts as a phase-in to the MY 2016 standards, and reflects consideration of the appropriate lead-time for each manufacturer to implement the requisite emission reductions technology across its product line.[169] Note that 2016 is the final model year in which standards become more stringent. The 2016 CO_2 standards will remain in place for 2017 and later model years, until revised by EPA in a future rulemaking.

EPA estimates that, on a combined fleet-wide national basis, the 2016 MY standards will achieve a level of 250 g/mile CO_2, including CO_2-equivalent credits from A/C related reductions. The derivation of the 250 g/mile estimate is described in Section III.B.2.

EPA has estimated the overall fleet-wide CO_2-equivalent emission levels that correspond with the attribute-based standards, based on the projections of the composition of each manufacturer's fleet in each year of the program. Tables III.B.1–1 and III.B.1–2 provides these estimates for each manufacturer.[170]

As a result of public comments and updated economic and future fleet projections, the attribute based curves have been updated for this final rule, as discussed in detail in Section II.B of this preamble and Chapter 2 of the Joint TSD. This update in turn affects costs, benefits, and other impacts of the final standards—thus EPA's overall projection of the impacts of the final rule standards have been updated and the results are different than for the NPRM, though in general not by a large degree.

[168] As described in Section III.B.2., GHG emissions standards will use the same vehicle category definitions as are used in the CAFE program.

[169] *See* CAA section 202(a)(2).

[170] These levels do not include the effect of flexible fuel credits, transfer of credits between cars and trucks, temporary lead time allowance, or any other credits.

TABLE III.B.1–1—ESTIMATED FLEET CO_2-EQUIVALENT LEVELS CORRESPONDING TO THE STANDARDS FOR CARS

[g/mile]

Manufacturer	Model year				
	2012	2013	2014	2015	2016
BMW	266	259	250	239	228
Chrysler	269	262	254	243	232
Daimler	274	267	259	249	238
Ford	267	259	251	240	229
General Motors	268	261	252	241	230
Honda	260	252	244	233	222
Hyundai	260	254	246	233	222
Kia	263	255	247	235	224
Mazda	260	252	243	232	221
Mitsubishi	257	249	241	230	219
Nissan	263	256	248	237	226
Porsche	244	237	228	217	206
Subaru	253	246	237	226	215
Suzuki	245	238	230	218	208
Tata	288	280	272	261	250
Toyota	259	251	243	232	221
Volkswagen	256	249	240	229	219

TABLE III.B.1–2—ESTIMATED FLEET CO_2-EQUIVALENT LEVELS CORRESPONDING TO THE STANDARDS FOR LIGHT TRUCKS

[g/mile]

Manufacturer	Model year				
	2012	2013	2014	2015	2016
BMW	330	320	310	297	283
Chrysler	342	333	323	309	295
Daimler	343	332	323	308	294
Ford	354	344	334	319	305
General Motors	364	354	344	330	316
Honda	327	318	309	295	281
Hyundai	325	316	307	292	278
Kia	335	327	318	303	289
Mazda	319	308	299	285	271
Mitsubishi	316	306	297	283	269
Nissan	343	334	323	308	294
Porsche	334	325	315	301	287
Subaru	315	305	296	281	267
Suzuki	320	310	300	286	272
Tata	321	310	301	287	272
Toyota	342	333	323	308	294
Volkswagen	341	331	322	307	293

These estimates were aggregated based on projected production volumes into the fleet-wide averages for cars and trucks (Table III.B.1–3).[171]

TABLE III.B.1–3—ESTIMATED FLEET-WIDE CO_2-EQUIVALENT LEVELS CORRESPONDING TO THE STANDARDS

Model year	Cars	Trucks
	CO_2 (g/mi)	CO_2 (g/mi)
2012	263	346
2013	256	337
2014	247	326
2015	236	312
2016 and later	225	298

As shown in Table III.B.1–3, fleet-wide CO_2-equivalent emission levels for cars under the approach are projected to decrease from 263 to 225 grams per mile between MY 2012 and MY 2016. Similarly, fleet-wide CO_2-equivalent

[171] Due to rounding during calculations, the estimated fleet-wide CO_2-equivalent levels may vary by plus or minus 1 gram.

emission levels for trucks are projected to decrease from 346 to 398 grams per mile. These numbers do not include the effects of other flexibilities and credits in the program. The estimated achieved values can be found in Chapter 5 of the Regulatory Impact Analysis (RIA).

EPA has also estimated the average fleet-wide levels for the combined car and truck fleets. These levels are provided in Table III.B.1–4. As shown, the overall fleet average CO_2 level is expected to be 250 g/mile in 2016.

TABLE III.B.1–4—ESTIMATED FLEET-WIDE COMBINED CO_2-EQUIVALENT LEVELS CORRESPONDING TO THE STANDARDS

Model year	Combined car and truck
	CO_2 (g/mi)
2012	295
2013	286
2014	276
2015	263
2016	250

As noted above, EPA is finalizing standards that will result in increasingly stringent levels of CO_2 control from MY 2012 though MY 2016—applying the CO_2 footprint curves applicable in each model year to the vehicles expected to be sold in each model year produces fleet-wide annual reductions in CO_2 emissions. Comments from the Center for Biological Diversity (CBD) challenged EPA to increase the stringency of the standards for all of the years of the program, and even argued that 2016 standards should be feasible in 2012. Other commenters noted the non-linear increase in the standards from 2011 (CAFE) to the 2012 GHG standards. As explained in greater detail in Section III.D below and the relevant support documents, EPA believes that the level of improvement achieves important CO_2 emissions reductions through the application of feasible control technology at reasonable cost, considering the needed lead time for this program. EPA further believes that the averaging, banking and trading provisions, as well as other credit-generating mechanisms, allow manufacturers further flexibilities which reduce the cost of the CO_2 standards and help to provide adequate lead time. EPA believes this approach is justified under section 202(a) of the Clean Air Act.

EPA has analyzed the feasibility under the CAA of achieving the CO_2 standards, based on projections of what actions manufacturers are expected to take to reduce emissions. The results of the analysis are discussed in detail in Section III.D below and in the RIA. EPA also presents the estimated costs and benefits of the car and truck CO_2 standards in Section III.H. In developing the final rule, EPA has evaluated the kinds of technologies that could be utilized by the automobile industry, as well as the associated costs for the industry and fuel savings for the consumer, the magnitude of the GHG reductions that may be achieved, and other factors relevant under the CAA.

With respect to the lead time and cost of incorporating technology improvements that reduce GHG emissions, EPA and NHTSA place important weight on the fact that during MYs 2012–2016 manufacturers are expected to redesign and upgrade their light-duty vehicle products (and in some cases introduce entirely new vehicles not on the market today). Over these five model years there will be an opportunity for manufacturers to evaluate almost every one of their vehicle model platforms and add technology in a cost-effective way to control GHG emissions and improve fuel economy. This includes redesign of the air conditioner systems in ways that will further reduce GHG emissions. The time-frame and levels for the standards, as well as the ability to average, bank and trade credits and carry a deficit forward for a limited time, are expected to provide manufacturers the time needed to incorporate technology that will achieve GHG reductions, and to do this as part of the normal vehicle redesign process. This is an important aspect of the final rule, as it will avoid the much higher costs that will occur if manufacturers needed to add or change technology at times other than these scheduled redesigns. This time period will also provide manufacturers the opportunity to plan for compliance using a multi-year time frame, again in accord with their normal business practice. Further details on lead time, redesigns and feasibility can be found in Section III–D.

Consistent with the requirement of CAA section 202(a)(1) that standards be applicable to vehicles "for their useful life," EPA is finalizing CO_2 vehicle standards that will apply for the useful life of the vehicle. Under section 202(i) of the Act, which authorized the Tier 2 standards, EPA established a useful life period of 10 years or 120,000 miles, whichever first occurs, for all Tier 2 light-duty vehicles and light-duty trucks.[172] Tier 2 refers to EPA's standards for criteria pollutants such as NO_X, HC, and CO. EPA is finalizing new CO_2 standards for the same group of vehicles, and therefore the Tier 2 useful life will apply for CO_2 standards as well. The in-use emission standard will be 10% higher than the model-level certification emission test results, to address issues of production variability and test-to-test variability. The in-use standard is discussed in Section II*I.E.*

EPA is requiring manufacturers to measure CO_2 for certification and compliance purposes using the same test procedures currently used by EPA for measuring fuel economy. These procedures are the Federal Test Procedure (FTP or "city" test) and the Highway Fuel Economy Test (HFET or "highway" test).[173] This corresponds with the data used to develop the footprint-based CO_2 standards, since the data on control technology efficiency was also developed in reference to these test procedures. Although EPA recently updated the test procedures used for fuel economy labeling, to better reflect the actual in-use fuel economy achieved by vehicles, EPA is not using these test procedures for the CO_2 standards in this final rule, given the lack of data on control technology effectiveness under these procedures.[174] There were a number of commenters that advocated for a change in either the test procedures or the fuel economy calculation weighting factors. The U.S. Coalition for Advanced Diesel Cars urged a changing of the city/highway weighting factors from their current values of 45/55 to 43/57 to be more consistent with the EPA (5-cycle) fuel economy labeling rule. EPA has decided that such a change would not be appropriate, nor consistent with the technical analyses supporting the 5-cycle fuel economy label rulemaking. The city/highway weighting of 43/57 was found to be appropriate when the city fuel economy is based on a combination of Bags 2 and 3 of the FTP and the city portion of the US06 test cycle, and when the highway fuel economy is based on a combination of the HFET and the highway portion of the US06 cycle. When city and highway fuel economy are based on the FTP and HFET cycles, respectively, the appropriate city/highway weighting is not 43/57, but very close to 55/45. Therefore, the weighting of the city and

[172] *See* 65 FR 6698 (February 10, 2000).

[173] EPA established the FTP for emissions measurement in the early 1970s. In 1976, in response to the Energy Policy and Conservation Act (EPCA) statute, EPA extended the use of the FTP to fuel economy measurement and added the HFET. The provisions in the 1976 regulation, effective with the 1977 model year, established procedures to calculate fuel economy values both for labeling and for CAFE purposes.

[174] *See* 71 FR 77872, December 27, 2006.

highway fuel economy values contained in this rule is appropriate for and consistent with the use of the FTP and HFET cycles to measure city and highway fuel economy.

The American Council for an Energy-Efficient Economy (ACEEE), Cummins, and Sierra Club all suggested using more real-world test procedures. It is not feasible at this time to base the final CO_2 standards on EPA's five-cycle fuel economy formulae. Consistent with its name, these formulae require vehicle testing over five test cycles, the two cycles associated with the proposed CO_2 standards, plus the cold temperature FTP, the US06 high speed, high acceleration cycle and the SC03 air conditioning test. EPA considered employing the five-cycle calculation of fuel economy and GHG emissions for this rule, but there were a number of reasons why this was not practical. As discussed extensively in the Joint TSD, setting the appropriate levels of CO_2 standards requires extensive knowledge of the CO_2 emission control effectiveness over the certification test cycles. Such knowledge has been gathered over the FTP and HFET cycles for decades, but is severely lacking for the other three test cycles. EPA simply lacks the technical basis to project the effectiveness of the available technologies over these three test cycles and therefore, could not adequately support a rule which set CO_2 standards based on the five-cycle formulae. The benefits of today's rule do presume a strong connection between CO_2 emissions measured over the FTP and HFET cycles and onroad operation. Since CO_2 emissions determined by the five-cycle formulae are believed to correlate reasonably with onroad emissions, this implies a strong connection between emissions over the FTP and HFET cycles and the five cycle formulae. However, while we believe that this correlation is reasonable on average for the vehicle fleet, it may not be reasonable on a per vehicle basis, nor for any single manufacturer's vehicles. Thus, we believe that it is reasonable to project a direct relationship between the percentage change in CO_2 emissions over the two certification cycles and onroad emissions (a surrogate of which is the five-cycle formulae), but not reasonable to base the certification of specific vehicles on that untested relationship. Furthermore, EPA is allowing for off-cycle credits to encourage technologies that may not be not properly captured on the 2-cycle city/highway test procedure (although these credits could apply toward compliance with EPA's standards, not toward compliance with the CAFE standards). For future analysis, EPA will consider examining new drive cycles and test procedures for fuel economy.[175]

EPA is finalizing standards that include hydrocarbons (HC) and carbon monoxide (CO) in its CO_2 emissions calculations on a CO_2-equivalent basis. It is well accepted that HC and CO are typically oxidized to CO_2 in the atmosphere in a relatively short period of time and so are effectively part of the CO_2 emitted by a vehicle. In terms of standard stringency, accounting for the carbon content of tailpipe HC and CO emissions and expressing it as CO_2-equivalent emissions will add less than one percent to the overall CO_2-equivalent emissions level. This will also ensure consistency with CAFE calculations since HC and CO are included in the "carbon balance" methodology that EPA uses to determine fuel usage as part of calculating vehicle fuel economy levels.

2. What are the CO_2 attribute-based standards?

EPA is finalizing the same vehicle category definitions that are used in the CAFE program for the 2011 model year standards.[176] This approach allows EPA's CO_2 standards and the CAFE standards to be harmonized across all vehicles. In other words, vehicles will be subject to either car standards or truck standards under both programs, and not car standards under one program and trucks standards under the other. The CAFE vehicle category definitions differ slightly from the EPA definitions for cars and light trucks used for the Tier 2 program and other EPA vehicle programs. However, EPA is not changing the vehicle category definitions for any other light-duty mobile source programs, except the GHG standards.

EPA is finalizing separate car and truck standards, that is, vehicles defined as cars have one set of footprint-based curves for MY 2012–2016 and vehicles defined as trucks have a different set for MY 2012–2016. In general, for a given footprint the CO_2 g/mi target for trucks is less stringent then for a car with the same footprint.

Some commenters requested a single or converging curve for both cars and trucks.[177] EPA is not finalizing a single fleet standard where all cars and trucks are measured against the same footprint curve for several reasons. First, some vehicles classified as trucks (such as pick-up trucks) have certain attributes not common on cars which attributes contribute to higher CO_2 emissions—notably high load carrying capability and/or high towing capability.[178] Due to these differences, it is reasonable to separate the light-duty vehicle fleet into two groups. Second, EPA wishes to harmonize key program design elements of the GHG standards with NHTSA's CAFE program where it is reasonable to do so. NHTSA is required by statute to set separate standards for passenger cars and for non-passenger cars. As discussed in Section IV, EPCA does not preclude NHTSA from issuing converging standards if its analysis indicates that these are the appropriate standards under the statute applicable separately to each fleet.

Finally, most of the advantages of a single standard for all light duty vehicles are also present in the two-fleet standards finalized here. Because EPA is allowing unlimited credit transfer between a manufacturer's car and truck fleets, the two fleets can essentially be viewed as a single fleet when manufacturers consider compliance strategies. Manufacturers can thus choose on which vehicles within their fleet to focus GHG reducing technology and then use credit transfers as needed to demonstrate compliance, just as they will if there was a single fleet standard. The one benefit of a single light-duty fleet not captured by a two-fleet approach is that a single fleet prevents potential "gaming" of the car and truck definitions to try and design vehicles which are more similar to passenger cars but which may meet the regulatory definition of trucks. Although this is of concern to EPA, we do not believe at this time that concern is sufficient to outweigh the other reasons for finalizing separate car and truck fleet standards. However, it is possible that in the future, recent trends may continue such that cars may become more truck-like and trucks may become more car-like. Therefore, EPA will reconsider whether it is appropriate to use converging curves if justified by future analysis.

For model years 2012 and later, EPA is finalizing a series of CO_2 standards that are described mathematically by a family of piecewise linear functions

[175] There were also a number of comments on air conditioner test procedures; these will be discussed in Section III.C and the RIA.

[176] *See* 49 CFR 523.

[177] CBD, ICCT and NESCAUM supported a single curve and the students at UC Santa Barbara commented on converging curves.

[178] There is a distinction between body-on-frame trucks and unibody cars and trucks that make them technically different in a number of ways. Also, 2WD vehicles tend to have lower CO_2 emissions than their 4WD counterparts (all other things being equal). More discussion of this can be found in the TSD and RIA.

(with respect to vehicle footprint).[179] The form of the function is as follows:

$CO_2 = a$, if $x \leq l$

$CO_2 = cx + d$, if $l < x \leq h$

$CO_2 = b$, if $x > h$

Where:

CO_2 = the CO_2 target value for a given footprint (in g/mi)
a = the minimum CO_2 target value (in g/mi)
b = the maximum CO_2 target value (in g/mi)
c = the slope of the linear function (in g/mi per sq ft)
d = is the zero-offset for the line (in g/mi CO_2)
x = footprint of the vehicle model (in square feet, rounded to the nearest tenth)
l & h are the lower and higher footprint limits, constraints, or the boundary ("kinks") between the flat regions and the intermediate sloped line

EPA's parameter values that define the family of functions for the CO_2 fleetwide average car and truck standards are as follows:

TABLE III.B.2–1—PARAMETER VALUES FOR CARS

[For CO_2 gram per mile targets]

Model year	a	b	c	d	Lower constraint	Upper constraint
2012	244	315	4.72	50.5	41	56
2013	237	307	4.72	43.3	41	56
2014	228	299	4.72	34.8	41	56
2015	217	288	4.72	23.4	41	56
2016 and later	206	277	4.72	12.7	41	56

TABLE III.B.2–2—PARAMETER VALUES FOR TRUCKS

[For CO_2 gram per mile targets]

Model year	a	b	c	d	Lower constraint	Upper constraint
2012	294	395	4.04	128.6	41	66
2013	284	385	4.04	118.7	41	66
2014	275	376	4.04	109.4	41	66
2015	261	362	4.04	95.1	41	66
2016 and later	247	348	4.04	81.1	41	66

The equations can be shown graphically for each vehicle category, as shown in Figures III.B.2–1 and III.B.2–2. These standards (or functions) decrease from 2012–2016 with a vertical shift.

The EPA received a number of comments on both the attribute and the shape of the curve. For reasons described in Section IIC and Chapter 2 of the TSD, the EPA feels that footprint is the most appropriate choice of attribute for this rule. More background discussion on other alternative attributes and curves EPA explored can be found in the EPA RIA. EPA recognizes that the CAA does not mandate that EPA use an attribute based standard, as compared to NHTSA's obligations under EPCA. The EPA believes that a footprint-based program will harmonize EPA's program and the CAFE program as a single national program, resulting in reduced compliance complexity for manufacturers. EPA's reasons for using an attribute based standard are discussed in more detail in the Joint TSD. Also described in these other sections are the reasons why EPA is finalizing the slopes and the constraints as shown above. For future analysis, EPA will consider other options and suggestions made by commenters.

EPA also received public comments from three manufacturers, General Motors, Ford Motor Company, and Chrysler, suggesting that the GHG program should harmonize with an EPCA provision that allows a manufacturer to exclude emergency vehicles from its CAFE fleet by providing written notice to NHTSA.[180] These manufacturers believe this provision is necessary because law enforcement vehicles (*e.g.,* police cars) must be designed with special performance and features necessary for police work—but which tend to raise GHG emissions and reduce fuel economy relative to the base vehicle. These commenters provided several examples of features unique to these special purpose vehicles that negatively impact GHG emissions, such as heavy-duty suspensions, unique engine and transmission calibrations, and heavy-duty components (*e.g.,* batteries, stabilizer bars, engine cooling). These manufacturers believe consistency in addressing these vehicles between the EPA and NHTSA programs is critical, as a manufacturer may be challenged to continue providing the performance needs of the Federal, State, and local government purchasers of emergency vehicles.

EPA is not finalizing such an emergency vehicle provision in this rule, since we believe that it is feasible for manufacturers to apply the same types of technologies to the base emergency vehicle as they would to other vehicles in their fleet. However, EPA also recognizes that, because of the unique "performance upgrading" needed to convert a base vehicle into one that meets the performance demands of the law enforcement community—which tend to reduce GHGs relative to the base vehicles—there could be situations where a manufacturer is more challenged in meeting the GHG standards than the CAFE standards, simply due to inclusion of these higher-emitting vehicles in the GHG program fleet. While EPA is not finalizing such an exclusion for emergency vehicles today, we do believe it is important to assess this issue in the future. EPA plans to assess the unique characteristics of these emergency vehicles and whether special provisions for addressing them are warranted. EPA plans to undertake this evaluation as part of a follow-up rulemaking in the next 18 months (this rulemaking is discussed in the context of small

[179] *See* final regulations at 40 CFR 86.1818–12.

[180] 49 U.S.C. 32902(e).

volume manufacturers in Section III.B.6. below).

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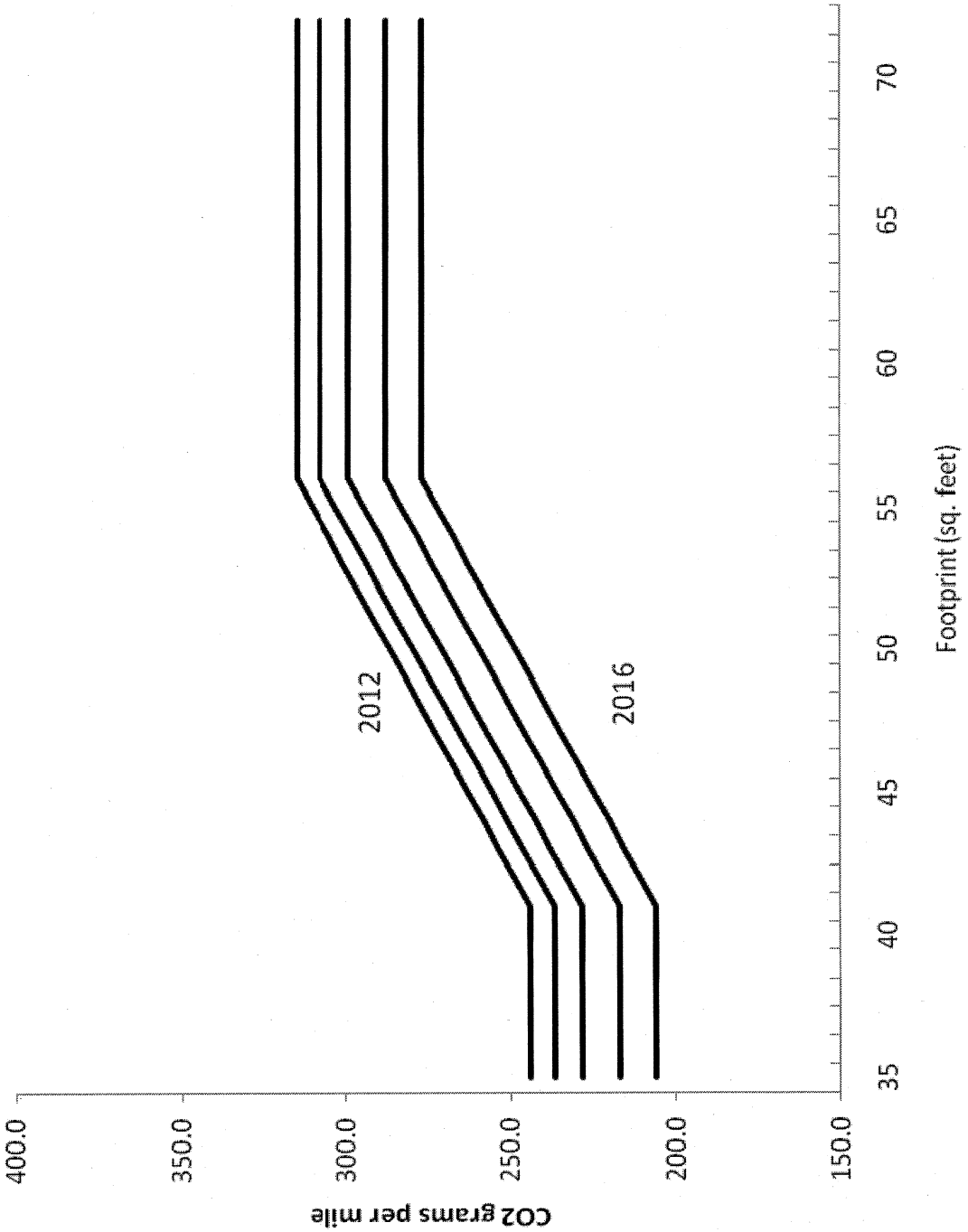

Figure III.B.2-1. CO_2 (g/mi) Car standard curves.

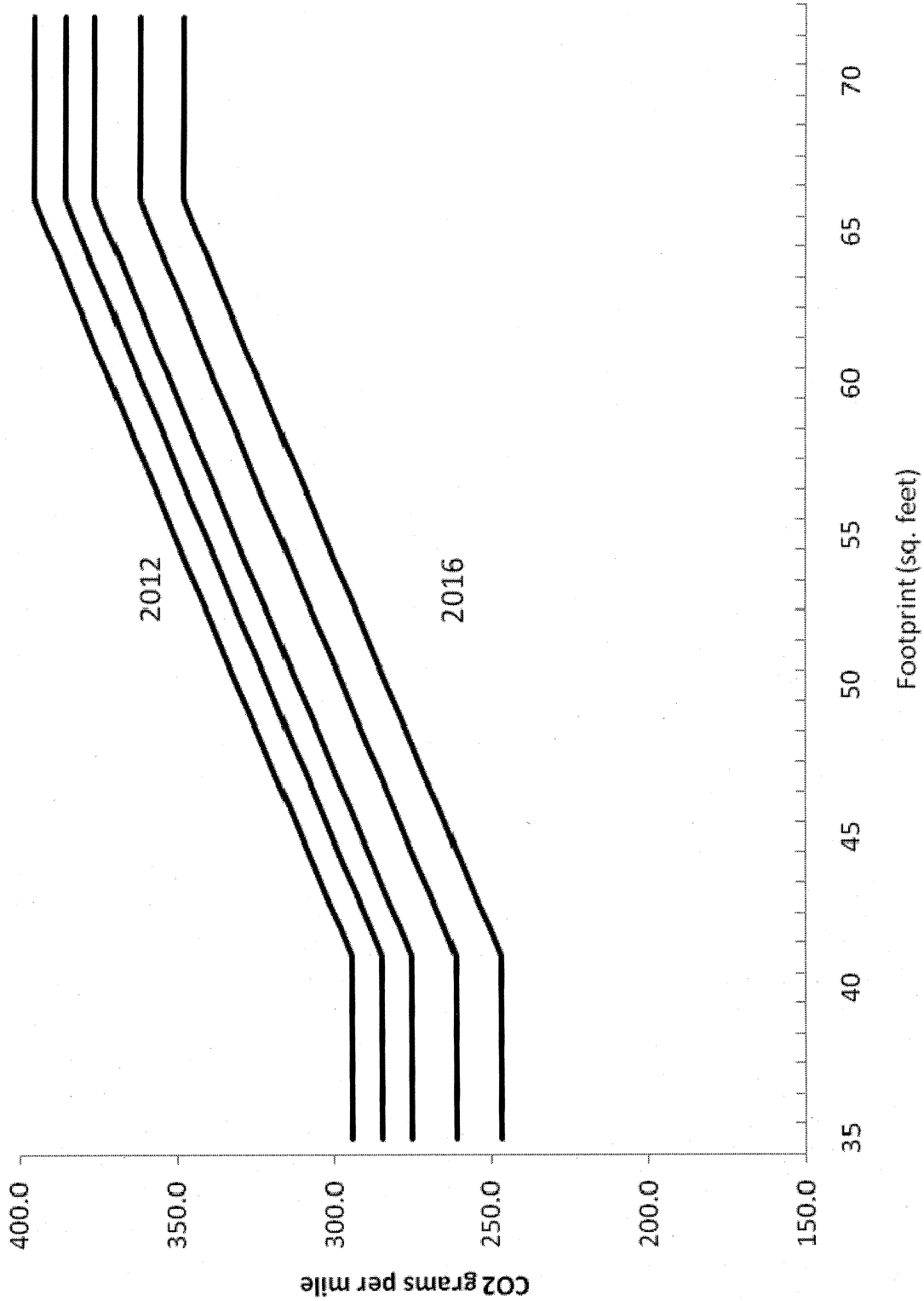

Figure III.B.2-2. CO_2 (g/mi) Truck standard curves.

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3. Overview of How EPA's CO_2 Standards Will Be Implemented for Individual Manufacturers

This section provides a brief overview of how EPA will implement the CO_2 standards. Section III.E explains EPA's approach to certification and compliance in detail. As proposed, EPA is finalizing two kinds of standards—fleet average standards determined by a manufacturer's fleet makeup, and in-use standards that will apply to the individual vehicles that make up the manufacturer's fleet. Although this is similar in concept to the current light-duty vehicle Tier 2 program, there are important differences. In explaining EPA's CO_2 standards, it is useful to summarize how the Tier 2 program works.

Under Tier 2, manufacturers select a test vehicle prior to certification and test the vehicle and/or its emissions hardware to determine both its emissions performance when new and the emissions performance expected at the end of its useful life. Based on this testing, the vehicle is assigned to one of several specified bins of emissions levels, identified in the Tier 2 rule, and this bin level becomes the emissions standard for the test group the test vehicle represents. All of the vehicles in the group must meet the emissions level for that bin throughout their useful life. The emissions level assigned to the bin is also used in calculating the manufacturer's fleet average emissions performance.

Since compliance with the Tier 2 fleet average depends on actual test group sales volumes and bin levels, it is not possible to determine compliance at the time the manufacturer applies for and receives a certificate of conformity for a test group. Instead, at certification, the manufacturer demonstrates that the vehicles in the test group are expected to comply throughout their useful life with the emissions bin assigned to that test group, and makes a good faith demonstration that its fleet is expected to comply with the Tier 2 average when the model year is over. EPA issues a certificate for the vehicles covered by the test group based on this demonstration, and includes a condition in the certificate that if the manufacturer does not comply with the fleet average then production vehicles from that test group will be treated as not covered by the certificate to the extent needed to bring the manufacturer's fleet average into compliance with Tier 2.

EPA is retaining the Tier 2 approach of requiring manufacturers to demonstrate in good faith at the time of certification that vehicles in a test group will meet applicable standards throughout useful life. EPA is also retaining the practice of conditioning certificates upon attainment of the fleet average standard. However, there are several important differences between a Tier 2 type of program and the CO_2 standards program. These differences and resulting modifications to EPA's certification protocols are summarized below and are described in detail in Section II*I.E.*

EPA will continue to certify test groups as it does for Tier 2, and the CO_2 emission results for the test vehicle will serve as the initial or default standard for all of the vehicles in the test group. However, manufacturers will later collect and submit data for individual vehicle model types [181] within each test group, based on the extensive fuel economy testing that occurs through the course of the model year. This model type data will be used to assign a distinct certification level for each model type, thus replacing the initial test group data as the compliance value for each model. It is these model type values that will be used to calculate the fleet average after the end of the model year.[182] The option to substitute model type data for the test group data is at the manufacturer's discretion, except they are required, as they are under the CAFE test protocols, to submit sufficient vehicle test data to represent no less than 90 percent of their actual model year production. The test group emissions data will continue to apply for any model type that is not covered by vehicle test data specific to that model type.

EPA's CO_2 standards also differ from Tier 2 in that the fleet average calculation for Tier 2 is based on test group bin levels and test group sales whereas under the CO_2 program the CO_2 fleet average could be based on a combination of test group and model type emissions and model type production. For the new CO_2 standards, the final regulations use production rather than sales in calculating the fleet average in order to closely conform with the CAFE program, which is a production-based program.[183] Production as defined in the regulations is relatively easy for manufacturers to track, but once the vehicle is delivered to dealerships the manufacturer becomes once step removed from the sale to the ultimate customer, and it becomes more difficult to track that final transaction. There is no environmental impact of using production instead of actual sales, and many commenters supported maintaining alignment between EPA's program and the CAFE program where possible.

4. Averaging, Banking, and Trading Provisions for CO_2 Standards

As explained above, EPA is finalizing a fleet average CO_2 program for passenger cars and light trucks. EPA has previously implemented similar averaging programs for a range of motor vehicle types and pollutants, from the Tier 2 fleet average for NO_X to motorcycle hydrocarbon (HC) plus oxides of nitrogen (NO_X) emissions to NO_X and particulate matter (PM) emissions from heavy-duty engines.[184] The program will operate much like EPA's existing averaging programs in that manufacturers will calculate production-weighted fleet average emissions at the end of the model year and compare their fleet average with a fleet average emission standard to determine compliance. As in other EPA averaging programs, the Agency is also finalizing a comprehensive program for averaging, banking, and trading of credits which together will help manufacturers in planning and implementing the orderly phase-in of emissions control technology in their production, consistent with their typical redesign schedules.[185]

Averaging, Banking, and Trading (ABT) of emissions credits has been an important part of many mobile source programs under CAA Title II, both for fuels programs as well as for engine and vehicle programs. ABT is important because it can help to address many issues of technological feasibility and lead-time, as well as considerations of cost. ABT is an integral part of the standard setting itself, and is not just an add-on to help reduce costs. In many cases, ABT resolves issues of lead-time

[181] "Model type" is defined in 40 CFR 600.002–08 as "* * * a unique combination of car line, basic engine, and transmission class." A "car line" is essentially a model name, such as "Camry," "Malibu," or "F150." The fleet average is calculated on the basis of model type emissions.

[182] The final in-use vehicle standards for each vehicle will also be based on the testing used to determine the model type values. As discussed in Section II*.E.*4, an in-use adjustment factor will be applied to the vehicle test results to determine the in-use standard that will apply during the useful life of the vehicle.

[183] "Production" is defined as "vehicles produced and delivered for sale" and is not a measure of the number of vehicles actually sold.

[184] For example, *see* the Tier 2 light-duty vehicle emission standards program (65 FR 6698, February 10, 2000), the 2010 and later model year motorcycle emissions program (69 FR 2398, January 15, 2004), and the 2007 and later model year heavy-duty engine and vehicle standards program (66 FR 5001, January 18, 2001).

[185] *See* final regulations at 40 CFR 86.1865–12.

or technical feasibility, allowing EPA to set a standard that is either numerically more stringent or goes into effect earlier than could have been justified otherwise. This provides important environmental benefits and at the same time it increases flexibility and reduces costs for the regulated industry. A wide range of commenters expressed general support for the ABT provisions. Some commenters noted issues regarding specific provisions of the ABT program, which will be discussed in the appropriate context below. Several commenters requested that EPA publicly release manufacturer-specific ABT data to improve the transparency of credit transactions. These comments are addressed in Section II*I.E.*

This section discusses generation of credits by achieving a fleet average CO_2 level that is lower than the manufacturer's CO_2 fleet average standard. The final rule includes a variety of additional ways credits may be generated by manufacturers. Section III.C describes these additional opportunities to generate credits in detail. Manufacturers may earn credits through A/C system improvements beyond a specified baseline. Credits can also be generated by producing alternative fuel vehicles, by producing advanced technology vehicles including electric vehicles, plug-in hybrids, and fuel cell vehicles, and by using technologies that improve off-cycle emissions. In addition, early credits can be generated prior to the program's MY 2012 start date. The credits will be used to determine a manufacturer's compliance at the end of the model year. These credit generating opportunities are described below in Section III.C.

As explained earlier, manufacturers will determine the fleet average standard that applies to their car fleet and the standard for their truck fleet from the applicable attribute-based curve. A manufacturer's credit or debit balance will be determined by comparing their fleet average with the manufacturer's CO_2 standard for that model year. The standard will be calculated from footprint values on the attribute curve and actual production levels of vehicles at each footprint. A manufacturer will generate credits if its car or truck fleet achieves a fleet average CO_2 level lower than its standard and will generate debits if its fleet average CO_2 level is above that standard. At the end of the model year, each manufacturer will calculate a production-weighted fleet average for each averaging set (cars and trucks). A manufacturer's car or truck fleet that achieves a fleet average CO_2 level lower than its standard will generate credits, and if its fleet average CO_2 level is above that standard its fleet will generate debits.

The regulations will account for the difference in expected lifetime vehicle miles traveled (VMT) between cars and trucks in order to preserve CO_2 reductions when credits are transferred between cars and trucks. As directed by EISA, NHTSA accomplishes this in the CAFE program by using an adjustment factor that is applied to credits when they are transferred between car and truck compliance categories. The CAFE adjustment factor accounts for two different influences that can cause the transfer of car and truck credits (expressed in tenths of a mpg), if left unadjusted, to potentially negate fuel reductions. First, mpg is not linear with fuel consumption, *i.e.,* a 1 mpg improvement above a standard will imply a different amount of actual fuel consumed depending on the level of the standard. Second, NHTSA's conversion corrects for the fact that the typical lifetime miles for cars is less than that for trucks, meaning that credits earned for cars and trucks are not necessarily equal. NHTSA's adjustment factor essentially converts credits into vehicle lifetime gallons to ensure preservation of fuel savings and the transfer credits on an equal basis, and then converts back to the statutorily-required credit units of tenths of a mile per gallon. To convert to gallons NHTSA's conversion must take into account the expected lifetime mileage for cars and trucks. Because EPA's standards are expressed on a CO_2 gram per mile basis, which is linear with fuel consumption, EPA's credit calculations do not need to account for the first issue noted above. However, EPA is accounting for the second issue by expressing credits when they are generated in total lifetime Megagrams (metric tons), rather than through the use of conversion factors that would apply at certain times. In this way credits may be freely exchanged between car and truck compliance categories without the need for adjustment. Additional detail regarding this approach, including a discussion of the vehicle lifetime mileage estimates for cars and trucks can be found in Section II*I.E.*5. A discussion of the derivation of the estimated vehicle lifetime miles traveled can be found in Chapter 4 of the Joint Technical Support Document.

A manufacturer that generates credits in a given year and vehicle category may use those credits in essentially four ways, although with some limitations. These provisions are very similar to those of other EPA averaging, banking, and trading programs. These provisions have the potential to reduce costs and compliance burden, and support the feasibility of the standards in terms of lead time and orderly redesign by a manufacturer, thus promoting and not reducing the environmental benefits of the program.

First, EPA proposed that the manufacturer must use any credits earned to offset any deficit that had accrued in the current year or in a prior model year that had been carried over to the current model year. NRDC commented that such a provision is necessary to prevent credit "shell games" from delaying the adoption of new technologies. EPA's Tier 2 program includes such a restriction, and EPA is applying an identical restriction to the GHG program. Simply stated, a manufacturer may not bank (or carry forward) credits if that manufacturer is also carrying a deficit. In such a case, the manufacturer is obligated to use any current model year credits to offset that deficit. Using current model year credits to offset a prior model year deficit is referred to in the CAFE program as credit carry-back. EPA's deficit carry-forward, or credit carry-back provisions are described further, below.

Second, after satisfying any needs to offset pre-existing deficits, remaining credits may be banked, or saved for use in future years. Credits generated in this program will be available to the manufacturer for use in any of the five model years after the model year in which they were generated, consistent with the CAFE program under EISA. This is also referred to as a credit carry-forward provision.

EPA received a number of comments regarding the credit carry-back and carry-forward provisions. Many supported the proposed consistency of these provisions with EISA and the flexibility provided by these provisions, and several offered qualified or tentative support. For example, NRDC encouraged EPA to consider further restrictions in the 2017 and later model years. Public Citizen expressed concern regarding the complexity of the program and how these provisions might obscure a straightforward determination of compliance in any given model year. At least two automobile manufacturers suggested modeling the program after California, which allows credits to be carried forward for three additional years following a discounting schedule.

For other new emission control programs, EPA has sometimes initially restricted credit life to allow time for the Agency to assess whether the credit program is functioning as intended. When EPA first offered averaging and

banking provisions in its light-duty emissions control program (the National Low Emission Vehicle Program), credit life was restricted to three years. The same is true of EPA's early averaging and banking program for heavy-duty engines. As these programs matured and were subsequently revised, EPA became confident that the programs were functioning as intended and that the standards were sufficiently stringent to remove the restrictions on credit life. EPA is therefore acting consistently with our past practice in finalizing reasonable restrictions on credit life in this new program. The Agency believes that a credit life of five years represents an appropriate balance between promoting orderly redesign and upgrade of the emissions control technology in the manufacturer's fleet and the policy goal of preventing large numbers of credits accumulated early in the program from interfering with the incentive to develop and transition to other more advanced emissions control technologies. As discussed below in Section III.C, early credits generated by a manufacturer are also be subject to the five year credit carry-forward restriction based on the year in which they are generated. This limits the effect of the early credits on the long-term emissions reductions anticipated to result from the new standards.

Third, the new program enables manufacturers to transfer credits between the two averaging sets, passenger cars and trucks, within a manufacturer. For example, credits accrued by over-compliance with a manufacturer's car fleet average standard may be used to offset debits accrued due to that manufacturer's not meeting the truck fleet average standard in a given year. EPA believes that such cross-category use of credits by a manufacturer provides important additional flexibility in the transition to emissions control technology without affecting overall emission reductions. Comments regarding the credit transfer provisions expressed general support, noting that it does not matter to the environment whether a gram of greenhouse gas is generated from a car or a truck. Additional comments regarding EPA's streamlined megagram approach and method of accounting for expected vehicle lifetime miles traveled are summarized in Section II*I.E.*

Finally, accumulated credits may be traded to another vehicle manufacturer. As with intra-company credit use, such inter-company credit trading provides flexibility in the transition to emissions control technology without affecting overall emission reductions. Trading credits to another vehicle manufacturer could be a straightforward process between the two manufacturers, but could also involve third parties that could serve as credit brokers. Brokers may not own the credits at any time. These sorts of exchanges are typically allowed under EPA's current emission credit programs, *e.g.,* the Tier 2 light-duty vehicle NO_X fleet average standard and the heavy-duty engine NO_X fleet average standards, although manufacturers have seldom made such exchanges. Comments generally reflected support for the credit trading flexibility, although some questioned the extent to which trading might actually occur. As noted above, comments regarding program transparency are addressed in Section II*I.E.*

If a manufacturer has accrued a deficit at the end of a model year—that is, its fleet average level failed to meet the required fleet average standard—the manufacturer may carry that deficit forward (also referred to credit carry-back) for a total of three model years after the model year in which that deficit was generated. EPA continues to believe that three years is an appropriate amount of time that gives the manufacturers adequate time to respond to a deficit situation but does not create a lengthy period of prolonged non-compliance with the fleet average standards.[186] As noted above, such a deficit carry-forward may only occur after the manufacturer has applied any banked credits or credits from another averaging set. If a deficit still remains after the manufacturer has applied all available credits, and the manufacturer did not obtain credits elsewhere, the deficit may be carried forward for up to three model years. No deficit may be carried into the fourth model year after the model year in which the deficit occurred. Any deficit from the first model year that remains after the third model year will constitute a violation of the condition on the certificate, which will constitute a violation of the Clean Air Act and will be subject to enforcement action.

The averaging, banking, and trading provisions are generally consistent with those included in the CAFE program, with a few notable exceptions. As with EPA's approach, CAFE allows five year carry-forward of credits and three year carry-back. Under CAFE, transfers of credits across a manufacturer's car and truck averaging sets are also allowed, but with limits established by EISA on the use of transferred credits. The amount of transferred credits that can be used in a year is limited, and transferred credits may not be used to meet the CAFE minimum domestic passenger car standard. CAFE allows credit trading, but again, traded credits cannot be used to meet the minimum domestic passenger car standard. EPA did not propose, and is not finalizing, these constraints on the use of transferred credits.

Additional details regarding the averaging, banking, and trading provisions and how EPA will implement these provisions can be found in Section II*I.E.*

5. CO_2 Temporary Lead-Time Allowance Alternative Standards

EPA proposed adopting a limited and narrowly prescribed option, called the Temporary Lead-time Allowance Alternative Standards (TLAAS), to provide additional lead time for a certain subset of manufacturers. As noted in the proposal, this option was designed to address two different situations where we project that more lead time is needed, based on the level of emissions control technology and emissions control performance currently exhibited by certain vehicles. One situation involves manufacturers who have traditionally paid CAFE fines instead of complying with the CAFE fleet average, and as a result at least part of their vehicle production currently has significantly higher CO_2 and lower fuel economy levels than the industry average. More lead time is needed in the program's initial years to upgrade these vehicles to meet the aggressive CO_2 emissions performance levels required by the final rule. The other situation involves manufacturers who have a limited line of vehicles and are therefore unable to average emissions performance across a full line of production. For example, some smaller volume manufacturers produce only vehicles with emissions above the corresponding CO_2 footprint target, and do not have other types of vehicles (that exceed their compliance targets) in their production mix with which to average. Often, these manufacturers also pay fines under the CAFE program rather than meeting the applicable CAFE standard. Because voluntary non-compliance through payment of civil penalties is impermissible for the GHG standards under the CAA, both of these types of manufacturers need additional lead time to upgrade vehicles and meet the standards. EPA proposed that this subset of manufacturers be allowed to

[186] EPA emission control programs that incorporate ABT provisions (*e.g.,* the Tier 2 program and the Mobile Source Air Toxics program) have provided this three-year deficit carry-forward provision for this reason. *See* 65 FR 6745 (February 10, 2000), and 71 FR 8427 (February 26, 2007).

produce up to 100,000 vehicles over model years 2012–2015 that would be subject to a somewhat less stringent CO_2 standard of 1.25 times the standard that would otherwise apply to those vehicles. Only manufacturers with total U.S. sales of less than 400,000 vehicles per year in MY 2009 would be eligible for this allowance. Those manufacturers would have to exhaust designated program flexibilities in order to be eligible, and credit generating and trading opportunities for the eligible vehicles would be restricted. *See* 74 FR 49522–224.

EPA is finalizing the optional TLAAS provisions, with certain limited modifications, so that these manufacturers can have sufficient lead time to meet the tougher MY 2016 GHG standards, while preserving consumer choice of vehicles during this time.[187] EPA is finalizing modified provisions to address the unique lead-time issues of smaller volume manufacturers. One provision involves additional flexibility under the TLAAS program for manufacturers below 50,000 U.S. vehicle sales, as discussed further in Section III.B.5.b below. Another provision defers the CO_2 standards for the smallest volume manufacturers, those below 5,000 U.S. vehicle sales, as discussed in Section III.B.6.

Comments from several manufacturers strongly supported the TLAAS program as critical to provide the lead time needed for manufacturers to meet the standards. Volkswagen commented that TLAAS is an important aspect of EPA's proposal and that it responds to the needs of some smaller manufacturers for additional lead time and flexibility under the CAA. Daimler Automotive Group commented that TLAAS is a critical element of the program and falls squarely within EPA's discretion to provide appropriate lead time to limited-line low-volume manufacturers. BMW also commented that TLAAS is needed because most of the companies with limited lines will have to meet a more stringent fleet standard by 2016 than full-line manufacturers because they sell "feature-dense" vehicles (as opposed to light-weight large wheel-base vehicles) and no pick-up trucks. BMW commented that their MY 2016 footprint-based standard is projected to be 4 percent more stringent than the fleet average standard of 250 g/mile. The Alliance of Automobile Manufacturers supported the flexibilities proposed by EPA, including TLAAS. As discussed in detail below, EPA received extensive comments from many smaller volume manufacturers that the proposed TLAAS program was insufficient to address lead time and feasibility issues they will face under the program.

In contrast, EPA also received comments from the Center for Biological Diversity opposing the TLAAS program, commenting that an exception for high performance vehicles is not allowed under EPCA or the CAA and that it rewards manufacturers that pay penalties under CAFE and penalizes those that have complied with CAFE. This commenter suggests that manufacturers could decrease vehicle mass or power output of engines, purchase credits from another manufacturer, or earn off-cycle credits. EPA responds to these comments below.

After carefully considering the public comments, EPA continues to believe that the TLAAS program is essential in providing necessary lead time and flexibility to eligible manufacturers in the early years of the standards. First, EPA believes that it is acting well within its legal authority in adopting the various TLAAS provisions. EPA is required to provide sufficient lead time for industry as a whole for standards under section 202(a)(1), which mandates that standards are to take effect only "after providing such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." Thus, although section 202(a)(1) does not explicitly authorize this or any other specific lead time provision, it affords ample leeway for EPA to craft provisions designed to provide adequate lead time, and to tailor those provisions as appropriate. We show below that the types of technology penetrations required for TLAAS-eligible vehicles in the program's earlier years raise critical issues as to adequacy of lead time. As discussed in the EPA feasibility analysis provided in Section III.D.6 and III.D.7 several manufacturers eligible for TLAAS are projected to face a compliance shortfall in MY 2016 without the TLAAS program, even with the full application of technologies assumed by the OMEGA Model, including hybrid use of up to 15 percent. These include BMW, Jaguar Land Rover, Daimler, Porsche, and Volkswagen In addition, the smaller volume manufacturers of this group (*i.e.,* Jaguar Land Rover and Porsche) face the greatest shortfall (see Table III.D.6–4). Even with TLAAS, these manufacturers will need to take technology steps to comply with standards above and beyond those of other manufacturers. These manufacturers have relatively few models with high baseline emissions and this flexibility allows them additional lead time to adapt to a longer term strategy of meeting the final standards within their vehicle redesign cycles.

Second, EPA has carefully evaluated other means of eligible manufacturers to meet the standards, such as utilizing available credit opportunities. Indeed, eligibility for the TLAAS, and for temporary deferral of regulation for very small volume manufacturers, is conditioned on first exhausting the various programmatic flexibilities including credit utilization. At the same time, a basic reason certain manufacturers are faced with special lead time difficulties is their inability to generate credits which can be then be averaged across their fleet because of limited product lines. And although purchasing credits is an option under the program, there are no guarantees that credits will be available. Historic practice in fact suggests that manufacturers do not sell credits to competitors. While some of the smaller manufacturers covered by the TLAAS program may be in a position to obtain credits, they are not likely to be available for the TLAAS manufacturers across the board in the volume needed to comply without the TLAAS provisions. At the same time the TLAAS provisions have been structured such that any credits that do become available would likely be used before a manufacturer would turn to the more restricted and limiting TLAAS provisions.

As discussed in Section III.C., off-cycle credits are available if manufacturers are able to employ new and innovative technologies not already in widespread use, which provide real-world emissions reductions not captured on the current test cycles. Further, these credits are eligible only for technologies that are newly introduced on just a few vehicle models, and are not yet in widespread use across the fleet. The magnitude of these credits are highly uncertain because they are based on new technologies, and EPA is not aware of any such technologies that would provide enough credits to bring these manufacturers into compliance without TLAAS lead time flexibility. Manufacturers first must develop these technologies and then demonstrate their emissions reductions capabilities, which will require lead time. Moreover, the technologies mentioned in the proposal which are the most likely to be eligible based on present knowledge, including solar panels and active

[187] *See* final regulations at 40 CFR 86.1818–12(e).

aerodynamics, are likely to provide only small incremental emissions reductions.

We agree with the comment that reducing vehicle mass or power are potential methods for reducing emissions that should be employed by TLAAS-eligible manufacturers to help them meet standards. However, based on our assessment of the lead time needed for these manufacturers to comply with the standards, especially given their more limited product offerings and higher baseline emissions, we believe that additional time is needed for them to come into compliance. EPA can permissibly consider the TLAAS and other manufacturers' lead time, cost, and feasibility issues in developing the primary standards and has discretion in setting the overall stringency of the standards to account for these factors. *Natural Resources Defense Council* v. *Thomas,* 805 F. 2d 410, 421 (DC Cir. 1986) (even when implementing technology-forcing provisions of Title II, EPA may base standards on an industry-wide capability "taking into account the broad spectrum of technological capabilities as well as cost and other factors" across the industry). EPA is not legally required to set standards that drive these manufacturers or their products out of the market, nor is EPA legally required to preserve a certain product line or vehicle characteristic. Instead EPA has broad discretion under section 202(a)(1) to set standards that reasonably balance lead time needs across the industry as a whole and vehicle availability. In this rulemaking, EPA has consistently emphasized the importance of obtaining very significant reductions in emissions of GHGs from the industry as a whole, and obtaining those reductions through regulatory approaches that avoid limiting the ability of manufacturers to provide model availability and choice for consumers. The primary mechanism to achieve this is the use of a footprint attribute curve in setting the increasingly stringent model year standards. The TLAAS provisions are a temporary and strictly limited modification to these attribute standards allowing the TLAAS manufacturers lead time to upgrade their product lines to meet the 2016 GHG standards. EPA has made a reasonable choice here to preserve the overall stringency of the program, and to afford increased flexibility in the program's early years to a limited class of vehicles to assure adequate lead time for all manufacturers to meet the strictest of the standards by MY 2016.

As described below, EPA also carefully considered the comments of smaller volume manufacturers and believes additional lead time is needed. Therefore, EPA is finalizing the TLAAS program, similar to that proposed, and is also finalizing an additional TLAAS option for manufacturers with annual U.S. sales under 50,000 vehicles. EPA is also deferring standards for manufacturers with annual sales of less than 5,000 vehicles. These new TLAAS provisions and the small volume manufacturer deferment are discussed in detail below and in Section III.B.6.

a. Base TLAAS Program

As proposed, EPA is establishing the TLAAS program for a specified subset of manufacturers. This alternative standard is an option only for manufacturers with total U.S. sales of less than 400,000 vehicles per year, using 2009 model year final sales numbers to determine eligibility for these alternative standards. For manufacturers with annual U.S. sales of 50,000 or more but less than 400,000 vehicles, EPA is finalizing the TLAAS program largely as proposed. EPA proposed that under the TLAAS, qualifying manufacturers would be allowed to produce up to 100,000 vehicles that would be subject to a somewhat less stringent CO_2 standard of 1.25 times the standard that would otherwise apply to those vehicles. This 100,000 volume is not an annual limit, but is an absolute limit for the total number of vehicles which can use the TLAAS program over the model years 2012–2015. Any additional production would be subject to the same standards as any other manufacturer. EPA is retaining this limit for manufacturers with baseline MY 2009 sales of 50,000 but less than 400,000. In addition, as discussed further below, EPA is finalizing a variety of restrictions on the use of the TLAAS program, to ensure that only manufacturers who need more lead time for the kinds of reasons noted above are likely to use the program.

Volvo and Saab commented that basing eligibility strictly on MY 2009 sales would be problematic for these companies, which are being spun-off from larger manufacturer in the MY 2009 time frame due to the upheaval in the auto industry over the past few years. These commenters offered a variety of suggestions including using MY 2010 as the eligibility cut-off instead of MY 2009, reassessing eligibility on a year-by-year basis as corporate relationships change, or allowing companies separated from a larger parent company by the end of 2010 to use their MY 2009 branded U.S. sales to qualify for TLAAS. In response to these concerns, EPA recognizes that these companies currently being sold by larger manufacturers will share the same characteristics of the manufacturers for which the TLAAS program was designed. As newly independent companies, these firms will face the challenges of a narrower fleet of vehicles across which to average, and may potentially be in a situation, at least in the first few years, of paying fines under CAFE. Lead time concerns in the program's initial years are in fact particularly acute for these manufacturers since they will be newly independent, and thus would have even less of an opportunity to modify their vehicles to meet the standards. Therefore, EPA is finalizing an approach that allows manufacturers with U.S. "branded sales" in MY 2009 under the umbrella of a larger manufacturer that become independent by the end of calendar year 2010 to use their MY 2009 branded sales to qualify for TLAAS eligibility. In other words, a manufacturer will be eligible for TLAAS if it produced vehicles for the U.S. market in MY 2009, its branded sales of U.S. vehicles were less than 400,000 in MY 2009 but whose vehicles were sold as part of a larger manufacturer, and it becomes independent by the end of calendar year 2010, if the new entity has sales below 400,000 vehicles.

Manufacturers with no U.S. sales in MY 2009 are not eligible to utilize the TLAAS program. EPA does not support the commenter's suggestion of a year-by-year eligibility determination because it opens up the TLAAS program to an unknown universe of potential eligible manufacturers, with the potential for gaming. EPA does not believe the TLAAS program should be available to new entrants to the U.S. market since these manufacturers are not transitioning from the CAFE regime which allows fine paying as a means of compliance to a CAA regime which does not, and hence do not present the same types of lead time issues. Manufacturers entering the U.S. market for the first time thus will be fully subject to the GHG fleet-average standards.

As proposed, manufacturers qualifying for TLAAS will be allowed to meet slightly less stringent standards for a limited number of vehicles. An eligible manufacturer could have a total of up to 100,000 units of cars or trucks combined over model years 2012–2015 which would be subject to a standard 1.25 times the standard that would otherwise apply to those vehicles under the primary program. In other words, the footprint curves upon which the individual manufacturer standards for the TLAAS fleets are based would be

less stringent by a factor of 1.25 for up to 100,000 of an eligible manufacturer's vehicles for model years 2012–2015. EPA believes that 100,000 units over four model years achieves an appropriate balance, as the emissions impact is quite small, but does provide companies with necessary lead time during MY 2012–2015. For example, for a manufacturer producing 400,000 vehicles per year, this would be a total of up to 100,000 vehicles out of a total production of up to 1.6 million vehicles over the four year period, or about 6 percent of total production.

Finally, for manufacturers of 50,000 but less than 400,000 U.S. vehicles sales during 2009, the program expires at the end of MY 2015 as proposed. EPA continues to believe the program reasonably addresses a real world lead time constraint for these manufacturers, and does so in a way that balances the need for more lead time with the need to minimize any resulting loss in potential emissions reductions. In MY 2016, the TLAAS option thus ends for all but the smallest manufacturers opting for TLAAS, and manufacturers must comply with the same CO_2 standards as non-TLAAS manufacturers; under the CAFE program companies would continue to be allowed to pay civil penalties in lieu of complying with the CAFE standards. However, because companies must meet both the CAFE standards and the EPA CO_2 standards, the National Program will have the practical impact of providing a level playing field for almost all except the smallest companies beginning in MY 2016. This option, even with the modifications being adopted, thereby results in more fuel savings and CO_2 reductions than would be the case under the CAFE program by itself.

EPA proposed that manufacturers meeting the cut-point of below 400,000 sales for MY 2009 but whose U.S. sales grew above 400,000 in any subsequent model years would remain eligible for the TLAAS program. The total sales number applies at the corporate level, so if a corporation owns several vehicle brands the aggregate sales for the corporation must be used. These provisions would help prevent gaming of the provisions through corporate restructuring. Corporate ownership or control relationships would be based on determinations made under CAFE for model year 2009 (except in the case of a manufacturer being sold by a larger manufacturer by the end of calendar year 2010, as discussed above). In other words, corporations grouped together for purposes of meeting CAFE standards in MY 2009, must be grouped together for determining whether or not they are eligible under the 400,000 vehicle cut point. EPA is finalizing these provisions with the following modifications. EPA recognizes the dynamic corporate restructuring occurring in the auto industry and believes it is important to structure additional provisions to ensure there is no ability to game the TLAAS provisions and to ensure no unintended loss of feasible environmental benefits. Therefore, EPA is finalizing a provision that if two or more TLAAS eligible companies are later merged, with one company having at least 50% or more ownership of the other, or if the companies are combined for the purposes of EPA certification and compliance, the TLAAS allotment is not additive. The merged company will only be allowed the allotment for what is considered the parent company under the new corporate structure. Further, if the newly formed company would have exceeded the 400,000 vehicle cut point based on combined MY 2009 sales, the new entity is not eligible for TLAAS in the model year following the merger. EPA believes that such mergers and acquisitions would give the parent company additional opportunities to average across its fleet, eliminating one of the primary needs for the TLAAS program. This provision will not be retroactive and will not affect the TLAAS program in the year of the merger or for previous model years. EPA believes these additional provisions are essential to ensure the integrity of the TLAAS program by ensuring that it does not become available to large manufacturers through mergers and acquisitions.

As proposed, the TLAAS vehicles will be separate car and truck fleets for that model year and subject to the less stringent footprint-based standards of 1.25 times the primary fleet average that would otherwise apply. The manufacturer will determine what vehicles are assigned to these separate averaging sets for each model year. As proposed, credits from the primary fleet average program can be transferred and used in the TLAAS program. Credits generated within the TLAAS program may also be transferred between the TLAAS car and truck averaging sets (but not to the primary fleet as explained below) for use through MY 2015 when the TLAAS ends.

EPA is finalizing a number of restrictions on credit trading within the TLAAS program, as proposed. EPA is concerned that if credit use in the TLAAS program were unrestricted, some manufacturers would be able to place relatively clean vehicles in the TLAAS fleet, and generate credits for the primary program fleet. First, credits generated under TLAAS may not be transferred or traded to the primary program. Therefore, any unused credits under TLAAS expire after model year 2015 (or 2016 for manufacturers with annual sales less than 50,000 vehicles). EPA believes that this is necessary to limit the program to situations where it is needed and to prevent the allowance from being inappropriately transferred to the long-term primary program where it is not needed. EPA continues to believe this provision is necessary to prevent credits from being earned simply by removing some high-emitting vehicles from the primary fleet. Absent this restriction, manufacturers would be able to choose to use the TLAAS for these vehicles and also be able to earn credits under the primary program that could be banked or traded under the primary program without restriction. Second, EPA is finalizing two additional restrictions on the use of TLAAS by requiring that for any of the 2012–2015 model years for which an eligible manufacturer would like to use the TLAAS, the manufacturer must use two of the available flexibilities in the GHG program first in order to try and comply with the primary standard before accessing the TLAAS—*i.e.,* TLAAS eligibility is not available to those manufacturers with other readily-available means of compliance. Specifically, before using the TLAAS a manufacturer must: (1) Use any banked emission credits from previous model years; and, (2) use any available credits from the companies' car or truck fleet for the specific model year (*i.e.,* use credit transfer from cars to trucks or from trucks to cars). That is, before using the TLAAS for either the car fleet or the truck fleet, the company must make use of any available intra-manufacturer credit transfers first. Finally, EPA is restricting the use of banking and trading between companies of credits in the primary program in years in which the TLAAS is being used. No such restriction is in place for years when the TLAAS is not being used.

EPA received several comments in support of these credit restrictions for the TLAAS program. On the negative side, one manufacturer commented that the restrictions were not necessary, saying that the restrictions are counter to providing manufacturers with flexibility and that the emissions impacts estimated by EPA due to the full use of the program are small. However, EPA continues to believe that the restrictions are appropriate to prevent the potential gaming described above, and to ensure that the TLAAS

program is used only by those manufacturers that have exhausted all other readily available compliance mechanisms and consequently have legitimate lead time issues.

One manufacturer commented that the program is restrictive due to the requirement that manufacturers must decide prior to the start of the model year whether or not and how to use the TLAAS program. EPA did not intend for manufactures to have to make this determination prior to the start of the model year. EPA expects that manufacturers will provide a best estimate of their plans to use the TLAAS program during certification based on projected model year sales, as part of their pre model year report projecting their overall plan for compliance (as required by § 600.514–12 of the regulations). Manufacturers must determine the program's actual use at the end of the model year during the process of demonstrating year-end compliance. EPA recognizes that depending on actual sales for a given model year, a manufacturer's use of TLAAS may change from the projections used in the pre-model year report.

b. Additional TLAAS Flexibility for Manufacturers With MY 2009 Sales of Less Than 50,000 Vehicles

EPA received extensive comments that the TLAAS program would not provide sufficient lead time and flexibility for companies with sales of significantly less than 400,000 vehicles. Jaguar Land Rover, which separated from Ford in 2008, commented that it sells products only in the middle and large vehicle segments and that its total product range remains significantly more limited in terms of segments in comparison with its main competitors which typically have approximately 75% of their passenger car fleet in the small and middle segments. Jaguar Land Rover also commented that it has already committed $1.3 billion of investment to reducing CO_2 from its vehicle fleet and that this investment is already delivering a range of technologies to improve the fuel economy and CO_2 performance of its existing vehicles. Jaguar Land Rover submitted confidential business information regarding their future product plans and emissions performance capabilities of their vehicles which documents their assertions.

Porsche commented that their passenger car footprint-based standard is the most stringent of any manufacturer and this, combined with their high baseline emissions level, means that it would need to reduce emissions by about 10 percent per year over the 2012–2016 time-frame. Porsche commented that such reductions were not feasible. They commented that their competitors will be able to continue to offer their full line of products because the competitors have a wider range of products with which to average. Porsche further commented that their product development cycles are longer than larger competitors. Porsche recommended for small limited line niche manufacturers that EPA require an annual 5 percent reduction in emissions from baseline up to a total reduction of 25 percent, or to modify the TLAAS program to require such reductions. Porsche noted that this percent reduction would be in line with the average emissions reductions required for larger manufacturers.

EPA also received comments from several very small volume manufacturers that, even with the TLAAS program, the proposed standards are not feasible for them, certainly not in the MY 2012–2016 MY time frame. These manufacturers included Aston Martin, McLaren, Lotus, and Ferrari. Their comments consistently focused on the need for separate, less stringent standards for small volume manufacturers. The manufacturers commented that they are willing to make progress in reducing emissions, but that separate, less-stringent small volume manufacturer standards are needed for them to remain in the U.S. market. The commenters note that their product line consists entirely of high end sports cars. Most of these manufacturers have only a few vehicle models, have annual sales on the order of a few hundred to a few thousand vehicles, and several have average baseline CO_2 emissions in excess of 500 g/mile—nearly twice the industry average. McLaren commented that its vehicle model to be introduced in MY 2011 will have class leading CO_2 performance but that it would not be able to offer the vehicle in the U.S. market because it does not have other vehicle models with which to average. Similarly, Aston Martin commented that it is of utmost importance that it is not required to reduce emissions significantly more than equivalent vehicles from larger manufacturers, which would render them uncompetitive due purely to the size of its business. Manufacturers also noted that they launch new products less frequently than larger manufacturers (*e.g.,* Ferrari noted that their production period for models is 7–8 years), and that suppliers serve large manufacturers first because they can buy in larger volumes. Some manufacturers also noted that they would be willing to purchase credits at a reasonable price, but they believed that credit availability from other manufacturers was highly unlikely due to the competitive nature of the auto industry. Several of these manufacturers provided confidential business information indicating their preliminary plans for reducing GHG emissions across their product lines through MY 2016 and beyond.

The Association of International Automobile Manufacturers (AIAM) also commented that, because of their essential features, vehicles produced by small volume manufacturers would not be able to meet the proposed greenhouse gas standards. AIAM commented that "while it is possible that these small volume manufacturers (SVMs) might be able to comply with greenhouse gas standards by purchasing credits from other manufacturers, this is far too speculative a solution. The market for credits is unpredictable at this point. Other than exiting the U.S. market, therefore, the only other possible solution for an independent SVM would be to sell an equity interest in the company to a larger, full-line manufacturer, so that the emissions of the luxury vehicles could be averaged in with the much larger volume of other vehicles produced by the major manufacturer. This cannot possibly be the outcome EPA intends, especially when measured against the minimal, if any, environmental benefit that would result." AIAM commented further that "there is ample legal authority for EPA to provide SVMs a more generous lead-time allowance or an alternative standard. Indeed, EPA recognizes such authority in the proposal for a small entity exemption (for those companies defined under the Small Business Administration's regulations), *see* 74 FR at 49574, and in the TLAAS. These provisions are consistent with previous EPA rulemaking under the Clean Air Act which offer relief to SVMs." AIAM recommended deferring standards for SVMs to a future rulemaking, providing EPA with adequate time to assess relevant product plans and technology feasibility information from SVMs, conduct the necessary reviews and modeling that may be needed, and consult with the stakeholders.

These commenters noted that standards for the smallest manufacturers were deferred in the California program until MY 2016 and that California's program would have established standards for small volume manufacturers in MY 2016 at a level that would be technologically feasible.

The commenters also suggested that California's approach is similar to the approach being taken by EPA for small business entities. Further, these commenters noted that in Tier 2 and other light-duty vehicle programs, EPA has allowed small volume manufacturers (SVMs) until the end of the phase-in period to comply with standards. The commenters recommended that EPA should defer standards for SVMs, and conduct a future rulemaking to establish appropriate standards for SVMs starting in model year 2016. Alternatively, some manufacturers recommended establishing much less stringent standards for SVMs as part of the current rulemaking.

In summary, the manufacturers commented that their range of products was insufficient to allow them to meet the standards in the time provided, even with the proposed TLAAS program. Many of these manufacturers have baseline emissions significantly higher than their larger-volume competitors, and thus the CO_2 reductions required from baseline under the program are larger for many of these companies than for other companies. Although they are investing substantial resources to reduce CO_2 emissions, they believe that they will not be able to achieve the standards under the proposed approach.

EPA also received comments urging us not to expand the TLAAS program. The commenters are concerned about the loss of benefits that would occur with any expansion.

EPA has considered the comments carefully and concludes that additional flexibility is needed for these companies. After assessing the issues raised by commenters, EPA believes there are two groups of manufacturers that need additional lead time. The first group includes manufacturers with annual U.S. sales of less than 5,000 vehicles per year. Standards for these small volume manufacturers are being deferred until a future rulemaking in the 2012 timeframe, as discussed in Section III.B.6, below. This will allow EPA to determine the appropriate level of standards for these manufacturers, as well as the small business entities, at a later time. The second group includes manufacturers with MY 2009 U.S. sales of less than 50,000 vehicles but above the 5,000 vehicle threshold being established for small volume manufacturers. EPA has selected a cut point of 50,000 vehicles in order to limit the additional flexibility to only the smaller manufacturers with much more limited product lines over which to average. EPA has tailored these provisions as narrowly as possible to provide additional lead time only as needed by these smaller manufacturers. We estimate that the TLAAS program, including the changes below will result in a total decrease in overall emissions reductions of about one percent of the total projected GHG program emission benefits. These estimates are provided in RIA Chapter 5 Appendix A.

For some of the companies, the reduction from baseline CO_2 emissions required to meet the standards is clearly greater than for other TLAAS-eligible manufacturers. Compared with other TLAAS-eligible manufacturers, these companies also have more limited fleets across which to average the standards. Some companies have only a few vehicle models all of a similar utility, and thus their averaging abilities are extremely limited posing lead time issues of greater severity than other TLAAS-eligible manufacturers. EPA's feasibility analysis provided in Section III.D., shows that these companies face a compliance shortfall significantly greater than other TLAAS companies (see Table III.D.6–4). This shortfall is primarily due to their narrow product lines and more limited ability to average across their vehicle fleets. In addition, with fewer models with which to average, there is a higher likelihood that phase-in requirements may conflict with normal product redesign cycles.

Therefore, for manufacturers with MY 2009 U.S. sales of less than 50,000 vehicles, EPA is finalizing additional TLAAS compliance flexibility through model year 2016. These manufacturers will be allowed to place up to 200,000 vehicles in the TLAAS program in MY 2012–2015 and an additional 50,000 vehicles in MY 2016. To be eligible for the additional allotment above the base TLAAS level of 100,000 vehicles, manufacturers must annually demonstrate that they have diligently made a good faith effort to purchase credits from other manufacturers in order to comply with the base TLAAS program, but that sufficient credits were not available. Manufacturers must secure credits to the extent they are reasonably available from other manufacturers to offset the difference between their emissions reductions obligations under the base TLAAS program and the expanded TLAAS program. Manufacturers must document their efforts to purchase credits as part of their end of year compliance report. All other aspects of the TLAAS program including the 1.25x adjustment to the standards and the credits provision restrictions remain the same as described above for the same reasons. This will still require the manufacturers to reduce emissions significantly in the 2012–2016 time-frame and to meet the final emissions standards in MY 2017. The standards remain very challenging for these manufacturers but these additional provisions will allow them the necessary lead time for implementing their strategy for compliance with the final, most stringent standards.

The eligibility limit of 50,000 vehicles will be treated in a similar way as the 400,000 vehicle eligibility limit is treated, as described above. Manufacturers with model year 2009 U.S. sales of less than 50,000 vehicles are eligible for the expanded TLAAS flexibility. Manufacturers whose sales grow in later years above 50,000 vehicles without merger or acquisition will continue to be eligible for the expanded TLAAS program. However, manufacturers that exceed the 50,000 vehicle limit through mergers or acquisitions will not be eligible for the expanded TLAAS program in the model year following the merger or acquisition, but may continue to be eligible for the base TLAAS program if the MY 2009 sales of the new company would have been below the 400,000 vehicle eligibility cut point. The use of TLAAS by all the entities within the company in years prior to the merger must be counted against the 100,000 vehicle limit of the base program. If the 100,000 vehicle limit has been exceeded, the company is no longer eligible for TLAAS.

6. Deferment of CO_2 Standards for Small Volume Manufacturers With Annual Sales Less Than 5,000 Vehicles

In the proposal, in the context of the TLAAS program, EPA recognized that there would be a wide range of companies within the eligible manufacturers with sales less than 400,000 vehicles in model year 2009. As noted in the proposal, some of these companies, while having relatively small U.S. sales volumes, are large global automotive firms, including companies such as Mercedes and Volkswagen. Other companies are significantly smaller niche firms, with sales volumes closer to 10,000 vehicles per year worldwide, such as Aston Martin. EPA anticipated that there is a small number of such smaller volume manufacturers, which may face greater challenges in meeting the standards due to their limited product lines across which to average. EPA requested comment on whether the proposed TLAAS program would provide sufficient lead-time for these smaller firms to incorporate the technology needed to comply with the proposed GHG standards. *See* 74 FR at 49524.

EPA received comments from several very small volume manufacturers that the TLAAS program would not provide sufficient lead time, as described above. EPA agrees with comments that the standards would be extremely challenging and potentially infeasible for these small volume manufacturers, absent credits from other manufacturers, and that credit availability at this point is highly uncertain—although these companies are planning to introduce significant GHG-reducing technologies to their product lines, they are still highly unlikely to meet the standards by MY 2016. Because the products produced by these manufacturers are so unique, these manufacturers were not included in EPA's OMEGA modeling assessment of the technology feasibility and costs to meet the proposed standards. As noted above, these manufacturers have only a few models and have very high baseline emissions. TLAAS manufacturers are projected to be required to reduce emissions by up to 39%, whereas SVMs in many cases would need to cut their emissions by more than half to comply with MY 2016 standards.

Given the unique feasibility issues raised for these manufacturers, EPA is deferring establishing CO_2 standards for manufacturers with U.S. sales of less than 5,000 vehicles.[188] This will provide EPA more time to consider the unique challenges faced by these manufacturers. EPA expects to conduct this rulemaking in the 2012 timeframe. The deferment only applies to CO_2 standards and SVMs must meet N_2O and CH_4 standards. EPA plans to set standards for these manufacturers as part of a future rulemaking in the next 18 months. This future rulemaking will allow EPA to fully examine the technologies and emissions levels of vehicles offered by small manufacturers and to determine the potential emissions control capabilities, costs, and necessary lead time. This timing may also allow a credits market to develop, so that EPA may consider the availability of credits during the rulemaking process. See *State of Mass.* v. *EPA,* 549 U.S. at 533 (EPA retains discretion as to timing of any regulations addressing vehicular GHG emissions under section 202(a)(1)). We expect that standards would begin to be implemented in the MY 2016 timeframe. This approach is consistent with that envisioned by California for these manufacturers. EPA estimates that eligible small volume manufacturers currently comprise less than 0.1 percent of the total light-duty vehicle sales in the U.S., and therefore the deferment will have a very small impact on the GHG emissions reductions from the standards.

In addition to the 5,000 vehicle per year cut point, to be eligible for deferment each year, manufacturers must also demonstrate due diligence in attempting to secure credits from other manufacturers. Manufacturers must make a good faith effort to secure credits to the extent they are reasonably available from other manufacturers to offset the difference between their baseline emissions and what their obligations would be under the TLAAS program starting in MY 2012.

Eligibility will be determined somewhat differently compared to the TLAAS program. Manufacturers with either MY 2008 or MY 2009 U.S. sales of less than 5,000 vehicles will be initially eligible. This includes "branded sales" for companies that sold vehicles under a larger manufacturer but has become independent by the end of calendar year 2010. EPA is including MY 2008 as well as MY 2009 because some manufacturers in this market segment have such limited sales that they often drop in and out of the market from year to year.

In determining eligibility, manufacturers must be aggregated according to the provisions of 40 CFR 86.1838–01(b)(3), which requires the sales of different firms to be aggregated in various situations, including where one firm has a 10% or more equity ownership of another firm, or where a third party has a 10% or more equity ownership of two or more firms. EPA received public comment from a manufacturer requesting that EPA should allow a manufacturer to apply to EPA to establish small volume manufacturer status based on the independence of its research, development, testing, design, and manufacturing from another firm that may have an ownership interest in that manufacturer. EPA has reviewed this comment, but is not finalizing such a provision at this time. EPA believes that this issue likely presents some competitive issues, which we would like to be fully considered through the public comment process. Therefore, EPA plans to consider this issue and seek public comments in our proposal for small volume manufacturer CO_2 standards, which we expect to complete within 18 months.

To remain eligible for the deferral from standards, the rolling average of three consecutive model years of sales must remain below 5,000 vehicles. EPA is establishing the 5,000 vehicle threshold to allow for some sales growth by SVMs, as SVMs typically have annual sales of below 2,000 vehicles. However, EPA wants to ensure that standards for as few vehicles as possible are deferred and therefore believes it is appropriate that manufacturers with U.S. sales growing to above 5,000 vehicles per year be required to comply with standards (including TLAAS, as applicable). Manufacturers with unusually strong sales in a given year would still likely remain eligible, based on the three year rolling average. However, if a manufacturer takes steps to expand in the U.S. market on a permanent basis such that they consistently sell more than 5,000 vehicles per year, they must meet the TLAAS standards. EPA believes a manufacturer will be able to consider these provisions, along with other factors, in its planning to significantly expand in the U.S. market.

For manufacturers exceeding the 5,000 vehicle rolling average through mergers or acquisitions of other manufacturers, those manufacturers will lose eligibility in the MY immediately following the last year of the rolling average. For manufacturers exceeding this level through sales growth, but remaining below a 50,000 vehicle threshold, the manufacturer will lose eligibility for the deferred standards in the second model year following the last year of the rolling average. For example, if the rolling average of MYs 2009–2011 exceeded 5,000 vehicles but was below 50,000 vehicles, the manufacturer would not be eligible for the deferred standards in MY 2013. For manufacturers with a 3-year rolling average exceeding 50,000 vehicles, the manufacturer would lose eligibility in the MY immediately following the last model year in the rolling average. For example, if the rolling average of MYs 2009–2011 exceeded 50,000 vehicles, the manufacturer would not be eligible for the deferred standards in MY 2012. Such manufacturers may continue to be eligible for TLAAS, or the expanded TLAAS program, per the provisions described above. EPA believes these provisions are needed to ensure that the SVM deferment remains targeted to true small volume manufacturers and does not become available to larger manufacturers through mergers or acquisitions. EPA is including the 50,000 vehicle criteria to differentiate between manufacturers that may slowly gain more sales and manufacturers that have taken major steps to significantly increase their presence in the U.S. market, such as by introducing new vehicle models. EPA believes manufacturers selling more than 50,000

[188] *See* final regulations at 40 CFR 86.1801–12(k).

vehicles should not be able to take advantage of the deferment, as they should be able to meet the applicable TLAAS standards through averaging across their larger product line.

EPA is requiring that potential SVMs submit a declaration to EPA containing a detailed written description of how the manufacturer qualifies as a small volume manufacturer. The declaration must contain eligibility information including MY 2008 and 2009 U.S. sales, the last three completed MYs sales information, detailed information regarding ownership relationships with other manufacturers, and documentation of efforts to purchase credits from other manufacturers. Because such manufacturers are not automatically exempted from other EPA regulations for light-duty vehicles and light-duty trucks, entities are subject to the greenhouse gas control requirements in this program until such a declaration has been submitted and approved by EPA. The declaration must be submitted annually at the time of vehicle emissions certification under the EPA Tier 2 program, beginning in MY 2012.

7. Nitrous Oxide and Methane Standards

In addition to fleet-average CO_2 standards, as proposed, EPA is establishing separate per-vehicle standards for nitrous oxide (N_2O) and methane (CH_4) emissions.[189] The agency's intention is to set emissions standards that act to cap emissions to ensure that future vehicles do not increase their N_2O and CH_4 emissions above levels typical of today's vehicles. EPA proposed to cap N_2O at a level of 0.010 g/mi and to cap CH_4 at a level of 0.03 g/mi. Both of these compounds are more potent contributors to global warming than CO_2; N_2O has a global warming potential, or GWP, of 298 and CH_4 has a GWP of 25.[190]

EPA received many comments on the proposed N_2O and CH_4 standards. A range of stakeholders supported the proposed approach of "cap" standards and the proposed emission levels, including most states and environmental organizations that addressed this topic, and the Manufacturers of Emissions Control Association. These commenters stated that EPA needs to address all mobile GHGs under the Clean Air Act, and N_2O and CH_4 are both more potent contributors to global warming than CO_2. The Center for Biological Diversity commented that in light of the potency of these GHGs, EPA should develop standards which reduce emissions over current levels and that EPA had not analyzed either the technologies or the costs of doing so. EPA discusses these comments and our responses below and in the Response to Comments Document.

Auto manufacturers generally did not support standards for these GHGs, stating that the levels of these GHGs from current vehicles are too small to warrant standards at this time. These commenters also stated that if EPA were to proceed with "cap" standards, the stringency of the proposed levels could restrict the introduction of some new technologies. Commenters specifically raised this concern with the examples of diesel and lean-burn gasoline for N_2O, or natural gas and ethanol fueled vehicles for CH_4. Only one manufacturer, Volkswagen, submitted actual test data to support these claims; very limited emission data on two concept vehicles—a CNG vehicle and a flexible-fuel vehicle—indicated measured emission levels near or above the proposed standards, but included no indication of whether any technological steps had been taken to reduce emissions below the cap levels. Many commenters support an approach of establishing a CO_2-equivalent standard, where N_2O and CH_4 could be averaged with CO_2 emissions to result in an overall CO_2-equivalent compliance value, similar to the approach California has used for its GHG standards [191] Under such an approach, the auto industry commenters supported using a default value for N_2O emissions in lieu of a measured test value. Several auto manufacturers also had concerns that a new requirement to measure N_2O would require significant equipment and facility upgrades and would create testing challenges with new measurement equipment with which they have little experience.

EPA has considered these comments and is finalizing the cap standards for N_2O and CH_4 as proposed. EPA agrees with the NGO, State, and other commenters that light-duty vehicle emissions are small but important contributors to the U.S. N_2O and CH_4 inventories, and that in the absence of a limitation, the potential for significant emission increases exists with the evolution of new vehicle and engine technologies. (Indeed, the industry commenters concede as much in stating that they are contemplating introducing vehicle technologies that could result in emissions exceeding the cap standard levels). EPA also believes that in most cases N_2O and CH_4 emissions from light-duty vehicles will remain well below the cap standards. Therefore, we are setting cap standards for these GHGs at the proposed levels. However, as described below, the agency is incorporating several provisions intended to address industry concerns about technological feasibility and leadtime, including an optional CO_2-equivalent approach and, for N_2O, more leadtime before testing will be required to demonstrate compliance with the emissions standard (in interim, manufacturers may certify based on a compliance statement based on good engineering judgment).

a. Nitrous Oxide (N_2O) Exhaust Emission Standard

As stated above, N_2O is a global warming gas with a high global warming potential.[192] It accounts for about 2.3% of the current greenhouse gas emissions from cars and light trucks.[193] EPA is setting a per-vehicle N_2O emission standard of 0.010 g/mi, measured over the traditional FTP vehicle laboratory test cycles. The standard will become effective in model year 2012 for all light-duty cars and trucks. The standard is designed to prevent increases in N_2O emissions from current levels; *i.e.,* it is a no-backsliding standard.

N_2O is emitted from gasoline and diesel vehicles mainly during specific catalyst temperature conditions conducive to N_2O formation. Specifically, N_2O can be generated during periods of emission hardware warm-up when rising catalyst temperatures pass through the temperature window when N_2O formation potential is possible. For current Tier 2 compatible gasoline engines with conventional three-way catalyst technology, N_2O is not generally produced in significant amounts because the time the catalyst spends at the critical temperatures during warm-up is short. This is largely due to the need to quickly reach the higher temperatures necessary for high catalyst efficiency to achieve emission compliance for criteria pollutants. As several auto manufacturer comments noted, N_2O is a more significant concern with diesel vehicles, and potentially future gasoline lean-burn engines, equipped with advanced catalytic NO_X

[189] *See* final regulations at 40 CFR 86.1818–12(f).

[190] The global warming potentials (GWP) used in this rule are consistent with the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4).

[191] California Environmental Protection Agency Air Resources Board, Staff Report: Initial Statement of Reasons for Proposed Rulemaking Public Hearing To Consider Adoption of Regulations To Control Greenhouse Gas Emissions From Motor Vehicles, August 6, 2004.

[192] N_2O has a GWP of 298 according to the IPCC Fourth Assessment Report (AR4).

[193] *See* RIA Chapter 2.

emissions control systems. In the absence of N_2O emission standards, these systems could be designed in a way that emphasizes efficient NO_X control while at the same time allowing the formation of significant quantities of N_2O. Excess oxygen present in the exhaust during lean-burn conditions in diesel or lean-burn gasoline engines equipped with these advanced systems can favor N_2O formation if catalyst temperatures are not carefully controlled. Without specific attention to controlling N_2O emissions in the development of such new NO_X control systems, vehicles could have N_2O emissions many times greater than are emitted by current gasoline vehicles.

EPA is setting an N_2O emission standard that the agency believes will be met by current-technology gasoline vehicles at essentially no cost. As just noted, N_2O formation in current catalyst systems occurs, but the emission levels are relatively low, because the time the catalyst spends at the critical temperatures during warm-up when N_2O can form is short. At the same time, EPA believes that the standard will ensure that the design of advanced NO_X control systems, especially for future diesel and lean-burn gasoline vehicles, will control N_2O emission levels. While current NO_X control approaches used on current Tier 2 diesel vehicles do not tend to favor the formation of N_2O emissions, EPA believes that this N_2O standard will discourage new emission control designs that achieve criteria emissions compliance at the cost of increased N_2O emissions. Thus, the standard will cap N_2O emission levels, with the expectation that current gasoline and diesel vehicle control approaches that comply with the Tier 2 vehicle emission standards for NO_X will not increase their emission levels, and that the cap will ensure that future vehicle designs will be appropriately controlled for N_2O emissions.

The level of the N_2O standard is approximately two times the average N_2O level of current gasoline passenger cars and light-duty trucks that meet the Tier 2 NO_X standards. EPA has not previously regulated N_2O emissions, and available data on current vehicles is limited. However, EPA derived the standard from a combination of emission factor values used in modeling light duty vehicle emissions and limited recent EPA test data.[194] [195] Because the standard represents a level 100 percent higher than the average current N_2O level, we continue to believe that most if not all Tier 2 compliant gasoline and diesel vehicles will easily be able to meet the standards. Manufacturers typically use design targets for NO_X emission levels of about 50% of the standard, to account for in-use emissions deterioration and normal testing and production variability, and EPA expects that manufacturers will use a similar approach for N_2O emission compliance. EPA did not propose and is not finalizing a more stringent standard for current vehicles because we believe that the stringent Tier 2 program and the associated NO_X fleet average requirement already result in significant N_2O control, and the agency does not expect current N_2O levels to rise for these vehicles. Moreover, EPA believes that the CO_2 standards will be challenging for the industry and that these standards should be the industry's chief focus in this first phase of vehicular GHG emission controls. See *Massachusetts* v. *EPA,* 549 U.S. at 533 (EPA has significant discretion as to timing of GHG regulations); *see* also *Sierra Club* v. *EPA, 325 F. 3d 374, 379 (DC Cir. 2003)* (upholding anti-backsliding standards for air toxics under technology-forcing section 202 (l) because it is reasonable for EPA to assess the effects of its other regulations on the motor vehicle sector before aggressively regulating emissions of toxic vehicular air pollutants.

Diesel cars and light trucks with advanced emission control technology are in the early stages of development and commercialization. As this segment of the vehicle market develops, the N_2O standard will likely require these manufacturers to incorporate control strategies that minimize N_2O formation. Available approaches include using electronic controls to limit catalyst conditions that might favor N_2O formation and consider different catalyst formulations. While some of these approaches may have modest associated costs, EPA believes that they will be small compared to the overall costs of the advanced NO_X control technologies already required to meet Tier 2 standards.

In the proposal, EPA sought comment on an approach of expressing N_2O and CH_4 in common terms of CO_2-equivalent emissions and combining them into a single standard along with CO_2 emissions. 74 FR at 49524. California's "Pavley" program adopted such a CO_2-equivalent emissions standards approach to GHG emissions.[196] EPA was primarily concerned that such an approach could undermine the stringency of the CO_2 standards, as the proposed standards were designed to "cap" N_2O and CH_4 emissions, rather than reflecting a level either that is the industry fleet-wide average or that would effect reductions in these GHGs.

As noted above, several auto manufacturers expressed interest in such a CO_2-equivalent approach, due to concerns that the caps could be limiting for some advanced technology vehicles. While we continue to believe that the vast majority of light-duty vehicles will be able to easily meet the standards, we acknowledge that advanced diesel or lean-burn gasoline vehicles of the future may face slightly greater challenges. Therefore, after considering these comments, EPA is finalizing an optional compliance approach to provide flexibility for any advanced technologies that may have challenges in meeting the N_2O or CH_4 cap standards.

In lieu of complying with the separate N_2O and CH_4 cap standards, a manufacturer may choose to comply with a CO_2-equivalent standard. A manufacturer choosing this option will convert its N_2O and CH_4 test results (or, as described below, a default N_2O value for MY 2012–2014) into CO_2-equivalent values and add this sum to their CO_2 emissions. This CO_2-equivalent value will still need to comply with the manufacturer's footprint-based CO_2 target level. In other words, a manufacturer could offset any N_2O emissions (or any CH_4 emissions) by taking steps to further reduce CO_2. A manufacturer choosing this option will need to apply this approach to all of the test groups in its fleet. This approach is more environmentally protective overall than the cap standard approach, since the manufacturer will need to reduce its CO_2 emissions to offset the higher N_2O (or CH_4) levels, but will not be allowed to increase CO_2 above its footprint target level by reducing N_2O (or CH_4).

The compliance level in g/mi for the optional CO_2-equivalent approach for gasoline vehicles is calculated as $CO_2 + (CWF/0.273 \times NMHC) + (1.571 \times CO) + (298 \times N_2O) + (25 \times CH_4)$.[197] The N_2O and CH_4 values are the measured emission values for these GHGs, except N_2O in model years 2012 through 2014. For these model years, manufacturers may use a default N_2O value of 0.010

[194] Memo to docket "Derivation of Proposed N_2O and CH_4 Cap Standards," Tad Wysor, EPA, November 19, 2009. Docket EPA–HQ–OAR–2009–0472–6801.

[195] Memo to docket "EPA NVFEL N_2O Test Data," Tony Fernandez, EPA.

[196] California Environmental Protection Agency Air Resources Board, Staff Report: Initial Statement of Reasons for Proposed Rulemaking Public Hearing To Consider Adoption of Regulations To Control Greenhouse Gas Emissions From Motor Vehicles, August 6, 2004.

[197] This equation will differ depending upon the fuel; see the final regulations for equations for other fuels.

g/mi, the same value as the N_2O cap standard. For MY 2015 and later, the manufacturer would need to provide actual test data on the emission data vehicle for each test group. (That is, N_2O data would not be required for each model type, since EPA believes that there will likely be little N_2O variability among model types within a test group.) EPA believes that its selection of 0.010 g/mi as the N_2O default value is an appropriately protective level, on the high end of current technologies, as further discussed below. Consistent with the other elements of the equation, N_2O and CH_4 must be included at full useful life deteriorated values. This requires testing using the highway test cycle in addition to the FTP during the manufacturer's deterioration factor (DF) development program. However, EPA recognizes that manufacturers may not be able to develop DFs for N_2O and CH_4 for all their vehicles in the 2012 model year, and thus EPA is allowing the use of alternative values through the 2014 model year. For N_2O the alternative value is the DF developed for NO_X emissions, and for CH_4 the alternative value is the DF developed for NMOG emissions. Finally, for manufacturers using this option, the CO_2-equivalent emission level would also be the basis for any credits that the manufacturer might generate.

Manufacturers expressed concerns about their ability to acquire and install N_2O analytical equipment. However, the agency continues to believe that such burdens, while not trivial, will also not be excessive. While many manufacturers do not appear to have invested yet in adding N_2O measurement equipment to their test facilities, EPA is not aware of any information to indicate that that suppliers will have difficulty providing sufficient hardware, or that such equipment is unusually expensive or complex compared to existing measurement hardware. EPA allows N_2O measurement using any of four methods, all of which are commercially available today. The costs of certification and other indirect costs of this rule are accounted for in the Indirect Cost Multipliers, discussed in Section III.H below.

Still, given the short lead-time for this rule and the newness of N_2O testing to this industry, EPA proposed that manufacturers be able to apply for a certificate of conformity with the N_2O standard for model year 2012 provided that they supply a compliance statement based on good engineering judgment. Under the proposal, beginning in MY 2013, manufacturers would have needed to base certification on actual N_2O testing data. This approach was intended to reasonably ensure that the emission standards are being met, while allowing manufacturers lead-time to purchase new N_2O emissions measurement equipment, modify certification test facilities, and begin N_2O testing. After consideration of the comments, EPA agrees with manufacturers that one year of additional lead-time to begin actual N_2O measurement across their vehicle fleets may still be insufficient for manufacturers to efficiently make the necessary facility changes and equipment purchases. Therefore, EPA is extending the ability to certify based on a compliance statement for two additional years, through model year 2014. For 2015 and later model years, manufacturers will need to submit measurements of N_2O for compliance purposes.

b. Methane (CH_4) Exhaust Emission Standard

Methane (CH_4) is a greenhouse gas with a high global warming potential.[198] It accounts for about 0.2% of the greenhouse gases from cars and light trucks.[199]

EPA is setting a CH_4 emission standard of 0.030 g/mi as measured on the FTP, to apply beginning with model year 2012 for both cars and trucks. EPA believes that this level for the standard will be met by current gasoline and diesel vehicles, and will prevent large increases in future CH_4 emissions. This is particularly a concern in the event that alternative fueled vehicles with high methane emissions, like some past dedicated compressed natural gas (CNG) vehicles and some flexible-fueled vehicles when operated on E85 fuel, become a significant part of the vehicle fleet. Currently EPA does not have separate CH_4 standards because unlike other hydrocarbons it does not contribute significantly to ozone formation.[200] However, CH_4 emissions levels in the gasoline and diesel car and light truck fleet have nevertheless generally been controlled by the Tier 2 standards for non-methane organic gases (NMOG). However, without an emission standard for CH_4, there is no guarantee that future emission levels of CH_4 will remain at current levels as vehicle technologies and fuels evolve.

The standard will cap CH_4 emission levels, with the expectation that emissions levels of current gasoline and diesel vehicles meeting the Tier 2 emission standards will not increase. The level of the standard will generally be achievable for typical vehicles through normal emission control methods already required to meet the Tier 2 emission standards for NMOG. Also, since CH_4 is already measured under the current Tier 2 regulations (so that it may be subtracted to calculate non-methane hydrocarbons), we believe that the standard will not result in any additional testing costs. Therefore, EPA is not attributing any costs to this part of this program. Since CH_4 is produced during fuel combustion in gasoline and diesel engines similarly to other hydrocarbon components, controls targeted at reducing overall NMOG levels are generally also effective in reducing CH_4 emissions. Therefore, for typical gasoline and diesel vehicles, manufacturer strategies to comply with the Tier 2 NMOG standards have to date tended to prevent increases in CH_4 emissions levels. The CH_4 standard will ensure that emissions will be addressed if in the future there are increases in the use of natural gas or other alternative fuels or technologies that may result in higher CH_4 emissions.

As with the N_2O standard, EPA is setting the level of the CH_4 standard to be approximately two times the level of average CH_4 emissions from Tier 2 gasoline passenger cars and light-duty trucks. EPA believes the standard will easily be met by current gasoline vehicles, and that flexible fuel vehicles operating on ethanol can be designed to resolve any potential CH_4 emissions concerns. Similarly, since current diesel vehicles generally have even lower CH_4 emissions than gasoline vehicles, EPA believes that diesels will also meet the CH_4 standard. However, EPA also believes that to set a CH_4 emission standard more stringent than the proposed standard could effectively make the Tier 2 NMOG standard more stringent and is inappropriate for that reason (and untimely as well, given the challenge of meeting the CO_2 standards, as noted above).

Some CNG-fueled vehicles have historically produced significantly higher CH_4 emissions than gasoline or diesel vehicles. This is because CNG fuel is essentially methane and any unburned fuel that escapes combustion and is not oxidized by the catalyst is emitted as methane. However, in recent model years, the few dedicated CNG vehicles sold in the U.S. meeting the Tier 2 standards have had CH_4 control as effective as that of gasoline or diesel vehicles. Still, even if these vehicles meet the Tier 2 NMOG standard and appear to have effective CH_4 control by

[198] CH_4 has a GWP of 25 according to the IPCC Fourth Assessment Report (AR4).

[199] *See* RIA Chapter 2.

[200] But *see Ford Motor Co.* v. *EPA,* 604 F. 2d 685 (D.C. Cir. 1979) (permissible for EPA to regulate CH_4 under CAA section 202(b)).

nature of the NMOG controls, Tier 2 standards do not require CH_4 control. Although EPA believes that in most cases that the CH_4 cap standard should not require any different emission control designs beyond what is already required to meet Tier 2 NMOG standards on a dedicated CNG vehicle, the cap will ensure that systems maintain the current level of CH_4 control.

Some manufacturers have also expressed some concerns about CH_4 emissions from flexible-fueled vehicles operating on E85 (85% ethanol, 15% gasoline). However, we are not aware of any information that would indicate that if engine-out CH_4 proves to be higher than for a typical gasoline vehicle, that such emissions could not be managed by reasonably available control strategies (perhaps similar to those used in dedicated CNG vehicles).

As described above, in response to the comments, EPA will also allow manufacturers to choose to comply with a CO_2-equivalent standard in lieu of complying with a separate CH_4 cap standard. A manufacturer choosing this option would convert its N_2O and CH_4 test results into CO_2-equivalent values (using the respective GWP values), and would then compare this value to the manufacturer's footprint-based CO_2 target level to determine compliance. However, as with N_2O, this approach will not permit a manufacturer to increase its CO_2 by reducing CH_4; the company's footprint-based CO_2 target level would remain the same.

8. Small Entity Exemption

As proposed, EPA is exempting from GHG emissions standards small entities meeting the Small Business Administration (SBA) size criteria of a small business as described in 13 CFR 121.201.[201] EPA will instead consider appropriate GHG standards for these entities as part of a future regulatory action. This includes both U.S.-based and foreign small entities in three distinct categories of businesses for light-duty vehicles: small volume manufacturers, independent commercial importers (ICIs), and alternative fuel vehicle converters.

EPA has identified about 13 entities that fit the Small Business Administration (SBA) size criterion of a small business. EPA estimates there currently are approximately two small volume manufacturers, eight ICIs, and three alternative fuel vehicle converters in the light-duty vehicle market. Further detail is provided in Section III.I.3, below. EPA estimates that these small entities comprise less than 0.1 percent of the total light-duty vehicle sales in the U.S., and therefore the exemption will have a negligible impact on the GHG emissions reductions from the standards.

To ensure that EPA is aware of which companies would be exempt, EPA proposed to require that such entities submit a declaration to EPA containing a detailed written description of how that manufacturer qualifies as a small entity under the provisions of 13 CFR 121.201. EPA has reconsidered the need for this additional submission under the regulations and is deleting it as not necessary. We already have information on the limited number of small entities that we expect would receive the benefits of the exemption, and do not need the proposed regulatory requirement to be able to effectively implement this exemption for those parties who in fact meet its terms. Small entities are currently covered by a number of EPA motor vehicle emission regulations, and they routinely submit information and data on an annual basis as part of their compliance responsibilities.

EPA did not receive adverse comments regarding the proposed small entity exemption. EPA received comments concerning whether or not the small entity exemption applies to foreign manufacturers. EPA clarifies that foreign manufacturers meeting the SBA size criteria are eligible for the exemption, as was EPA's intent during the proposal.

C. Additional Credit Opportunities for CO_2 Fleet Average Program

The final standards represent a significant multi-year challenge for manufacturers, especially in the early years of the program. Section III.B.4 above describes EPA's provisions for manufacturers to be able to generate credits by achieving fleet average CO_2 emissions below their fleet average standard, and also how manufacturers can use credits to comply with the standards. As described in Section III.B.4, credits can be carried forward five years, carried back three years, transferred between vehicle categories, and traded between manufacturers. The credits provisions described below provide manufacturers with additional ways to earn credits starting in MY 2012. EPA is also including early credits provisions for the 2009–2011 model years, as described below in Section III.C.5.

The provisions described below provide additional flexibility, especially in the early years of the program. This helps to address issues of lead-time or technical feasibility for various manufacturers and in several cases provides an incentive for promotion of technology pathways that warrant further development. EPA is finalizing a variety of credit opportunities because manufacturers are not likely to be in a position to use every credit provision. EPA expects that manufacturers are likely to select the credit opportunities that best fit their future plans.

EPA believes it is critical that manufacturers have options to ease the transition to the final MY 2016 standards. At the same time, EPA believes these credit programs must be and are designed in a way to ensure that they achieve emission reductions that achieve real-world reductions over the full useful life of the vehicle (or, in the case of FFV credits and Advanced Technology incentives, to incentivize the introduction of those vehicle technologies) and are verifiable. In addition, EPA believes that these credit programs do not provide an opportunity for manufacturers to earn "windfall" credits. Comments on the proposed EPA credit programs are summarized below along with EPA's response, and are detailed in the Response to Comments document.

1. Air Conditioning Related Credits

Manufacturers will be able to generate and use credits for improved air conditioner (A/C) systems in complying with the CO_2 fleetwide average standards described above (or otherwise to be able to bank or trade the credits). EPA expects that most manufacturers will choose to utilize the A/C provisions as part of its compliance demonstration (and for this reason cost of compliance with A/C related emission reductions are assumed in the cost analysis). The A/C provisions are structured as credits, unlike the CO_2 standards for which manufacturers will demonstrate compliance using 2-cycle (city/highway) tests (see Sections III.B and III.E.). Those tests do not measure either A/C leakage or tailpipe CO_2 emissions attributable to A/C load. Thus, it is a manufacturer's option to include A/C GHG emission reductions as an aspect of its compliance demonstration. Since this is an elective alternative, EPA is referring to the A/C part of the rule as a credit.

EPA estimates that direct A/C GHG emissions—emissions due to the leakage of the hydrofluorocarbon refrigerant in common use today—account for 5.1% of CO_2-equivalent GHGs from light-duty cars and trucks. This includes the direct leakage of refrigerant as well as the subsequent leakage associated with maintenance and servicing, and with disposal at the end of the vehicle's life.

[201] *See* final regulations at 40 CFR 86.1801–12(j).

The emissions that are associated with leakage reductions are the direct leakage and the leakage associated with maintenance and servicing. Together these are equivalent to CO_2 emissions of approximately 13.6 g/mi per car and light-truck. EPA also estimates that indirect GHG emissions (additional CO_2 emitted due to the load of the A/C system on the engine) account for another 3.9% of light-duty GHG emissions.[202] This is equivalent to CO_2 emissions of approximately 14.2 g/mi per vehicle. The derivation of these figures can be found in Chapter 2.2 of the EPA RIA.

EPA believes that it is important to address A/C direct and indirect emissions because the technologies that manufacturers will employ to reduce vehicle exhaust CO_2 will have little or no impact on A/C related emissions. Without addressing A/C related emissions, as vehicles become more efficient, the A/C related contribution will become a much larger portion of the overall vehicle GHG emissions.

Over 95% of the new cars and light trucks in the United States are equipped with A/C systems and, as noted, there are two mechanisms by which A/C systems contribute to the emissions of greenhouse gases: Through leakage of refrigerant into the atmosphere and through the consumption of fuel to provide mechanical power to the A/C system. With leakage, it is the high global warming potential (GWP) of the current automotive refrigerant (HFC–134a, with a GWP of 1430) that results in the CO_2-equivalent impact of 13.6 g/mi.[203] Due to the high GWP of this HFC, a small leakage of the refrigerant has a much greater global warming impact than a similar amount of emissions of CO_2 or other mobile source GHGs. Manufacturers can reduce A/C leakage emissions by using leak-tight components. Also, manufacturers can largely eliminate the global warming impact of leakage emissions by adopting systems that use an alternative, low-GWP refrigerant, as discussed below.[204] The A/C system also contributes to increased CO_2 emissions through the additional work required to operate the compressor, fans, and blowers. This additional work typically is provided through the engine's crankshaft, and delivered via belt drive to the alternator (which provides electric energy for powering the fans and blowers) and the A/C compressor (which pressurizes the refrigerant during A/C operation). The additional fuel used to supply the power through the crankshaft necessary to operate the A/C system is converted into CO_2 by the engine during combustion. This incremental CO_2 produced from A/C operation can thus be reduced by increasing the overall efficiency of the vehicle's A/C system, which in turn will reduce the additional load on the engine from A/C operation.[205]

Manufacturers can make very feasible improvements to their A/C systems to address A/C system leakage and efficiency. EPA is finalizing two separate credit approaches to address leakage reductions and efficiency improvements independently. A leakage reduction credit will take into account the various technologies that could be used to reduce the GHG impact of refrigerant leakage, including the use of an alternative refrigerant with a lower GWP. An efficiency improvement credit will account for the various types of hardware and control of that hardware available to increase the A/C system efficiency. For purposes of use of A/C credits at certification, manufacturers will be required to attest to the durability of the leakage reduction and the efficiency improvement technologies over the full useful life of the vehicle.

EPA believes that both reducing A/C system leakage and increasing efficiency are highly cost-effective and technologically feasible. EPA expects most manufacturers will choose to use these A/C credit provisions, although some may not find it necessary to do so.

a. A/C Leakage Credits

The refrigerant used in vehicle A/C systems can get into the atmosphere by many different means. These refrigerant emissions occur from the slow leakage over time that all closed high pressure systems will experience. Refrigerant loss occurs from permeation through hoses and leakage at connectors and other parts where the containment of the system is compromised. The rate of leakage can increase due to deterioration of parts and connections as well. In addition, there are emissions that occur during accidents and maintenance and servicing events. Finally, there are end-of-life emissions if, at the time of vehicle scrappage, refrigerant is not fully recovered.

Because the process of refrigerant leakage has similar root causes as those that cause fuel evaporative emissions from the fuel system, some of the emission control technologies are similar (including hose materials and connections). There are, however, some fundamental differences between the systems that require a different approach, both to controlling and to documenting that control. The most notable difference is that A/C systems are completely closed systems and always under significant pressure, whereas the fuel system is not. Fuel systems are meant to be refilled as liquid fuel is consumed by the engine, while the A/C system ideally should never require "recharging" of the contained refrigerant. Thus it is critical that the A/C system leakages be kept to an absolute minimum. As a result, these emissions are typically too low to accurately measure in most current SHED chambers designed for fuel evaporative emissions measurement, especially for A/C systems that are new or early in life.

A few commenters suggested that we allow manufacturers, as an option, to use an industry-developed "mini-shed" test procedure (SAE J2763—Test Procedure for Determining Refrigerant Emissions from Mobile Air Conditioning Systems) to measure and report annual refrigerant leakage.[206] However, while EPA generally prefers performance testing, for an individual vehicle A/C system or component, there is not a strong inherent correlation between a performance test using SAE J2763 and the design-based approach we are adopting (based on SAE J2727, as discussed below).[207] Establishing such a correlation would require testing of a fairly broad range of current-technology systems in order to establish the effects of such factors as production variability and assembly practices (which are included in J2727 scores, but not in J2763 measurements). To EPA's knowledge, such a correlation study has not been done. At the same time, as discussed below, there are indications that much of the industry will eventually be moving toward alternative refrigerants with very low GWPs. EPA believes such a transition would diminish the value of any correlation

[202] *See* Chapter 2, Section 2.2.1.2 of the RIA.

[203] The global warming potentials (GWP) used in this rule are consistent with Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4). (At this time, the IPCC Second Assessment Report (SAR) GWP values are used in the official U.S. greenhouse gas inventory submission to the climate change framework.)

[204] Refrigerant emissions during maintenance and at the end of the vehicle's life (as well as emissions during the initial charging of the system with refrigerant) are also addressed by the CAA Title VI stratospheric ozone program, as described below.

[205] We chose not to address changes to the weight of the A/C system, since the issue of CO_2 emissions from the fuel consumption of normal (non-A/C) operation, including basic vehicle weight, is inherently addressed by the primary CO_2 standards (Section III.B above).

[206] Honeywell and Volvo supported this view; most other commenters did not.

[207] However, there is a correlation in the fleet between J2763 measurements and J2727 scores.

studies that might be done to confirm the appropriateness of the SAE J2763 procedure as an option in this rule. For these reasons, EPA is therefore not adopting such an optional direct measurement approach to addressing refrigerant leakage at this time.

Instead, as proposed, EPA is adopting a design-based method for manufacturers to demonstrate improvements in their A/C systems and components.[208] Manufacturers implementing system designs expected to result in reduced refrigerant leakage will be eligible for credits that could then be used to meet their CO_2 emission compliance requirements (or otherwise banked or traded). The A/C Leakage Credit provisions will generally assign larger credits to system designs that would result in greater leakage reductions. In addition, proportionately larger A/C Leakage Credits will be available to manufacturers that substitute a refrigerant with lower GWP than the current HFC–134a refrigerant.

Our method for calculating A/C Leakage Credits is based closely on an industry-consensus leakage scoring method, described below. This leakage scoring method is correlated to experimentally-measured leakage rates from a number of vehicles using the different available A/C components. Under the approach, manufacturers will choose from a menu of A/C equipment and components used in their vehicles in order to establish leakage scores which will characterize their A/C system leakage performance. Credits will be generated from leakage reduction improvements that exceed average fleetwide leakage rates.

EPA believes that the design-based approach will result in estimates of leakage emissions reductions that will be comparable to those that will eventually result from performance-based testing. We believe that this method appropriately approximates the real-world leakage rates for the expected MY 2012–2016 A/C systems.

The cooperative industry and government Improved Mobile Air Conditioning (IMAC) program [209] has demonstrated that new-vehicle leakage emissions can be reduced by 50%. This program has shown that this level of improvement can be accomplished by reducing the number and improving the quality of the components, fittings, seals, and hoses of the A/C system. All of these technologies are already in commercial use and exist on some of today's systems.

As proposed, a manufacturer wishing to generate A/C Leakage Credits will compare the components of its A/C system with a set of leakage-reduction technologies and actions based closely on that developed through IMAC and the Society of Automotive Engineers (as SAE Surface Vehicle Standard J2727, August 2008 version). The J2727 approach was developed from laboratory testing of a variety of A/C related components, and EPA believes that the J2727 leakage scoring system generally represents a reasonable correlation with average real-world leakage in new vehicles. The EPA credit approach addresses the same A/C components as does SAE J2727 and associates each component with the same gram-per-year leakage rate as the SAE method, although, as described below, EPA limits the credits allowed and also modifies it for other factors such as alternative refrigerants.

A manufacturer choosing to generate A/C Leakage Credits will sum the leakage values for an A/C system for a total A/C leakage score according to the following formula. Because the primary GHG program standards are expressed in terms of vehicle exhaust CO_2 emissions as measured in grams per mile, the credits programs adopted in this rule, including A/C related credits, must ultimately be converted to a common metric for proper calculation of credits toward compliance with the primary vehicle standards. This formula describes the conversion of the grams-per-year leakage score to a grams-per-mile CO_2eq value, taking vehicle miles traveled (VMT) and the GWP of the refrigerant into account:

A/C Leakage Credit = (MaxCredit) * [1 – (LeakScore/AvgImpact) * (GWPRefrigerant/1430)]

Where:

MaxCredit is 12.6 and 15.6 g/mi CO_2eq for cars and trucks, respectively. These values become 13.8 and 17.2 for cars and trucks, respectively, if low-GWP refrigerants are used, since this would generate additional credits from reducing emissions during maintenance events, accidents, and at end-of-life.

LeakScore is the leakage score of the A/C system as measured according to the EPA leakage method (based on the J2727 procedure, as discussed above) in units of g/yr. The minimum score that EPA considers feasible is fixed at 8.3 and 10.4 g/yr for cars and trucks respectively (4.1 and 5.2 g/yr for systems using electric A/C compressors) as discussed below.

Avg Impact is the average current A/C leakage emission rate, which is 16.6 and 20.7 g/yr for cars and trucks, respectively.

GWPRefrigerant is the global warming potential (GWP) for direct radiative forcing of the refrigerant. For purposes of this rule, the GWP of HFC–134a is 1430, the GWP of HFC–152a is 124, the GWP of HFO–1234yf is 4, and the GWP of CO_2 as a refrigerant is 1.

The EPA Final RIA elaborates further on the development of each of the values incorporated in the A/C Leakage Credit formula above, as summarized here. First, as proposed, EPA estimates that leakage emission rates for systems using the current refrigerant (HFC–134a) could be feasibly reduced to rates no less than 50% of current rates—or 8.3 and 10.4 g/yr for cars and trucks, respectively—based on the conclusions of the IMAC study as well as consideration of refrigerant emissions over the full life of the vehicle.

Also, some commenters noted that A/C compressors powered by electric motors (*e.g.* as used today in several hybrid vehicle models) were not included in the IMAC study and yet allow for leakage emission rate reductions beyond EPA's estimates for systems with conventional belt-driven compressors. EPA agrees with these comments, and we have incorporated lower minimum emission rates into the formula above—4.1 and 5.2 g/yr for cars and trucks, respectively—in order to allow additional leakage reduction credits for vehicles that use sealed electric A/C compressors. The maximum available credits for these two approaches are summarized in Table III.C.1–1 below.

AIAM commented that EPA should not set a lower limit on the leakage score, even for non-electric compressors. EPA has determined not to do so. First, although there do exist vehicles in the Minnesota data with lower scores than our proposed (and now final) minimum scores, there are very few car models that have scores less than 8.3, and these range from 7.0 to about 8.0 and the difference are small compared to our minimum score.[210] More important, lowering the leakage limit would necessarily increase credit opportunities for equipment design changes, and EPA believes that these changes could discourage the environmentally optimal result of using low GWP refrigerants. Introduction of low GWP refrigerants could be discouraged because it may be less costly to reduce leakage than to replace many of the A/C system components. Moreover, due to the likelihood of in-use factors, even a leakless (according to

[208] *See* final regulations at 40 CFR 86.1866–12(b).

[209] Team 1–Refrigerant Leakage Reduction: Final Report to Sponsors, SAE, 2007.

[210] The Minnesota refrigerant leakage data can be found at *http://www.pca.state.mn.us/climatechange/mobileair.html#leakdata.*

J2727) R134a system will have some emissions due to manufacturing variability, accidents, deterioration, maintenance, and end of life emissions, a further reason to cap the amount of credits available through equipment design. The only way to guarantee a near zero emission system in-use is to use a low GWP refrigerant. The EPA has therefore decided for the purposes of this final rule to not change the minimum score for belt driven compressors due to the reason cited above and to the otherwise overwhelming support for the program as proposed from commenters.

In addition, as discussed above, EPA recognizes that substituting a refrigerant with a significantly lower GWP will be a very effective way to reduce the impact of all forms of refrigerant emissions, including maintenance, accidents, and vehicle scrappage. To address future GHG regulations in Europe and California, systems using alternative refrigerants—including HFO1234yf, with a GWP of 4 and CO_2 with a GWP of 1—are under serious development and have been demonstrated in prototypes by A/C component suppliers. The European Union has enacted regulations phasing in alternative refrigerants with GWP less than 150 starting this year, and the State of California proposed providing credits for alternative refrigerant use in its GHG rule. Within the timeframe of MYs 2012–2016, EPA is not expecting widespread use of low-GWP refrigerants. However, EPA believes that these developments are promising, and, as proposed, has included in the A/C Leakage Credit formula above a factor to account for the effective GHG reductions that could be expected from refrigerant substitution. The A/C Leakage Credits that will be available will be a function of the GWP of the alternative refrigerant, with the largest credits being available for refrigerants with GWPs at or approaching a value of 1. For a hypothetical alternative refrigerant with a GWP of 1 (*e.g.,* CO_2 as a refrigerant), effectively eliminating leakage as a GHG concern, our credit calculation method could result in maximum credits equal to total average emissions, or credits of 13.8 and 17.2 g/mi CO_2eq for cars and trucks, respectively, as incorporated into the A/C Leakage Credit formula above as the "MaxCredit" term.

Table III.C.1–1 summarizes the maximum A/C leakage credits available to a manufacturer, according to the formula above.

TABLE III.C.1–1—MAXIMUM LEAKAGE CREDIT AVAILABLE TO MANUFACTURERS

	Car (g/mi)	Truck (g/mi)
R–134a refrigerant with belt-driven compressor	6.3	7.8
R–134a refrigerant with electric motor-driven compressor	9.5	11.7
Lowest-GWP refrigerant (GWP=1)	13.8	17.2

It is possible that alternative refrigerants could, without compensating action by the manufacturer, reduce the efficiency of the A/C system (see related discussion of the A/C Efficiency Credit below.) However, as noted at proposal and discussed further in the following section, EPA believes that manufacturers will have substantial incentives to design their systems to maintain the efficiency of the A/C system. Therefore EPA is not accounting for any potential efficiency degradation due to the use of alternative refrigerants.

Beyond the comments mentioned above, commenters generally supported or were silent about EPA's refrigerant leakage methodology (as based on SAE J2727), including the maximum leakage credits available, the technologies eligible for credit and their associated leakage reduction values, and the potential for alternative refrigerants. All comments related to A/C credits are addressed in the Response to Comments Document.

b. A/C Efficiency Credits

Manufacturers that make improvements in their A/C systems to increase efficiency and thus reduce CO_2 emissions due to A/C system operation may be eligible for A/C Efficiency Credits. As with A/C Leakage Credits, manufacturers could apply A/C Efficiency Credits toward compliance with their overall CO_2 standards (or otherwise bank and trade the credits).

As mentioned above, EPA estimates that the CO_2 emissions due to A/C related loads on the engine account for approximately 3.9% of total greenhouse gas emissions from passenger vehicles in the United States. Usage of A/C systems is inherently higher in hotter and more humid months and climates; however, vehicle owners may use their A/C systems all year round in all parts of the nation. For example, people commonly use A/C systems to cool and dehumidify the cabin air for passenger comfort on hot humid days, but they also use the systems to de-humidify cabin air to assist in defogging/de-icing the front windshield and side glass in cooler weather conditions for improved visibility. A more detailed discussion of seasonal and geographical A/C usage rates can be found in the RIA.

Most of the additional load on the engine from A/C system operation comes from the compressor, which pumps the refrigerant around the system loop. Significant additional load on the engine may also come from electric or hydraulic fans, which are used to move air across the condenser, and from the electric blower, which is used to move air across the evaporator and into the cabin. Manufacturers have several currently-existing technology options for improving efficiency, including more efficient compressors, fans, and motors, and system controls that avoid over-chilling the air (and subsequently re-heating it to provide the desired air temperature with an associated loss of efficiency). For vehicles equipped with automatic climate-control systems, real-time adjustment of several aspects of the overall system (such as engaging the full capacity of the cooling system only when it is needed, and maximizing the use of recirculated air) can result in improved efficiency. Table III.C.1–2 below lists some of these technologies and their respective efficiency improvements.

As discussed in the proposal, EPA is adopting a design-based "menu" approach for estimating efficiency improvements and, thus, quantifying A/C Efficiency Credits.[211] However, EPA's ultimate preference is performance-based standards and credit mechanisms (*i.e.,* using actual measurements) as typically providing a more accurate measure of performance. However, EPA has concluded that a practical, performance-based procedure for the purpose of accurately quantifying A/C-related CO_2 emission reductions, and thus efficiency improvements for assigning credits, is not yet available. Still, EPA is introducing a new specialized performance-based test for the more limited purpose of demonstrating that

[211] *See* final regulations at 40 CFR 86.1866–12(c).

actual efficiency improvements are being achieved by the design improvements for which a manufacturer is seeking A/C credits. As discussed below, beginning in MY 2014, manufacturers wishing to generate A/C Efficiency Credits will need to show improvement on the new A/C Idle Test in order to then use the "menu" approach to quantify the number of credits attributable to those improvements.

In response to comments concerning the applicability and effectiveness of technologies that were or were not included in our analysis, we have made several changes to the design-based menu.[212] First, we have separated the credit available for 'recirculated air'[213] technologies into those with closed-loop control of the air supply and those with open-loop control. By "closed-loop" control, we mean a system that uses feedback from a sensor, or sensors, (*e.g.,* humidity, glass fogging, CO_2, etc.) to actively control the interior air quality. For those systems that use "open-loop" control of the air supply, we project that since this approach cannot precisely adjust to varying ambient humidity or passenger respiration levels, the relative effectiveness will be less than that for systems using closed-loop control.

Second, many commenters indicated that the electronic expansion valve, or EXV, should not be included in the menu of technologies, as its effectiveness may not be as high as we projected. Commenters noted that the SAE IMAC report stated efficiency improvements for an EXV used in conjunction with a more efficient compressor, and not as a stand alone technology and that no manufacturers are considering this technology for their products within the timeframe of this rulemaking. We believe other technologies (improved compressor controls for example) can achieve the same benefit as an EXV, without the need for this unique component, and therefore are not adopting it as an option in the design menu of efficiency-improving A/C technologies.

Third, many commenters requested that an internal heat exchanger, or IHX, be added to the design menu. EPA initially considered adding this technology, but in our initial review of studies on this component, we had understood that the value of the technology is limited to systems using the alternative refrigerant HFO–1234yf. Some manufacturers, however, commented that an IHX can also be used with systems using the current refrigerant HFC–134a to improve efficiency, and that they plan on implementing this technology as part their strategy to improve A/C efficiency. Based on these comments, and projections in a more recent SAE Technical Paper, we project that an IHX in a conventional HFC–134a system can improve system efficiency by 20%, resulting in a credit of 1.1 g/mi.[214] Further discussion of IHX technology can be found in the RIA.

Fourth, we have modified the definition of 'improved evaporators and condensers' to recognize that improved versions of these heat exchangers may be used separately or in conjunction with one another, and that an engineering analysis must indicate a COP improvement of 10% or better when using either or both components (and not a 10% COP improvement for each component). Furthermore, we have modified the regulation text to clarify what is considered to be the 'baseline' components for this analysis. We consider the baseline component to be the version which a manufacturer most recently had in production on the same vehicle or a vehicle in a similar EPA vehicle classification. The dimensional characteristics (*e.g.* tube configuration/thickness/spacing, and fin density) of the baseline components are then compared to the new components, and an engineering analysis is required to demonstrate the COP improvement.

For model years 2012 and 2013, a manufacturer wishing to generate A/C Efficiency Credits for a group of its vehicles with similar A/C systems will compare several of its vehicle A/C-related components and systems with a list of efficiency-related technology improvements (see Table III.C.1–2 below). Based on the technologies the manufacturer chooses, an A/C Efficiency Credit value will be established. This design-based approach will recognize the relationships and synergies among efficiency-related technologies. Manufacturers could receive credits based on the technologies they chose to incorporate in their A/C systems and the associated credit value for each technology. The total A/C Efficiency Credit will be the total of these values, up to a maximum allowable credit of 5.7 g/mi CO_2eq. This will be the maximum improvement from current average efficiencies for A/C systems (see the RIA for a full discussion of our derivation of the reductions and credit values for individual technologies and for the maximum total credit available). Although the total of the individual technology credit values may exceed 5.7 g/mi CO_2eq, synergies among the technologies mean that the values are not additive. A/C Efficiency Credits as adopted may not exceed 5.7 g/mi CO_2eq.

TABLE III.C.1–2—EFFICIENCY-IMPROVING A/C TECHNOLOGIES AND CREDITS

Technology description	Estimated reduction in A/C CO_2 emissions (%)	A/C efficiency credit (g/mi CO_2)
Reduced reheat, with externally-controlled, variable-displacement compressor	30	1.7
Reduced reheat, with externally-controlled, fixed-displacement or pneumatic variable-displacement compressor	20	1.1
Default to recirculated air with closed-loop control of the air supply (sensor feedback to control interior air quality) whenever the ambient temperature is 75 °F or higher (although deviations from this temperature are allowed if accompanied by an engineering analysis)	30	1.7
Default to recirculated air with open-loop control air supply (no sensor feedback) whenever the ambient temperature 75 °F or higher lower temperatures are allowed	20	1.1
Blower motor controls which limit wasted electrical energy (*e.g.,* pulse width modulated power controller)	15	0.9
Internal heat exchanger	20	1.1
Improved condensers and/or evaporators (with system analysis on the component(s) indicating a COP improvement greater than 10%, when compared to previous industry standard designs)	20	1.1

[212] Commenters included the Alliance of Automobile Manufacturers, Jaguar Land Rover, Denso, and the Motor and Equipment Manufacturers Association, among others.

[213] Recirculated air is defined as air present in the passenger compartment of the vehicle (versus outside air) available for the A/C system to cool or condition.

[214] Mathur, Gursaran D., "Experimental Investigation with Cross Fluted Double-Pipe Suction Line Heat Exchanger to Enhance A/C System Performance," SAE 2009–01–0970, 2009.

TABLE III.C.1–2—EFFICIENCY-IMPROVING A/C TECHNOLOGIES AND CREDITS—Continued

Technology description	Estimated reduction in A/C CO_2 emissions (%)	A/C efficiency credit (g/mi CO_2)
Oil separator (with engineering analysis demonstrating effectiveness relative to the baseline design)	10	0.6

The proposal requested comment on adjusting the efficiency credit for alternative refrigerants. Although a few commenters noted that the efficiency of an HFO1234yf system may differ from a current HFC–134a system,[215] we believe that this difference does not take into account any efficiency improvements that may be recovered or gained when the overall system is specifically designed with consideration of the new refrigerant properties (as compared to only substituting the new refrigerant). EPA is therefore not adjusting the credits based on efficiency differences for this rule.

As noted above, for model years 2014 and later, manufacturers seeking to generate design-based A/C Efficiency Credits will also need to use a specific new EPA performance test to confirm that the design changes are resulting in improvements in A/C system efficiency as integrated into the vehicle. As proposed, beginning in MY 2014 manufacturers will need to perform an A/C CO_2 Idle Test for each A/C system (family) for which it desires to generate Efficiency Credits. Manufacturers will need to demonstrate an improvement over current average A/C CO_2 levels (21.3 g/minute on the Idle Test) to qualify for the menu approach credits. Upon qualifying on the Idle Test, the manufacturer will be eligible to use the menu approach above to quantify the potential credits it could generate. To earn the full amount of credits available in the menu approach (limited to the maximum), the test must demonstrate a 30% or greater improvement in CO_2 levels over the current average.

For A/C systems that achieve an improvement between 0-and-30% (or a result between 21.3 and 14.9 g/minute result on the A/C CO_2 Idle Test), a credit can still be earned, but a multiplicative credit adjustment factor will be applied to the eligible credits. As shown in Figure III.C.1–1 this factor will be scaled from 1.0 to 0, with vehicles demonstrating a 30% or better improvement (14.9 g/min or lower) receiving 100% of the eligible credit (adj. factor = 1.0), and vehicles demonstrating a 0% improvement—21.3 g/min or higher result—receiving no credit (adj. factor = 0). We adopted this adjustment factor in response to commenters who were concerned that a vehicle which incorporated many efficiency-improving technologies may not achieve the full 30% improvement, and as a result would receive no credit (thus discouraging them from using any of the technologies). Because there is environmental benefit (reduced CO_2) from the use of even some of these efficiency-improving technologies, EPA believes it is appropriate to scale the A/C efficiency credits to account for these partial improvements.

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[215] Ford noted that "the physical properties of the alternative refrigerant R1234yf could result in a reduction of efficiency by 5 to 10 percent compared to R134a in use today with a similar refrigerant system and controls technology."

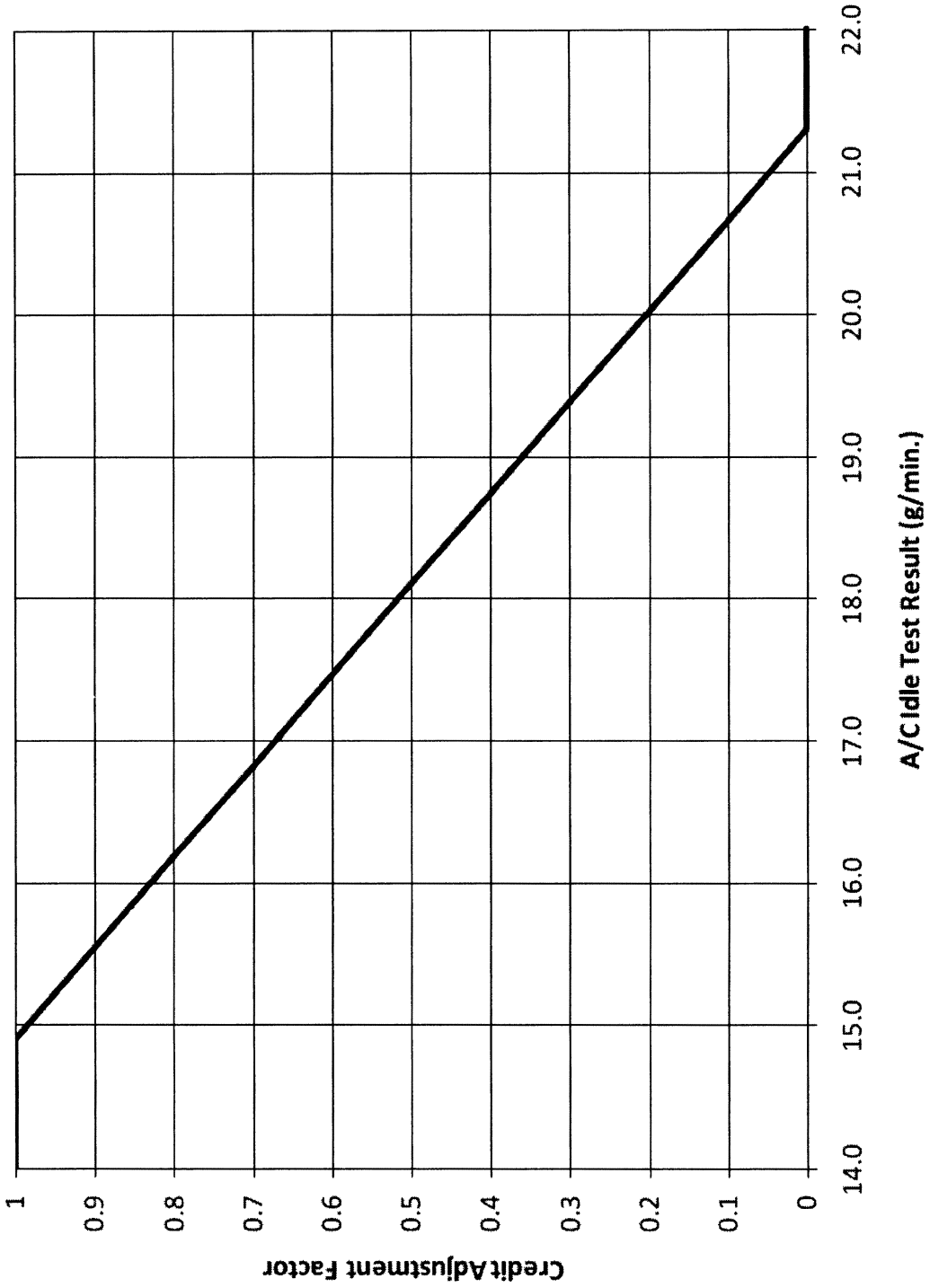

Figure III.C.1-1 A/C Credit Adjustment Factor

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EPA is adopting the A/C CO_2 Idle Test procedure as proposed in most respects. This laboratory idle test is performed while the vehicle is at idle, similar to the idle carbon monoxide (CO) test that was once a part of EPA vehicle certification. The test determines the additional CO_2 generated at idle when the A/C system is operated. The A/C CO_2 Idle Test will be run with and without the A/C system cooling the interior cabin while the vehicle's engine is operating at idle and with the system under complete control of the engine and climate control system. The test includes tighter restrictions on test cell temperatures and humidity levels than apply for the basic FTP test procedure in order to more closely control the loads from operation of the A/C system. EPA is also adopting additional refinements to the required in-vehicle blower fan settings for manually controlled systems to more closely represent "real world" usage patterns.

Many commenters questioned the ability of this test to measure the improved efficiency of certain A/C technologies, and stated that the test was not representative of real-world driving conditions. However, although EPA acknowledges that this test directly simulates a relatively limited range of technologies and conditions, we determined that it is sufficiently robust for the purpose of demonstrating that the system design changes are indeed implemented properly and are resulting in improved efficiency of a vehicle's A/C system, at idle as well as under a range of operating conditions. Further details of the A/C Idle Test can be found in the RIA and the regulations, as well as in the Response to Comments Document.

The design of the A/C CO_2 Idle Test represents a balancing of the need for performance tests whenever possible to ensure the most accurate quantification of efficiency improvements, with practical concerns for testing burden and facility requirements. EPA believes that the Idle Test adds to the robust quantification of A/C credits that will result in real-world efficiency improvements and reductions in A/C-related CO_2 emissions. The Idle Test will not be required in order to generate A/C Efficiency Credits until MY 2014 to allow sufficient time for manufacturers to make the necessary facilities improvements and to gain experience with the test.

EPA also considered and invited comment on a more comprehensive testing approach to quantifying A/C CO_2 emissions that could be somewhat more technically robust, but would require more test time and test facility improvements for many manufacturers. EPA invited comment on using an adapted version of the SCO3, an existing test procedure that is part of the Supplemental Federal Test Procedure. EPA discussed and invited comment on the various benefits and concerns associated with using an adapted SCO3 test. There were many comments opposed to this proposal, and very few supporters. Most of the comments opposing this approach echoed the concerns made by in the NPRM. These included excessive testing burden, limited test facilities and the cost of adding new ones, and the concern that the SC03 test may not be sufficiently representative of in use A/C usage. Some commenters supported a derivative of the SCO3 test or multiple runs of other urban cycles (such as the LA–4) for quantifying A/C system efficiency. While EPA considers a test cycle that covers a broader range of vehicle speed and climatic conditions to be ideal, developing such a representative A/C test would involve the work of many stakeholders, and would require a significant amount of time, exceeding the scope of this rule. EPA expects to continue working with industry, the California Air Resources Board, and other stakeholders to move toward increasingly robust performance tests and methods for determining the efficiency of mobile A/C systems and the related impact on vehicle CO_2 emissions, including a potential adapted SC03 test.

c. Interaction With Title VI Refrigerant Regulations

Title VI of the Clean Air Act deals with the protection of stratospheric ozone. Section 608 establishes a comprehensive program to limit emissions of certain ozone-depleting substances (ODS). The rules promulgated under section 608 regulate the use and disposal of such substances during the service, repair or disposal of appliances and industrial process refrigeration. In addition, section 608 and the regulations promulgated under it, prohibit knowingly venting or releasing ODS during the course of maintaining, servicing, repairing or disposing of an appliance or industrial process refrigeration equipment. Section 609 governs the servicing of motor vehicle A/C systems. The regulations promulgated under section 609 (40 CFR part 82, subpart B) establish standards and requirements regarding the servicing of A/C systems. These regulations include establishing standards for equipment that recovers and recycles (or, for refrigerant blends, only recovers) refrigerant from A/C systems; requiring technician training and certification by an EPA-approved organization; establishing recordkeeping requirements; imposing sales restrictions; and prohibiting the venting of refrigerants. Section 612 requires EPA to review substitutes for class I and class II ozone depleting substances and to consider whether such substitutes will cause an adverse effect to human health or the environment as compared with other substitutes that are currently or potentially available. EPA promulgated regulations for this program in 1992 and those regulations are located at 40 CFR part 82, subpart G. When reviewing substitutes, in addition to finding them acceptable or unacceptable, EPA may also find them acceptable so long as the user meets certain use conditions. For example, all motor vehicle air conditioning systems must have unique fittings and a uniquely colored label for the refrigerant being used in the system.

On September 14, 2006, EPA proposed to approve R–744 (CO_2) for use in motor vehicle A/C systems (71 FR 55140) and on October 19, 2009, EPA proposed to approve the low-GWP refrigerant HFO–1234yf for these systems (74 FR 53445), both subject to certain requirements. Final action on both of these proposals is expected later this year. EPA previously issued a final rule allowing the use of HFC–152a as a refrigerant in motor vehicle A/C systems subject to certain requirements (June 12, 2008; 73 FR 33304). As discussed above, manufacturers transitioning to any of the approved refrigerants would be eligible for A/C Leakage Credits, the value of which would depend on the GWP of their refrigerant and the degree of leakage reduction of their systems.

EPA views this rule as complementing these Title VI programs, and not conflicting with them. To the extent that manufacturers choose to reduce refrigerant leakage in order to earn A/C Leakage Credits, this will dovetail with the Title VI section 609 standards which apply to maintenance events, and to end-of-vehicle life disposal. In fact, as noted, a benefit of the A/C credit provisions is that there should be fewer and less impactive maintenance events for MVACs, since there will be less leakage. In addition, the credit provisions will not conflict (or overlap) with the Title VI section 609 standards. EPA also believes the menu of leak control technologies described in this rule will complement the section 612 requirements, because these control technologies will help ensure that HFC–134a (or other refrigerants) will be used in a manner that further minimizes potential adverse

effects on human health and the environment.

2. Flexible Fuel and Alternative Fuel Vehicle Credits

EPA is finalizing its proposal to allow flexible-fuel vehicles (FFVs) and alternative fuel vehicles to generate credits for purposes of the GHG rule starting in the 2012 model year. FFVs are vehicles that can run on both an alternative fuel and a conventional fuel. Most FFVs are E85 vehicles, which can run on a mixture of up to 85 percent ethanol and gasoline. Dedicated alternative fuel vehicles are vehicles that run exclusively on an alternative fuel (*e.g.,* compressed natural gas). These credits are designed to complement the treatment of FFVs under CAFE, consistent with the emission reduction objectives of the CAA. As explained at proposal, EPCA includes an incentive under the CAFE program for production of dual-fueled vehicles or FFVs, and dedicated alternative fuel vehicles.[216] For FFVs and dual-fueled vehicles, the EPCA/EISA credits have three elements: (1) The assumption that the vehicle is operated 50% of the time on the conventional fuel and 50% of the time on the alternative fuel, (2) that 1 gallon of alternative fuel is treated as 0.15 gallon of fuel, essentially increasing the fuel economy of a vehicle on alternative fuel by a factor of 6.67, and (3) a "cap" provision that limits the maximum fuel economy increase that can be applied to a manufacturer's overall CAFE compliance value for all CAFE compliance categories (*i.e.,* domestic passenger cars, import passenger cars, and light trucks) to 1.2 mpg through 2014 and 1.0 mpg in 2015. EPCA's provisions were amended by the EISA to extend the period of availability of the FFV credits, but to begin phasing them out by annually reducing the amount of FFV credits that can be used in demonstrating compliance with the CAFE standards.[217] EPCA does not premise the availability of the FFV credits on actual use of alternative fuel. Under EPCA, after MY 2019 no FFV credits will be available for CAFE compliance.[218] Under EPCA, for dedicated alternative fuel vehicles, there are no limits or phase-out. As proposed, FFV and Alternative Fuel Vehicle Credits will be calculated as a part of the calculation of a manufacturer's overall fleet average fuel economy and fleet average carbon-related exhaust emissions (§ 600.510–12).

Manufacturers supported the inclusion of FFV credits in the program. Chrysler noted that the credits encourage manufacturers to continue production of vehicles capable of running on alternative fuels as the production and distribution systems of such fuels are developed. Chrysler believes the lower carbon intensity of such fuels is an opportunity for further greenhouse gas reductions and increased energy independence, and the continuance of such incentives recognizes the important potential of this technology to reduce GHGs. Toyota noted that because actions taken by manufacturers to comply with EPA's regulation will, to a large extent, be the same as those taken to comply with NHTSA's CAFE regulation, it is appropriate for EPA to consider flexibilities contained in the CAFE program that clearly impact product plans and technology deployment plans already in place or nearly in place. Toyota believes that adopting the FFV credit for a transitional period of time appears to recognize this reality, while providing a pathway to eventually phase-out the flexibility.

As proposed, electric vehicles (EVs) or plug-in hybrid electric vehicles (PHEVs) are not eligible to generate this type of credit. These vehicles are covered by the advanced technology vehicle incentives provisions described in Section III.C.3, so including them here would lead to a double counting of credits.

a. Model Year 2012–2015 Credits

i. FFVs

For the GHG program, EPA is allowing FFV credits corresponding to the amounts allowed by the amended EPCA but only during the period from MYs 2012 to 2015. (As discussed below in Section III.E., EPA is not allowing CAFE-based FFV credits to be generated as part of the early credits program.) As noted at proposal, several manufacturers have already taken the availability of FFV credits into account in their near-term future planning for CAFE and this reliance indicates that these credits need to be considered in assessing necessary lead time for the CO_2 standards. Manufacturers commented that the credits are necessary in allowing them to transition to the new standards. EPA thus believes that allowing these credits, in the near term, would help provide adequate lead time for manufacturers to implement the new multi-year standards, but that for the longer term there is adequate lead time without the use of such credits. This will also tend to harmonize the GHG and the CAFE program during these interim years. As discussed below, EPA is requiring for MY 2016 and later that manufacturers will need to reliably estimate the extent to which the alternative fuel is actually being used by vehicles in order to count the alternative fuel use in the vehicle's CO_2 emissions level determination. Beginning in MY 2016, the FFV credits as described above for MY 2012–2015 will no longer be available for EPA's GHG program. Rather, GHG compliance values will be based on actual emissions performance of the FFV on conventional and alternative fuels, weighted by the actual use of these fuels in the FFVs.

As with the CAFE program, EPA will base MY 2012–2015 credits on the assumption that the vehicles would operate 50% of the time on the alternative fuel and 50% of the time on conventional fuel, resulting in CO_2 emissions that are based on an arithmetic average of alternative fuel and conventional fuel CO_2 emissions.[219] In addition, the measured CO_2 emissions on the alternative fuel will be multiplied by a 0.15 volumetric conversion factor which is included in the CAFE calculation as provided by EPCA. Through this mechanism a gallon of alternative fuel is deemed to contain 0.15 gallons of fuel. For example, for a flexible-fuel vehicle that emitted 330 g/mi CO_2 operating on E85 and 350 g/mi CO_2 operating on gasoline, the resulting CO_2 level to be used in the manufacturer's fleet average calculation would be:

$$CO_2 = \frac{[(330 \times 0.15) + 350]}{2} = 199.8 g/mi$$

EPA understands that by using the CAFE approach—including the 0.15 factor—the CO_2 emissions value for the vehicle is calculated to be significantly lower than it actually would be otherwise, even if the vehicle were assumed to operate on the alternative fuel at all times. This represents a "credit" being provided to FFVs.

EPA notes also that the above equation and example are based on an FFV that is an E85 vehicle. EPCA, as amended by EISA, also establishes the use of this approach, including the 0.15 factor, for all alternative fuels, not just

[216] 49 U.S.C. 32905.

[217] *See* 49 U.S.C. 32906. The mechanism by which EPCA provides an incentive for production of FFVs is by specifying that their fuel economy is determined using a special calculation procedure that results in those vehicles being assigned a higher fuel economy level than would otherwise occur. 49 U.S.C. 32905(b). This is typically referred to as an FFV credit.

[218] 49 U.S.C. 32906.

[219] 49 U.S.C. 32905(b).

E85.[220] The 0.15 factor is used for B–20 (20 percent biofuel and 80 percent diesel) FFVs. EPCA also establishes this approach, including the 0.15 factor, for gaseous-fueled dual-fueled vehicles, such as a vehicle able to operate on gasoline and CNG.[221] (For natural gas dual-fueled vehicles, EPCA establishes a factor of 0.823 gallons of fuel for every 100 cubic feet a natural gas used to calculate a gallons equivalent.[222]) The EISA's use of the 0.15 factor in this way provides a similar regulatory treatment across the various types of alternative fuel vehicles. EPA also will use the 0.15 factor for all FFVs in order not to disrupt manufacturers' near-term compliance planning and assure sufficient lead time. EPA, in any case, expects the vast majority of FFVs to be E85 vehicles, as is the case today.

The FFV credit limits for CAFE are 1.2 mpg for model years 2012–2014 and 1.0 mpg for model year 2015.[223] In CO_2 terms, these CAFE limits translate to declining CO_2 credit limits over the four model years, as the CAFE standards increase in stringency. As the CAFE standard increases numerically, the limit becomes a smaller fraction of the standard. EPA proposed, but is not adopting, credit limits based on the overall industry average CO_2 standards for cars and trucks. EPA also requested comments on basing the calculated CO_2 credit limits on the individual manufacturer fleet-average standards calculated from the footprint curves. EPA received comment from one manufacturer supporting this approach. EPA also received comments from another manufacturer recommending that the credit limits for an individual manufacturer be based instead on that manufacturer's fleet average performance. The commenter noted that this approach is in line with how CAFE FFV credit limits are applied. This is due to the fact that the GHG-equivalent of the CAFE 1.2 mpg cap will vary due to the non-linear relationship between fuel economy and GHGs/fuel consumption. EPA agrees with this approach since it best harmonizes how credit limits are determined in CAFE. EPA intended and continues to believe it is appropriate to provide essentially the same FFV credits under both programs for MYs 2012–2015. Therefore, EPA is finalizing FFV credits limits for MY 2012–2015 based on a manufacturer's fleet-average performance. For example, if a manufacturer's 2012 car fleet average emissions performance was 260 g/mile (34.2 mpg), the credit limit in CO_2 terms would be 9.5 g/mile (34.2 mpg − 1.2 mpg = 33.0 mpg = 269.5 g/mile) and if it were 270 g/mile the limit would be 10.2 g/mile.

ii. Dedicated Alternative Fuel Vehicles

As proposed, EPA will calculate CO_2 emissions from dedicated alternative fuel vehicles for MY 2012–2015 by measuring the CO_2 emissions over the test procedure and multiplying the results by the 0.15 conversion factor described above. For example, for a dedicated alternative fuel vehicle that would achieve 330 g/mi CO_2 while operating on alcohol (ethanol or methanol), the effective CO_2 emissions of the vehicle for use in determining the vehicle's CO_2 emissions would be calculated as follows:

$$CO_2 = 330 \times 0.15 = 49.5\ g/mi$$

b. Model Years 2016 and Later

i. FFVs

EPA is treating FFV credits the same as under EPCA for model years 2012–2015, but is applying a different approach starting with model year 2016. EPA recognizes that under EPCA automatic FFV credits are entirely phased out of the CAFE program by MY 2020, and apply in the prior model years with certain limitations, but without a requirement that the manufacturers demonstrate actual use of the alternative fuel. Unlike EPCA, CAA section 202(a) does not mandate that EPA treat FFVs in a specific way. Instead EPA is required to exercise its own judgment and determine an appropriate approach that best promotes the goals of this CAA section. Under these circumstances, EPA will treat FFVs for model years 2012–2015 the same as under EPCA, as part of providing sufficient lead time given manufacturers' compliance strategies which rely on the existence of these EPCA statutory credits, as explained above.

Starting with model year 2016, as proposed, EPA will no longer allow manufacturers to base FFV emissions on the use of the 0.15 factor credit described above, and on the use of an assumed 50% usage of alternative fuel. Instead, EPA believes the appropriate approach is to ensure that FFV emissions are based on demonstrated emissions performance. This will promote the environmental goals of the final program. EPA received several comments in support of EPA's proposal to use this approach instead of the EPCA approach for MY 2016 and later. Under the EPA program in MY 2016 and later, manufacturers will be allowed to base an FFV's emissions compliance value in part on the vehicle test values run on the alternative fuel, for that portion of its fleet for which the manufacturer demonstrates utilized the alternative fuel in the field. In other words, the default is to assume FFVs operate on 100% gasoline, and the emissions value for the FFV vehicle will be based on the vehicle's tested value on gasoline. However, if a manufacturer can demonstrate that a portion of its FFVs are using an alternative fuel in use, then the FFV emissions compliance value can be calculated based on the vehicle's tested value using the alternative fuel, prorated based on the percentage of the fleet using the alternative fuel in the field. An example calculation is described below. EPA believes this approach will provide an actual incentive to ensure that such fuels are used. The incentive arises since actual use of the flexible fuel typically results in lower tailpipe GHG emissions than use of gasoline and hence improves the vehicles' performance, making it more likely that its performance will improve a manufacturers' average fleetwide performance. Based on existing certification data, E85 FFV CO_2 emissions are typically about 5 percent lower on E85 than CO_2 emissions on 100 percent gasoline. Moreover, currently there is little incentive to optimize CO_2 performance for vehicles when running on E85. EPA believes the above approach would provide such an incentive to manufacturers and that E85 vehicles could be optimized through engine redesign and calibration to provide additional CO_2 reductions.

Under the EPCA credit provisions, there is an incentive to produce FFVs but no actual incentive to ensure that the alternative fuels are used, or that actual vehicle fuel economy improves. GHG and energy security benefits are only achieved if the alternative fuel is actually used and (for GHGs) that performance improves, and EPA's approach for MY 2016 and beyond will now provide such an incentive. This approach will promote greater use of alternative fuels, as compared to a situation where there is a credit but no usage requirement. This is also consistent with the agency's overall commitment to the expanded use of renewable fuels. Therefore, EPA is basing the FFV program for MYs 2016 and thereafter on real-world reductions: *i.e.,* actual vehicle CO_2 emissions levels based on actual use of the two fuels, without the 0.15 conversion factor specified under EISA.

[220] 49 U.S.C. 32905(c).
[221] 49 U.S.C. 32905(d).
[222] 49 U.S.C. 32905(c).
[223] 49 U.S.C. 32906(a).

For 2016 and later model years, EPA will therefore treat FFVs similarly to conventional fueled vehicles in that FFV emissions would be based on actual CO_2 results from emission testing on the fuels on which it operates. In calculating the emissions performance of an FFV, manufacturers may base FFV emissions on vehicle testing based on the alternative fuel emissions, if they can demonstrate that the alternative fuel is actually being used in the vehicles. Performance will otherwise be calculated assuming use only of conventional fuel. The manufacturer must establish the ratio of operation that is on the alternative fuel compared to the conventional fuel. The ratio will be used to weight the CO_2 emissions performance over the 2-cycle test on the two fuels. The 0.15 conversion factor will no longer be included in the CO_2 emissions calculation. For example, for a flexible-fuel vehicle that emitted 300 g/mi CO_2 operating on E85 ten percent of the time and 350 g/mi CO_2 operating on gasoline ninety percent of the time, the CO_2 emissions for the vehicles to be used in the manufacturer's fleet average would be calculated as follows:

$$CO_2 = (300 \times 0.10) + (350 \times 0.90) = 345 \text{ g/mi}$$

The most complex part of this approach is to establish what data are needed for a manufacturer to accurately demonstrate use of the alternative fuel, where the manufacturer intends for its performance to be calculated based on some use of alternative fuels. One option EPA is finalizing is establishing a rebuttable presumption using a national average approach based on national E85 fuel use. Manufacturers could use this value along with their vehicle emissions results demonstrating lower emissions on E85 to determine the emissions compliance values for FFVs sold by manufacturers under this program. For example, national E85 volumes and national FFV sales may be used to prorate E85 use by manufacturer sales volumes and FFVs already in-use. Upon a manufacturer's written request, EPA will conduct an analysis of vehicle miles travelled (VMT) by year for all FFVs using its emissions inventory MOVES model. Using the VMT ratios and the overall E85 sales, E85 usage will be assigned to each vehicle. This method accounts for the VMT of new FFVs and FFVs already in the existing fleet using VMT data in the model. The model will then be used to determine the ratio of E85 and gasoline for new vehicles being sold. Fluctuations in E85 sales and FFV sales will be taken into account to adjust the manufacturers' E85 actual use estimates annually. EPA plans to make this assigned fuel usage factor available through guidance prior to the start of MY 2016 and adjust it annually as necessary. EPA believes this is a reasonable way to apportion E85 use across the fleet.

If manufacturers decide not to use EPA's assigned fuel usage based on the national average analysis, they have a second option of presenting their own data for consideration as the basis for evaluating fuel usage. Manufacturers have suggested demonstrations using vehicle on-board data gathering through the use of on-board sensors and computers. California's program allows FFV credits based on FFV use and envisioned manufacturers collecting fuel use data from vehicles in fleets with on-site refueling. Manufacturers must present a statistical analysis of alternative fuel usage data collected on actual vehicle operation. EPA is not attempting to specify how the data is collected or the amount of data needed. However, the analysis must be based on sound statistical methodology. Uncertainty in the analysis must be accounted for in a way that provides reasonable certainty that the program does not result in loss of emissions reductions.

EPA received comments that the 2016 and later FFV emissions performance methodology should be based on the life cycle emissions (*i.e.,* including the upstream GHG emissions associated with fuel feedstocks, production, and transportation) associated with the use of the alternative fuel. Commenters are concerned that the use of ethanol will not result in lower GHGs on a lifecycle basis. After considering these comments, EPA is not including lifecycle emissions in the calculation of vehicle credits. EPA continues to believe that it is appropriate to base credits for MY 2012–2015 on the EPCA/CAFE credits and to base compliance values for MY 2016 on the demonstrated tailpipe emissions performance on gasoline and E85, and is finalizing this approach as proposed. EPA recently finalized its RFS2 rulemaking which addresses lifecycle emissions from ethanol and the upstream GHG benefits of E85 use are already captured by this program.[224]

ii. Dedicated Alternative Fuel Vehicles

As proposed, for model years 2016 and later dedicated alternative fuel vehicles, CO_2 will be measured over the 2-cycle test in order to be included in a manufacturer's fleet average CO_2 calculations. As noted above, this is different than CAFE methodology which provides a methodology for calculating a petroleum-based mpg equivalent for alternative fuel vehicles so they can be included in CAFE. However, because CO_2 can be measured directly from alternative fuel vehicles over the test procedure, EPA believes this is the simplest and best approach since it is consistent with all other vehicle testing under the CO_2 program. EPA did not receive comments on this approach.

3. Advanced Technology Vehicle Incentives for Electric Vehicles, Plug-in Hybrids, and Fuel Cell Vehicles

EPA is finalizing provisions that provide a temporary regulatory incentive for the commercialization of certain advanced vehicle power trains—electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs), and fuel cell vehicles (FCVs)—for model year 2012–2016 light-duty and medium-duty passenger vehicles.[225] The purpose of these provisions is to provide a temporary incentive to promote technologies which have the potential to produce very large GHG reductions in the future, but which face major challenges such as vehicle cost, consumer acceptance, and the development of low-GHG fuel production infrastructure. The tailpipe GHG emissions from EVs, PHEVs operated on grid electricity, and hydrogen-fueled FCVs are zero, and traditionally the emissions of the vehicle itself are all that EPA takes into account for purposes of compliance with standards set under section 202(a). Focusing on vehicle tailpipe emissions has not raised any issues for criteria pollutants, as upstream emissions associated with production and distribution of the fuel are addressed by comprehensive regulatory programs focused on the upstream sources of those emissions.[226] At this time, however, there is no such comprehensive program addressing upstream emissions of GHGs, and the upstream GHG emissions associated with production and distribution of electricity are higher than the corresponding upstream GHG emissions of gasoline or other petroleum based fuels. In the future, if there were a program to comprehensively control upstream GHG emissions, then the zero tailpipe levels from these vehicles have the potential to produce very large GHG reductions, and to transform the

[224] 75 FR 14670 (March 26, 2010).

[225] *See* final regulations at 40 CFR 86.1866–12(a).

[226] In this section, "upstream" means all fuel-related GHG emissions prior to the fuel being introduced to the vehicle.

transportation sector's contribution to nationwide GHG emissions.

This temporary incentive program applies only for the model years 2012–2016 covered by this final rule. EPA will reassess the issue of how to address EVs, PHEVs, and FCVs in rulemakings for model years 2017 and beyond, based on the status of advanced technology vehicle commercialization, the status of upstream GHG emissions control programs, and other relevant factors.

In the Joint Notice of Intent, EPA stated that "EPA is currently considering proposing additional credit opportunities to encourage the commercialization of advanced GHG/fuel economy control technology such as electric vehicles and plug-in hybrid electric vehicles. These 'super credits' could take the form of a multiplier that would be applied to the number of vehicles sold such that they would count as more than one vehicle in the manufacturer's fleet average." [227] Following through, EPA proposed two mechanisms by which these vehicles would earn credits: (1) A zero grams/mile compliance value for EVs, FCVs, and for PHEVs when operated on grid electricity, and (2) a vehicle multiplier in the range of 1.2 to 2.0.[228]

The zero grams/mile compliance value for EVs (and for PHEVs when operated on grid electricity, as well as for FCVs which involve similar upstream GHG issues with respect to hydrogen production) is an incentive that operates like a credit because, while it accurately accounts for tailpipe GHG emissions, it does not reflect the increase in upstream GHG emissions associated with the electricity used by EVs compared to the upstream GHG emissions associated with the gasoline or diesel fuel used by conventional vehicles.[229] For example, based on GHG emissions from today's national average electricity generation (including GHG emissions associated with feedstock extraction, processing, and transportation) and other key assumptions related to vehicle electricity consumption, vehicle charging losses, and grid transmission losses, a midsize EV might have an upstream GHG emissions of about 180 grams/mile, compared to the upstream GHG emissions of a typical midsize gasoline car of about 60 grams/mile. Thus, the EV would cause a net upstream GHG emissions increase of about 120 grams/mile (in general, the net upstream GHG increase would be less for a smaller EV and more for a larger EV). The zero grams/mile compliance value provides an incentive because it is less than the 120 grams/mile value that would fully account for the net increase in GHG emissions, counting upstream emissions.[230] The net upstream GHG impact could change over time, of course, based on changes in electricity generation or gasoline production.

The proposed vehicle multiplier incentive would also have operated like a credit as it would have allowed an EV, PHEV, or FCV to count as more than one vehicle in the manufacturer's fleet average. For example, combining a multiplier of 2.0 with a zero grams/mile compliance value for an EV would allow that EV to be counted as two vehicles, each with a zero grams/mile compliance value, in the manufacturer's fleet average calculations. In effect, a multiplier of 2.0 would double the overall credit associated with an EV, PHEV, or FCV.

EPA explained in the proposal that the potential for large future emissions benefits from these technologies provides a strong reason for providing incentives at this time to promote their commercialization in the 2012–2016 model years. At the same time, EPA acknowledged that the zero grams/mile compliance value did not account for increased upstream GHG emissions. EPA requested comment on providing some type of incentive, the appropriateness of both the zero grams/mile and vehicle multiplier incentive mechanisms, and on any alternative approaches for addressing advanced technology vehicle incentives. EPA received many comments on these issues, which will be briefly summarized below.

Although some environmental organizations and State agencies supported the principle of including some type of regulatory incentive mechanism, almost all of their comments were opposed to the combination of both the zero grams/mile compliance value and multipliers in the higher end of the proposed range of 1.2 to 2.0. The California Air Resources Board stated that the proposed credits "are excessive" and the Union of Concerned Scientists stated that it "strongly objects" to the approach that lacks "technical justification" by not "accounting for upstream emissions." The Natural Resources Defense Council (NRDC) stated that the credits could "undermine the emissions benefits of the program and will have the unintended consequence of slowing the development of conventional cleaner vehicle emission reduction technologies into the fleet." NRDC, along with several other commenters who made the same point, cited an example based on Nissan's public statements that it plans on producing up to 150,000 Nissan Leaf EVs in the near future at its plant in Smyrna, Tennessee.[231] NRDC's analysis showed that if EVs were to account for 10% of Nissan's car fleet in 2016, the combination of the zero grams/mile and 2.0 multiplier would allow Nissan to make only relatively small improvements to its gasoline car fleet and still be in compliance. NRDC described a detailed methodology for calculating "true full fuel cycle emissions impacts" for EVs. The Sierra Club suggested that the zero grams/mile credit would "taint" EVs as the public comes to understand that these vehicles are not zero-GHG vehicles, and that the zero grams/mile incentive would allow higher gasoline vehicle GHG emissions.

Most vehicle manufacturers were supportive of both the zero grams/mile compliance value and a higher vehicle multiplier. The Alliance of Automobile Manufacturers supported zero grams/mile "since customers need to receive a clear signal that they have made the right choice by preferring an EV, PHEV, or EREV. * * * However, the Alliance recognizes the need for a comprehensive approach with shared responsibility in order to achieve an overall carbon reduction." Nissan claimed that zero grams/mile is "legally required," stating that EPA's 2-cycle test procedures do not account for upstream GHG emissions, that accounting for upstream emissions from electric vehicles but not from other vehicles would be arbitrary, and that including upstream GHG would "disrupt the careful balancing embedded into the National Program." Several other manufacturers, including Ford, Chrysler, Toyota, and Mitsubishi, also supported the proposed zero grams/mile compliance value. BMW suggested a compliance value approach similar to

[227] Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards, 74 FR 24007, 24011 (May 22, 2009).

[228] 74 FR 49533–34.

[229] *See* 74 FR 49533 ("EPA recognizes that for each EV that is sold, in reality the total emissions off-set relative to the typical gasoline or diesel powered vehicle is not zero, as there is a corresponding increase in upstream CO_2 emissions due to an increase in the requirements for electric utility generation").

[230] This 120 grams/mile value for a midsize EV is approximately similar to the compliance value for today's most efficient conventional hybrid vehicle, so the EV would not be significantly more "GHG-positive" than the most efficient conventional hybrid counterpart under a full accounting approach. It should be noted that these emission levels would still be well below the footprint targets for the vehicles in question.

[231] "Secretary Chu Announces Closing of $1.4 Billion Loan to Nissan," Department of Energy, January 28, 2010, *http://www.energy.gov/news/8581.htm*. EPA Docket EPA–HQ–OAR–2009–0472.

that used for CAFE compliance (described below), which would yield a very low, non-zero grams/mile compliance value. Honda opposed the zero grams/mile incentive. Honda suggested that EPA should fully account for upstream GHG and "should separate incentives and credits from the measurement of emissions." Automakers universally supported higher multipliers, many higher than the maximum 2.0 level proposed by EPA. Honda suggested a multiplier of 16.0 for FCVs. Mitsubishi supported the concept of larger, temporary incentives until advanced technology vehicle sales achieved a 10% market share. Finally, some commenters suggested that other technologies should also receive incentives, such as diesel vehicles, hydrogen-fueled internal combustion engines, and natural gas vehicles.

Based on a careful consideration of these comments, EPA is modifying its proposed advanced technology vehicle incentive program for EVs, PHEVs, and FCVs produced in 2012–2016. EPA is not extending the program to include additional technologies at this time. The final incentive program, and our rationale for it, are described below.

One, the incentive program retains the zero grams/mile value for EVs and FCVs, and for PHEVs when operated on grid electricity, subject to vehicle production caps discussed below. EPA acknowledges that, based on current electricity and hydrogen production processes, that EVs, PHEVs, and FCVs yield higher upstream GHG emissions than comparable gasoline vehicles. But EPA reiterates its support for temporarily rewarding advanced emissions control technologies by foregoing modest emissions reductions in the short term in order to lay the foundation for the potential for much larger emission reductions in the longer term.[232] EPA notes that EVs, PHEVs, and FCVs are potential GHG "game changers" if major cost and consumer barriers can be overcome and if there is a nationwide transformation to low-GHG electricity (or hydrogen, in the case of FCVs).

Although EVs and FCVs will have compliance values of zero grams/mile, PHEV compliance values will be determined by combining zero grams/mile for grid electricity operation with the GHG emissions from the 2-cycle test results during operation on liquid fuel, and weighting these values by the percentage of miles traveled that EPA believes will be performed on grid electricity and on liquid fuel, which will vary for different PHEVs. EPA is currently considering different approaches for determining the weighting factor to be used in calculating PHEV GHG emissions compliance values. EPA will consider the work of the Society of Automotive Engineers Hybrid Technical Standards Committee, as well as other relevant factors. EPA will issue a final rule on this methodology by the fall of 2010, when EPA expects some PHEVs to initially enter the market.

EPA agrees with the comments by the environmental organizations, States, and Honda that the zero grams/mile compliance value will reduce the overall GHG benefits of the program. However, EPA believes these reductions in GHG benefits will be relatively small based on the projected production of EVs, PHEVs, and FCVs during the 2012–2016 timeframe, along with the other changes that we are making in the incentive program. EPA believes this modest potential for reduction in near-term emissions control is more than offset by the potential for very large future emissions reductions that commercialization of these technologies could promote.

Two, the incentive program will not include any vehicle multipliers, *i.e.,* an EV's zero grams/mile compliance value will count as one vehicle in a manufacturer's fleet average, not as more than one vehicle as proposed. EPA has concluded that the combination of the zero grams/mile and multiplier credits would be excessive. Compared to the maximum multiplier of 2.0 that EPA had proposed, dropping this multiplier reduces the aggregate impact of the overall credit program by a factor of two (less so for lower multipliers, of course).

Three, EPA is placing a cumulative cap on the total production of EVs, PHEVs, and FCVs for which an individual manufacturer can claim the zero grams/mile compliance value during model years 2012–2016. The cumulative production cap will be 200,000 vehicles, except those manufacturers that sell at least 25,000 EVs, PHEVs, and FCVs in MY 2012 will have a cap of 300,000 vehicles for MY 2012–2016. This higher cap option is an additional incentive for those manufacturers that take an early leadership role in aggressively and successfully marketing advanced technology vehicles. These caps are a second way to limit the potential GHG benefit losses associated with the incentive program and therefore are another response to the concerns that the proposed incentives were excessive and could significantly undermine the program's GHG benefits. If, for example, 500,000 EVs were produced in 2012–2016 that qualified for the zero grams/mile compliance value, the loss in GHG benefits due to this program would be about 25 million metric tons, or less than 3 percent of the total projected GHG benefits of this program.[233] The rationale for these caps is that the incentive for EVs, PHEVs, and FCVs is most critical when individual automakers are beginning to introduce advanced technologies in the market, and less critical once individual automakers have successfully achieved a reasonable market share and technology costs decline due to higher production volumes and experience. EPA believes that cap levels of 200,000–300,000 vehicles over a five model year period are reasonable, as production greater than this would indicate that the manufacturer has overcome at least some of the initial market barriers to these advanced technologies. Further, EPA believes that it is unlikely that many manufacturers will approach these cap levels in the 2012–2016 timeframe.[234]

Production beyond the cumulative vehicle production cap for a given manufacturer in MY 2012–2016 would have its compliance values calculated according to a methodology that accounts in full for the net increase in upstream GHG emissions. For an EV, for example, this would involve: (1) Measuring the vehicle electricity consumption in watt-hours/mile over the 2-cycle test (in the example introduced earlier, a midsize EV might have a 2-cycle test electricity consumption of 230 watt-hours/mile), (2) adjusting this watt-hours/mile value upward to account for electricity losses during transmission and vehicle charging (dividing 230 watt-hours/mile by 0.93 to account for grid/transmission losses and by 0.90 to reflect losses during vehicle charging yields a value of 275 watt-hours/mile), (3) multiplying the adjusted watt-hours/mile value by a

[232] EPA has adopted this strategy in several of its most recent and important mobile source rulemakings, such as its Tier 2 Light-Duty Vehicle, 2007 Heavy-Duty Highway, and Tier 4 Nonroad Diesel rulemakings.

[233] *See* Regulatory Impact Analysis, Appendix 5.B. While it is, of course, impossible to predict the number of EVs, PHEVs, and FCVs that will be produced between 2012 and 2016 with absolute certainty, EPA believes that 500,000 "un-capped" EVs is an optimistic scenario. Fewer EVs, or a combination of 500,000 EVs and PHEVs, would lessen the short-term reduction in GHG benefits. Production of more than 500,000 "un-capped" EVs would increase the short-term reduction in GHG benefits.

[234] Fundamental power train changes in the automotive market typically evolve slowly over time. For example, over ten years after the U.S. introduction of the first conventional hybrid electric vehicle, total hybrid sales are approximately 300,000 units per year.

nationwide average electricity upstream GHG emissions rate of 0.642 grams/watt-hour at the powerplant [235] (275 watt-hours/mile multiplied by 0.642 grams GHG/watt-hour yields 177 grams/mile), and 4) subtracting the upstream GHG emissions of a comparable midsize gasoline vehicle of 56 grams/mile to reflect a true net increase in upstream GHG emissions (177 grams/mile for the EV minus 56 grams/mile for the gasoline vehicle yields a net increase and EV compliance value of 121 grams/mile).[236] [237] The full accounting methodology for the portion of PHEV operation on grid electricity would use this same approach.

EPA projects that the aggregate impact of the incentive program on advanced technology vehicle GHG compliance values will be similar to the way advanced technologies are treated under DOT's CAFE program. In the CAFE program, the mpg value for an EV is determined using a "petroleum equivalency factor" that has a 1/0.15 factor built into it similar to the flexible fuel vehicle credit.[238] For example, under current regulations, an EV with a 2-cycle electricity consumption of 230 watt-hours/mile would have a CAFE rating of about 360 miles per gallon, which would be equivalent to a gasoline vehicle GHG emissions value of 25 grams/mile, which is close to EPA's zero grams/mile for EV production that is below an individual automaker's cumulative vehicle production cap. The exception would be if a manufacturer exceeded its cumulative vehicle production cap during MY 2012–2016. Then, the same EV would have a GHG compliance value of about 120 grams/mile, which would be significantly higher than the 25 gram/mile implied by the 360 mile/gallon CAFE value.

EPA disagrees with Nissan that excluding upstream GHGs is legally required under section 202(a)(1). In this rulemaking, EPA is adopting standards under section 202(a)(1), which provides EPA with broad discretion in setting emissions standards. This includes authority to structure the emissions standards in a way that provides an incentive to promote advances in emissions control technology. This discretion includes the adjustments to compliance values adopted in the final rule, the multipliers we proposed, and other kinds of incentives. EPA recognizes that we have not previously made adjustments to a compliance value to account for upstream emissions in a section 202(a) vehicle emissions standard, but that does not mean we do not have authority to do so in this case. In addition, EPA is not directly regulating upstream GHG emissions from stationary sources, but instead is deciding how much value to assign to a motor vehicle for purposes of compliance calculations with the motor vehicle standard. While the logical place to start is the emissions level measured under the test procedure, section 202(a)(1) does not require that EPA limit itself to only that level. For vehicles above the production volume cap described above, EPA will adjust the measured value to a level that reflects the net difference in upstream GHG emissions compared to a comparable conventional vehicle. This will account for the actual GHG emissions increase associated with the use of the EV. As shown above, upstream GHG emissions attributable to increased electricity production to operate EVs or PHEVs currently exceed the upstream GHG emissions attributable to gasoline vehicles. There is a rational basis for EPA to account for this net difference, as that best reflects the real world effect on the air pollution problem we are addressing. For vehicles above the cap, EPA is reasonably and fairly accounting for the incremental increase in upstream GHG emissions from both the electric vehicles and the conventional vehicles. EPA is not, as Nissan suggested, arbitrarily counting upstream emissions for electric vehicles but not for conventional fuel vehicles.

EPA recognizes that every motor vehicle fuel and fuel production process has unique upstream GHG emissions impacts. EPA has discretion in this rulemaking under section 202(a) on whether to account for differences in net upstream GHG emissions relative to gasoline produced from oil, and intends to only consider upstream GHG emissions for those fuels that have significantly higher or lower GHG emissions impacts. At this time, EPA is only making such a determination for electricity, given that, as shown above in the example for a midsize car, electricity upstream GHG emissions are about three times higher than gasoline upstream GHG emissions. For example, the difference in upstream GHG emissions for both diesel fuel from oil and CNG from natural gas are relatively small compared to differences associated with electricity. Nor is EPA arbitrarily ignoring upstream GHG emissions of flexible fuel vehicles (FFVs) that can operate on E85. Data show that, on average, FFVs operate on gasoline over 99 percent of the time, and on E85 fuel less than 1 percent of the time.[239] EPA's recently promulgated Renewable Fuel Standard Program shows that, with respect to aggregate lifecycle emissions including non-tailpipe GHG emissions (such as feedstock growth, transportation, fuel production, and land use), lifecycle emissions for ethanol from corn using advanced production technologies are about 20 percent less GHG than gasoline from oil.[240] Given this difference, and that E85 is used in FFVs less than 1 percent of the time, EPA has concluded that it is not necessary to adopt a more complicated upstream accounting for FFVs. Accordingly, EPA's incentive approach here is both reasonable and authorized under section 202(a)(1).

In summary, EPA believes that this program for MY 2012–2016 strikes a reasoned balance by providing a temporary regulatory incentive to help promote commercialization of advanced vehicle technologies which are potential game-changers, but which also face major barriers, while effectively minimizing potential GHG losses by dropping the proposed multiplier and adding individual automaker

[235] The nationwide average electricity upstream GHG emissions rate of 0.642 grams GHG/watt-hour was calculated from 2005 nationwide powerplant data for CO_2, CH_4, and N_2O emissions from eGRID2007 (*http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html*), converting to CO_2 -e using Global Warming Potentials of 25 for CH_4 and 298 for N_2O, and multiplying by a factor of 1.06 to account for GHG emissions associated with feedstock extraction, transportation, and processing (based on Argonne National Laboratory's The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) Model, Version 1.8c.0, available at *http://www.transportation.anl.gov/modeling_simulation/GREET/*). EPA Docket EPA–HQ–OAR–2009–0472. EPA recognizes that there are many issues involved with projecting the electricity upstream GHG emissions associated with future EV and PHEV use including, but not limited to, average vs marginal, daytime vs nighttime vehicle charging, geographical differences, and changes in future electricity feedstocks. EPA chose to use the 2005 national average value because it is known and documentable. Values appropriate for future vehicle use may be higher or lower than this value. EPA will reevaluate this value in future rulemakings.

[236] A midsize gasoline vehicle with a footprint of 45 square feet would have a MY 2016 GHG target of about 225 grams/mile; dividing 8887 grams CO_2/gallon of gasoline by 225 grams/mile yields an equivalent fuel economy level of 39.5 mpg; and dividing 2208 grams upstream GHG/gallon of gasoline by 39.5 mpg yields a midsize gasoline vehicle upstream GHG value of 56 grams/mile. The 2208 grams upstream GHG/gallon of gasoline is calculated from 19,200 grams upstream GHG/mmBtu (Renewable Fuel Standard Program, Regulatory Impact Analysis, Section 2.5.8, February 2010) and multiplying by 0.115 mmBtu/gallon of gasoline.

[237] Manufacturers can utilize alternate calculation methodologies if shown to yield equivalent or superior results and if approved in advance by the Administrator.

[238] 65 FR 36987 (June 12, 2000).

[239] Renewable Fuel Standard Program (RFS2), Regulatory Impact Analysis, Section 1.7.4, February 2010.

[240] 75 FR 14670 (March 26, 2010).

production volume caps. In the future, if there were a program to control utility GHG emissions, then these advanced technology vehicles have the potential to produce very large reductions in GHG emissions, and to transform the transportation sector's contribution to nationwide GHG emissions. EPA will reassess the issue of how to address EVs, PHEVs, and FCVs in rulemakings for model years 2017 and beyond based on the status of advanced vehicle technology commercialization, the status of upstream GHG control programs, and other relevant factors.

Finally, the criteria and definitions for what vehicles qualify for the advanced technology vehicle incentives are provided in Section III.E. These definitions for EVs, PHEVs, and FCVs ensure that only credible advanced technology vehicles are provided the incentives.

4. Off-Cycle Technology Credits

As proposed, EPA is adopting an optional credit opportunity intended to apply to new and innovative technologies that reduce vehicle CO_2 emissions, but for which the CO_2 reduction benefits are not significantly captured over the 2-cycle test procedure used to determine compliance with the fleet average standards (*i.e.,* "off-cycle").[241] Eligible innovative technologies are those that are relatively newly introduced in one or more vehicle models, but that are not yet implemented in widespread use in the light-duty fleet. EPA will not approve credits for technologies that are not innovative or do not provide novel approaches to reducing greenhouse gas emissions. Manufacturers must obtain EPA approval for new and innovative technologies at the time of vehicle certification in order to earn credits for these technologies at the end of the model year. This approval must include the testing methodology to be used for quantifying credits. Further, any credits for these off-cycle technologies must be based on real-world GHG reductions not significantly captured on the current 2-cycle tests and verifiable test methods, and represent average U.S. driving conditions.

Similar to the technologies used to reduce A/C system indirect CO_2 emissions by increasing A/C efficiency, eligible technologies would not be primarily active during the 2-cycle test and therefore the associated improvements in CO_2 emissions would not be significantly captured. Because these technologies are not nearly so well developed and understood, EPA is not prepared to consider them in assessing the stringency of the CO_2 standards. However, EPA is aware of some emerging and innovative technologies and concepts in various stages of development with CO_2 reduction potential that might not be adequately captured on the FTP or HFET. EPA believes that manufacturers should be able to generate credit for the emission reductions these technologies actually achieve, assuming these reductions can be adequately demonstrated and verified. Examples include solar panels on hybrids or electric vehicles, adaptive cruise control, and active aerodynamics. EPA believes it would be appropriate to provide an incentive to encourage the introduction of these types of technologies, that bona fide reductions from these technologies should be considered in determining a manufacturer's fleet average, and that a credit mechanism is an effective way to do this. This optional credit opportunity would be available through the 2016 model year.

EPA received comments from a few manufacturers that the "new and innovative" criteria should be broadened. The commenters pointed out that there are technologies already in the marketplace that would provide emissions reductions off-cycle and that their use should be incentivized. One manufacturer suggested that off-cycle credits should be given for start-stop technologies. EPA does not agree that this technology, which EPA's modeling projects will be widely used by manufacturers in meeting the CO_2 standards, should qualify for off-cycle credits. Start-stop technology already achieves a significant CO_2 benefit on the current 2-cycle tests, which is why many manufacturers have announced plans to adopt it across large segments of the fleet. EPA recognizes there may be additional benefits to start-stop technology beyond the 2-cycle tests (*e.g.,* heavy idle use), and that this is likely the case for other technologies that manufacturers will rely on to meet the MY 2012–2016 standards. EPA plans to continue to assess the off-cycle potential for these technologies in the future. However, EPA does not believe that off-cycle credits should be granted for technologies which we expect manufacturers to rely on in widespread use throughout the fleet in meeting the CO_2 standards. Such credits could lead to double counting, as there is already significant CO_2 benefit over the 2-cycle tests. EPA expects that most if not all technologies that reduce CO_2 emission on the 2-cycle test will also reduce CO_2 emissions during the wide variety of in-use operation that is not directly captured in the 2-cycle test. This is no different than what occurs from the control technology on vehicles for criteria pollutants. We expect that the catalytic converter and other emission control technology will operate to reduce emissions throughout in-use driving, and not just when the vehicle is tested on the specified test procedure. The aim for this off-cycle credit provisions is to provide an incentive for technologies that normally would not be chosen as a GHG control strategy, as their GHG benefits are not measured on the specified 2-cycle test. It is not designed to provide credits for technology that does provide significant GHG benefits on the 2-cycle test and as expected will also typically provide GHG benefits in other kinds of operation. Thus, EPA is finalizing the "new and innovative" criteria as proposed. That is, the potential to earn off-cycle credits will be limited to those technologies that are new and innovative, are introduced in only a limited number of vehicle models (*i.e.,* not in widespread use), and are not captured on the current 2-cycle tests. This approach will encourage future innovation, which may lead to the opportunity for future emissions reductions.

As proposed, manufacturers would quantify CO_2 reductions associated with the use of the innovative off-cycle technologies such that the credits could be applied on a g/mile equivalent basis, as is the case with A/C system improvements. Credits must be based on real additional reductions of CO_2 emissions and must be quantifiable and verifiable with a repeatable methodology. As proposed, the technologies upon which the credits are based would be subject to full useful life compliance provisions, as with other emissions controls. Unless the manufacturer can demonstrate that the technology would not be subject to in-use deterioration over the useful life of the vehicle, the manufacturer must account for deterioration in the estimation of the credits in order to ensure that the credits are based on real in-use emissions reductions over the life of the vehicle.

As discussed below, EPA is finalizing a two-tiered process for demonstrating the CO_2 reductions of an innovative and novel technology with benefits not captured by the FTP and HFET test procedures. First, a manufacturer must determine whether the benefit of the technology could be captured using the 5-cycle methodology currently used to determine fuel economy label values. EPA established the 5-cycle test

[241] *See* final regulations at 40 CFR 86.1866–12(d).

methods to better represent real-world factors impacting fuel economy, including higher speeds and more aggressive driving, colder temperature operation, and the use of air conditioning. If this determination is affirmative, the manufacturer must follow the procedures described below (as codified in today's rules). If the manufacturer finds that the technology is such that the benefit is not adequately captured using the 5-cycle approach, then the manufacturer would have to develop a robust methodology, subject to EPA approval, to demonstrate the benefit and determine the appropriate CO_2 gram per mile credit. As discussed below, EPA is also providing opportunity for public comment as part of the approval process for such non-5-cycle credits.

a. Technology Demonstration Using EPA 5-Cycle Methodology

As noted above, the CO_2 reduction benefit of some innovative technologies could be demonstrated using the 5-cycle approach currently used for EPA's fuel economy labeling program. The 5-cycle methodology was finalized in EPA's 2006 fuel economy labeling rule,[242] which provides a more accurate fuel economy label estimate to consumers starting with 2008 model year vehicles. In addition to the FTP and HFET test procedures, the 5-cycle approach folds in the test results from three additional test procedures to determine fuel economy. The additional test cycles include cold temperature operation, high temperature, high humidity and solar loading, and aggressive and high-speed driving; thus these tests could be used to demonstrate the benefit of a technology that reduces CO_2 over these types of driving and environmental conditions. Using the test results from these additional test cycles collectively with the 2-cycle data provides a more precise estimate of the average fuel economy and CO_2 emissions of a vehicle for both the city and highway independently. A significant benefit of using the 5-cycle methodology to measure and quantify the CO_2 reductions is that the test cycles are properly weighted for the expected average U.S. operation, meaning that the test results could be used without further adjustments.

EPA continues to believe that the use of these supplemental cycles may provide a method by which technologies not demonstrated on the baseline 2-cycles can be quantified and is finalizing this approach as proposed. The cold temperature FTP can capture new technologies that improve the CO_2 performance of vehicles during colder weather operation. These improvements may be related to warm-up of the engine or other operation during the colder temperature. An example of such a new, innovative technology is a waste heat capture device that provides heat to the cabin interior, enabling additional engine-off operation during colder weather not previously enabled due to heating and defrosting requirements. The additional engine-off time would result in additional CO_2 reductions that otherwise would not have been realized without the heat capture technology.

Although A/C credits for efficiency improvements will largely be captured in the A/C credits provisions through the credit menu of known efficiency improving components and controls, certain new technologies may be able to use the high temperatures, humidity, and solar load of the SC03 test cycle to accurately measure their impact. An example of a new technology may be a refrigerant storage device that accumulates pressurized refrigerant during driving operation or uses recovered vehicle kinetic energy during deceleration to pressurize the refrigerant. Much like the waste heat capture device used in cold weather, this device would also allow additional engine-off operation while maintaining appropriate vehicle interior occupant comfort levels. SC03 test data measuring the relative impact of innovative A/C-related technologies could be applied to the 5-cycle equation to quantify the CO_2 reductions of the technology.

The US06 cycle may be used to capture innovative technologies designed to reduce CO_2 emissions during higher speed and more aggressive acceleration conditions, but not reflected on the 2-cycle tests. An example of this is an active aerodynamic technology. This technology recognizes the benefits of reduced aerodynamic drag at higher speeds and makes changes to the vehicle at those speeds. The changes may include active front or grill air deflection devices designed to redirect frontal airflow. Certain active suspension devices designed primarily to reduce aerodynamic drag by lowering the vehicle at higher speeds may also be measured on the US06 cycle. To properly measure these technologies on the US06, the vehicle would require unique load coefficients with and without the technologies. The different load coefficient (properly weighted for the US06 cycle) could effectively result in reduced vehicle loads at the higher speeds when the technologies are active. Similar to the previously discussed cycles, the results from the US06 test with and without the technology could then use the 5-cycle methodology to quantify CO_2 reductions.

If the 5-cycle procedures can be used to demonstrate the innovative technology, then the regulatory evaluation/approval process will be relatively simple. The manufacturer will simply test vehicles with and without the technology installed or operating and compare results. All 5-cycles must be tested with the technology enabled and disabled, and the test results will be used to calculate a combined city/highway CO_2 value with the technology and without the technology. These values will then be compared to determine the amount of the credit; the combined city/highway CO_2 value with the technology operating will be subtracted from the combined city/highway CO_2 value without the technology operating to determine the gram per mile CO_2 credit. It is likely that multiple tests of each of the five test procedures will need to be performed in order to achieve the necessary strong degree of statistical significance of the credit determination results. This will have to be done for each model type for which a credit is sought, unless the manufacturer could demonstrate that the impact of the technology was independent of the vehicle configuration on which it was installed. In this case, EPA may consider allowing the test to be performed on an engine family basis or other grouping. At the end of the model year, the manufacturer will determine the number of vehicles produced subject to each credit amount and report that to EPA in the final model year report. The gram per mile credit value determined with the 5-cycle comparison testing will be multiplied by the total production of vehicles subject to that value to determine the total number of credits.

EPA received a few comments regarding the 5-cycle approach. While not commenting directly on the 5-cycle testing methodology, the Alliance raised general concerns that the proposed approach did not offer manufacturers enough certainty with regard to credit applications and testing in order to take advantage of the credits. The Alliance further commented that the proposal did not provide a level playing field to all manufacturers in terms of possible credit availability. The Alliance recommended that rather than attempting to quantify CO_2 reductions with a prescribed test procedure on unknown technologies, EPA should

[242] Fuel Economy Labeling of Motor Vehicles: Revisions to Improve Calculation of Fuel Economy Estimates; Final Rule (71 FR 77872, December 27, 2006).

handle credit applications and testing guidelines via future guidance letters, as technologies emerge and are developed.

EPA believes that 5-cycle testing methodology is one clear and objective way to demonstrate certain off-cycle emissions control technologies, as discussed above. It provides certainty with regard to testing, and is available for all manufacturers. As discussed below, there are also other options for manufactures where the 5-cycle test is not appropriate. EPA is retaining this as a primary methodology for determining off-cycle credits. For technologies not able to be demonstrated on the 5-cycle test, EPA is finalizing an approach that will include a public comment opportunity, as discussed below, which we believe addresses commenter concerns regarding maintaining a level playing field.

b. Alternative Off-Cycle Credit Methodologies

As proposed, in cases where the benefit of a technological approach to reducing CO_2 emissions can not be adequately represented using existing test cycles, manufacturers will need to develop test procedures and analytical approaches to estimate the effectiveness of the technology for the purpose of generating credits. As discussed above, the first step must be a thorough assessment of whether the 5-cycle approach can be used to demonstrate a reduction in emissions. If EPA determines that the 5-cycle process is inadequate for the specific technology being considered by the manufacturer (*i.e.,* the 5-cycle test does not demonstrate any emissions reductions), then an alternative approach may be developed and submitted to EPA for approval. The demonstration program must be robust, verifiable, and capable of demonstrating the real-world emissions benefit of the technology with strong statistical significance.

The CO_2 benefit of some technologies may be able to be demonstrated with a modeling approach, using engineering principles. An example would be where a roof solar panel is used to charge the on-board vehicle battery. The amount of potential electrical power that the panel could supply could be modeled for average U.S. conditions and the units of electrical power could be translated to equivalent fuel energy or annualized CO_2 emission rate reduction from the captured solar energy. The CO_2 reductions from other technologies may be more challenging to quantify, especially if they are interactive with the driver, geographic location, environmental condition, or other aspect related to operation on actual roads. In these cases, manufacturers might have to design extensive on-road test programs. Any such on-road testing programs would need to be statistically robust and based on average U.S. driving conditions, factoring in differences in geography, climate, and driving behavior across the U.S.

Whether the approach involves on-road testing, modeling, or some other analytical approach, the manufacturer will be required to present a proposed methodology to EPA. EPA will approve the methodology and credits only if certain criteria are met. Baseline emissions and control emissions must be clearly demonstrated over a wide range of real world driving conditions and over a sufficient number of vehicles to address issues of uncertainty with the data. The analytical approach must be robust, verifiable, and capable of demonstrating the real-world emissions benefit with strong statistical significance. Data must be on a vehicle model-specific basis unless a manufacturer demonstrated model specific data was not necessary. Approval of the approach to determining a CO_2 benefit will not imply approval of the results of the program or methodology; when the testing, modeling, or analyses are complete the results will likewise be subject to EPA review and approval. EPA believes that manufacturers could work together to develop testing, modeling, or analytical methods for certain technologies, similar to the SAE approach used for A/C refrigerant leakage credits.

In addition, EPA received several comments recommending that the approval process include an opportunity for public comment. As noted above, some manufacturers are concerned that there be a level playing field in terms of all manufacturers having a reasonable opportunity to earn credits under an approved approach. Commenters also want an opportunity for input in the methodology to ensure the accuracy of credit determinations for these technologies. Commenters point out that there are a broad number of stakeholders with experience in the issues pertaining to the technologies that could add value in determining the most appropriate method to assess these technologies' performance. EPA agrees with these comments and is including an opportunity for public comment as part of the approval process. If and when EPA receives an application for off-cycle credits using an alternative non 5-cycle methodology, EPA will publish a notice of availability in the **Federal Register** with instructions on how to comment on draft off-cycle credit methodology. The public information available for review will focus on the methodology for determining credits but the public review obviously is limited to non-confidential business information. The timing for final approval will depend on the comments received. EPA also believes that a public review will encourage manufacturers to be thorough in their preparation prior to submitting their application for credits to EPA for approval. EPA will take comments into consideration, and where appropriate, work with the manufacturer to modify their approach prior to approving any off-cycle credits methodology. EPA will give final notice of its determination to the general public as well as the applicant. Off-cycle credits would be available in the model year following the final approval. Thus, it will be imperative for a manufacturer pursuing this option to begin the process as early as possible.

EPA also received comments that the off-cycle credits highlights the inadequacy of current test procedures, and that there is a clear need for updated certification test procedures. As discussed in Section III. B., EPA believes the current test procedures are adequate for implementing the standards finalized today. However, EPA is interested in improving test procedures in the future and believes that the off-cycle credits program has the potential to provide useful data and insights both for the 5-cycle test procedures and also other test procedures that capture off-cycle emissions.

5. Early Credit Options

EPA is finalizing a program to allow manufacturers to generate early credits in model years 2009–2011.[243] As described below, credits may be generated through early additional fleet average CO_2 reductions, early A/C system improvements, early advanced technology vehicle credits, and early off-cycle credits. As with other credits, early credits are subject to a five year carry-forward limit based on the model year in which they are generated. Manufacturers may transfer early credits between vehicle categories (*e.g.,* between the car and truck fleet). With the exception of MY 2009 early program credits, as discussed below, a manufacturer may trade other early credits to other manufacturers without limits. The agencies note that CAFE credits earned in MYs prior to MY 2011 will still be available to manufacturers

[243] *See* final regulations at 40 CFR 86.1867–12.

for use in the CAFE program in accordance with applicable regulations.

EPA is not adopting certification, compliance, or in-use requirements for vehicles generating early credits. Since manufacturers are already certifying MY 2010 and in some cases even MY 2011 vehicles, doing so would make certification, compliance, and in-use requirements unworkable. As discussed below, manufacturers are required to submit an early credits report to EPA for approval no later than 90 days after the end of MY 2011. This report must include details on all early credits the manufacturer generates, why the credits are bona fide, how they are quantified, and how they can be verified.

a. Credits Based on Early Fleet Average CO_2 Reductions

As proposed, EPA is finalizing opportunities for early credit generation in MYs 2009–2011 through over-compliance with a fleet average CO_2 baseline established by EPA. EPA is finalizing four pathways for doing so. In order to generate early CO_2 credits, manufacturers must select one of the four paths for credit generation for the entire three year period and may not switch between pathways for different model years. For two pathways, EPA is establishing the baseline equivalent to the California standards for the relevant model year. Generally, manufacturers that over-comply with those CARB standards would earn credits. Two additional pathways, described below, include credits based on over-compliance with CAFE standards in states that have not adopted the California standards.

EPA received comments from manufacturers in support of the early credits program as a necessary compliance flexibility. The Alliance commented that the early credits reward manufacturers for providing fleet performance that exceeds California and Federal standards and do not result in a windfall. AIAM commented that early credits are essential to assure the feasibility of the proposed standards and the need for such credits must be evaluated in the context of the dramatic changes the standards will necessitate in vehicle design and the current economic environment in which manufacturers are called upon to make the changes. Manufacturers also supported retaining all four pathways, commenting that eliminating pathways would diminish the flexibility of the program. EPA also received comments from many environmental organizations and states that the program would provide manufacturers with windfall credits because manufacturers will not have to take any steps to earn credits beyond those that are already planned and in some cases implemented. These commenters were particularly concerned that the California truck standards in MY 2009 are not as stringent as CAFE, so overcompliance with the California standards could be a windfall in MY 2009, and possibly even MY 2010. These commenters supported an early credits program based on overcompliance with the more stringent of either the CAFE or California standards in any given year. EPA is retaining the early credits program because EPA judges that they are not windfall credits, and manufacturers in some cases have reasonably relied on the availability of these credits, and have based early model year compliance strategies on their availability so that the credits are needed to provide adequate lead for the initial years of the program. However, as discussed below, EPA is restricting credit trading for MY 2009 credits earned under the California-based pathways.

Manufacturers selecting Pathway 1 will generate credits by over-complying with the California equivalent baseline established by EPA over the manufacturer's fleet of vehicles sold nationwide. Manufacturers selecting Pathway 2 will generate credits against the California equivalent baseline only for the fleet of vehicles sold in California and the CAA section 177 states.[244] This approach includes all CAA 177 states as of the date of promulgation of the Final Rule in this proceeding. Manufacturers are required to include both cars and trucks in the program. Under Pathways 1 and 2, EPA is requiring manufacturers to cover any deficits incurred against the baseline levels established by EPA during the three year period 2009–2011 before credits can be carried forward into the 2012 model year. For example, a deficit in 2011 would have to be subtracted from the sum of credits earned in 2009 and 2010 before any credits could be applied to 2012 (or later) model year fleets. EPA is including this provision to help ensure the early credits generated under this program are consistent with the credits available under the California program during these model years. In its comments, California supported such an approach.

Table III.C.5–1 provides the California equivalent baselines EPA is finalizing to be used as the basis for CO_2 credit generation under the California-based pathways. These are the California GHG standards for the model years shown. EPA proposed to adjust the California standards by 2.0 g/mile to account for the exclusion of N_2O and CH_4, which are included in the California GHG standards, but not included in the credits program. EPA received comments from one manufacturer that this adjustment is in error and should not be made. The commenter noted that EPA already includes total hydrocarbons in the carbon balance determination of carbon related exhaust emissions and therefore already accounts for CH_4. EPA also includes CO in the carbon related exhaust emissions determination which acts to offset the need for an N_20 adjustment. The commenter noted that THC and CO add about 0.8 to 3.0 g/mile to the determination of carbon related emissions and therefore EPA should not make the 2.0g/mile adjustment. The commenter is correct, and therefore the final levels shown in the table below are 2.0 g/mile higher than proposed. These comments are further discussed in the Response to Comments document. Manufacturers will generate CO_2 credits by achieving fleet average CO_2 levels below these baselines. As shown in the table, the California-based early credit pathways are based on the California vehicle categories. Also, the California-based baseline levels are not footprint-based, but universal levels that all manufacturers would use. Manufacturers will need to achieve fleet levels below those shown in the table in order to earn credits, using the California vehicle category definitions.

[244] CAA 177 states refers to states that have adopted the California GHG standards. At present, there are thirteen CAA 177 states: New York, Massachusetts, Maryland, Vermont, Maine, Connecticut, Arizona, New Jersey, New Mexico, Oregon, Pennsylvania, Rhode Island, Washington, as well as Washington, DC.

TABLE III.C.5–1—CALIFORNIA EQUIVALENT BASELINES CO_2 EMISSIONS LEVELS FOR EARLY CREDIT GENERATION

Model year	Passenger cars and light trucks with an LVW of 0–3,750 lbs	Light trucks with a LVW of 3,751 or more and a GVWR of up to 8,500 lbs plus medium-duty passenger vehicles
2009	323	439
2010	301	420
2011	267	390

Manufacturers using Pathways 1 or 2 above will use year-end car and truck sales in each category. Although production data is used for the program starting in 2012, EPA is using sales data for the early credits program in order to apportion vehicles by State. This is described further below. Manufacturers must calculate actual fleet average emissions over the appropriate vehicle fleet, either for vehicles sold nationwide for Pathway 1, or California plus 177 states sales for Pathway 2. Early CO_2 credits are based on the difference between the baseline shown in the table above and the actual fleet average emissions level achieved. Any early A/C credits generated by the manufacturer, described below in Section III.C.5.b, will be included in the fleet average level determination. In model year 2009, the California CO_2 standard for cars (323 g/mi CO_2) is equivalent to 323 g/mi CO_2, and the California light-truck standard (437 g/mi CO_2) is less stringent than the equivalent CAFE standard, recognizing that there are some differences between the way the California program and the CAFE program categorize vehicles. Manufacturers are required to show that they over comply over the entire three model year time period, not just the 2009 model year, to generate early credits under either Pathways 1, 2 or 3. A manufacturer cannot use credits generated in model year 2009 unless they offset any debits from model years 2010 and 2011.

EPA received comments that this approach will provide windfall credits to manufacturers because the MY 2009 California light truck standards are less stringent than the corresponding CAFE standards. While this could be accurate if credits were based on performance in just MY 2009, that is not how credits are determined. Credits are based on the performance over a three model year period, MY 2009–2011. As noted in the proposal, EPA expects that the requirement to over comply over the entire time period covering these three model years should mean that the credits that are generated are real and are in excess of what would have otherwise occurred. However, because of the circumstances involving the 2009 model year, in particular for companies with significant truck sales, there is some concern that under Pathways 1, 2, and 3, there is a potential for a large number of credits generated in 2009 against the California standard, in particular for a number of companies who have significantly over-achieved on CAFE in recent model years. Some commenters were very concerned about this issue and commented in support of restricting credit trading between firms of MY 2009 credits based on the California program. EPA requested comments on this approach and is finalizing this credit trading restriction based on continued concerns regarding the issue of windfall credits. EPA wants to avoid a situation where, contrary to expectation, some part of the early credits generated by a manufacturer are in fact not excess, where companies could trade such credits to other manufacturers, risking a delay in the addition of new technology across the industry from the 2012 and later EPA CO_2 standards. Therefore, manufacturers selecting Pathways 1, 2, or 3 will not be allowed to trade any MY 2009 credits that they may generate.

Commenters also recommended basing credits on the more stringent of the standards between CAFE and CARB, which for MY 2009, would be the CAFE standards. However, EPA believes that this would not be necessary in light of the credit provisions requiring manufacturers choosing the California based pathways to use the California pathway for all three MYs 2009–2011, and the credit trading restrictions for MY 2009 discussed above.

In addition, for Pathways 1 and 2, EPA is allowing manufacturers to include alternative compliance credits earned per the California alternative compliance program.[245] These alternative compliance credits are based on the demonstrated use of alternative fuels in flex fuel vehicles. As with the California program, the credits are available beginning in MY 2010. Therefore, these early alternative compliance credits are available under EPA's program for the 2010 and 2011 model years. FFVs are otherwise included in the early credit fleet average based on their emissions on the conventional fuel. This does not apply to EVs and PHEVs. The emissions of EVs and PHEVs are to be determined as described in Section III.C.3. Manufacturers may choose to either include their EVs and PHEVs in one of the four pathways described in this section or under the early advanced technology emissions credits described below, but not both due to issues of credit double counting.

EPA is also finalizing two additional early credit pathways manufacturers could select. Pathways 3 and 4 incorporate credits based on over-compliance with CAFE standards for vehicles sold outside of California and CAA 177 states in MY 2009–2011. Pathway 3 allows manufacturers to earn credits as under Pathway 2, plus earn CAFE-based credits in other states. Credits may not be generated for cars sold in California and CAA 177 states unless vehicle fleets in those states are performing better than the standards which otherwise would apply in those states, *i.e.,* the baselines shown in Table III.C.5–1 above.

Pathway 4 is for manufacturers choosing to forego California-based early credits entirely and earn only CAFE-based credits outside of California and CAA 177 states. Manufacturers may not include FFV credits under the CAFE-based early credit pathways since those credits do not automatically reflect actual reductions in CO_2 emissions.

The baselines for CAFE-based early pathways are provided in Table III.C.5–2 below. They are based on the CAFE standards for the 2009–2011 model years. For CAFE standards in 2009–2011 model years that are footprint-based, the baseline would vary by manufacturer. Footprint-based standards are in effect for the 2011 model year CAFE

[245] *See* Section 6.6.E, California Environmental Protection Agency Air Resources Board, Staff Report: Initial Statement of Reasons For Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions From Motor Vehicles, August 6, 2004.

standards.[246] Additionally, for Reform CAFE truck standards, footprint standards are optional for the 2009–2010 model years. Where CAFE footprint-based standards are in effect, manufacturers will calculate a baseline using the footprints and sales of vehicles outside of California and CAA 177 states. The actual fleet CO_2 performance calculation will also only include the vehicles sold outside of California and CAA 177 states, and as mentioned above, may not include FFV credits.

TABLE III.C.5–2—CAFE EQUIVALENT BASELINES CO_2 EMISSIONS LEVELS FOR EARLY CREDIT GENERATION

Model year	Cars	Trucks
2009	323	381 *
2010	323	376 *
2011	Footprint-based standard	Footprint-based standard.

* Must be footprint-based standard for manufacturers selecting footprint option under CAFE.

For the CAFE-based pathways, EPA is using the NHTSA car and truck definitions that are in place for the model year in which credits are being generated. EPA understands that the NHTSA definitions change starting in the 2011 model year, and therefore changes part way through the early credits program. EPA further recognizes that medium-duty passenger vehicles (MDPVs) are not part of the CAFE program until the 2011 model year, and therefore are not part of the early credits calculations for 2009–2010 under the CAFE-based pathways.

Pathways 2 through 4 involve splitting the vehicle fleet into two groups, vehicles sold in California and CAA 177 states and vehicles sold outside of these states. This approach requires a clear accounting of location of vehicle sales by the manufacturer. EPA believes it will be reasonable for manufacturers to accurately track sales by State, based on its experience with the National Low Emissions Vehicle (NLEV) Program. NLEV required manufacturers to meet separate fleet average standards for vehicles sold in two different regions of the country.[247] As with NLEV, the determination is to be based on where the completed vehicles are delivered as a point of first sale, which in most cases would be the dealer.[248]

As noted above, manufacturers choosing to generate early CO_2 credits must select one of the four pathways for the entire early credits program and would not be able to switch among them. Manufacturers must submit their early credits report to EPA when they submit their final CAFE report for MY 2011 (which is required to be submitted no later than 90 days after the end of the model year). Manufacturers will have until then to decide which pathway to select. This gives manufacturers enough time to determine which pathway works best for them. This timing may be necessary in cases where manufacturers earn credits in MY 2011 and need time to assess data and prepare an early credits submittal for final EPA approval.

The table below provides a summary of the four fleet average-based CO_2 early credit pathways EPA is finalizing:

TABLE III.C.5–3—SUMMARY OF EARLY FLEET AVERAGE CO_2 CREDIT PATHWAYS

Common Elements	—Manufacturers select a pathway. Once selected, may not switch among pathways. —All credits subject to 5 year carry-forward restrictions. —For Pathways 2–4, vehicles apportioned by State based on point of first sale.
Pathway 1: California-based Credits for National Fleet	—Manufacturers earn credits based on fleet average emissions compared with California equivalent baseline set by EPA. —Based on nationwide CO_2 sales-weighted fleet average. —Based on use of California vehicle categories. —FFV alternative compliance credits per California program may be included. —Once in the program, manufacturers must make up any deficits that are incurred prior to 2012 in order to carry credits forward to 2012 and later.
Pathway 2: California-based Credits for vehicles sold in California plus CAA 177 States.	—Same as Pathway 1, but manufacturers only includes vehicles sold in California and CAA 177 states in the fleet average calculation.
Pathway 3: Pathway 2 plus CAFE-based Credits outside of California plus CAA 177 States.	—Manufacturer earns credits as provided by Pathway 2: California-based credits for vehicles sold in California plus CAA 177 States, plus: —CAFE-based credits allowed for vehicles sold outside of California and CAA 177 states. —For CAFE-based credits, manufacturers earn credits based on fleet average emissions compared with baseline set by EPA. —CAFE-based credits based on NHTSA car and truck definitions. —FFV credits not allowed to be included for CAFE-based credits.
Pathway 4: Only CAFE-based Credits outside of California plus CAA 177 States.	—Manufacturer elects to only earn CAFE-based credits for vehicles sold outside of California and CAA 177 states. Earns no California and 177 State credits. —For CAFE-based credits, manufacturers earn credits based on fleet average emissions compared with baseline set by EPA. —CAFE-based credits based on NHTSA car and truck definitions. —FFV credits not allowed to be included for CAFE-based credits.

[246] 74 FR 14196, March 30, 2009.

[247] 62 FR 31211, June 6, 1997.

[248] 62 FR 31212, June 6, 1997.

b. Early A/C Credits

As proposed, EPA is finalizing provisions allowing manufacturers to earn early A/C credits in MYs 2009–2011 using the same A/C system design-based EPA provisions being finalized for MYs commencing in 2012, as described in Section III.C.1, above. Manufacturers will be able to earn early A/C CO_2-equivalent credits by demonstrating improved A/C system performance, for both direct and indirect emissions. To earn credits for vehicles sold in California and CAA 177 states, the vehicles must be included in one of the California-based early credit pathways described above in III.C.5.a. EPA is finalizing this constraint in order to avoid credit double counting with the California program in place in those states, which also allows A/C system credits in this time frame. Manufacturers must fold the A/C credits into the fleet average CO_2 calculations under the California-based pathway. For example, the MY 2009 California-based program car baseline would be 323 g/mile (see Table III.C.5–1). If a manufacturer under Pathway 1 had a MY 2009 car fleet average CO_2 level of 320 g/mile and then earned an additional 12 g/mile CO_2-equivalent A/C credit, the manufacturers would earn a total of 10 g/mile of credit. Vehicles sold outside of California and 177 states would be eligible for the early A/C credits whether or not the manufacturers participate in other aspects of the early credits program. The early A/C credits for vehicles sold outside of California and 177 states are based on the NHTSA vehicle categories established for the model year in which early A/C credits are being earned.

c. Early Advanced Technology Vehicle Incentive

As discussed in Section III.C.3, above, EPA is finalizing an incentive for sales of advanced technology vehicles including EVs, PHEVs, and fuel cell vehicles. EPA is not including a multiplier for these vehicles. However, EPA is allowing the use of the 0 g/mile value for electricity operation for up to 200,000 vehicles per manufacturer (or 300,000 vehicles for any manufacturer that sells 25,000 or more advanced technology vehicles in MY 2012). EPA believes that providing an incentive for the sales of such vehicles prior to MY 2012 is consistent with the goal encouraging the introduction of such vehicles as early as possible. Therefore, manufacturers may use the 0 g/mile value for vehicles sold in MY 2009–2011 consistent with the approach being finalized for MY 2012–2016. Any vehicles sold prior to MY 2012 under these provisions must be counted against the cumulative sales cap of 200,000 (or 300,000, if applicable) vehicles. Manufacturers selling such vehicles in MY 2009–2011 have the option of either folding them into the early credits calculation under Pathways 1 through 4 described in III.C.5.a above, or tracking the sales of these vehicles separately for use in their fleetwide average compliance calculation in MY 2012 or later years, but may not do both as this would lead to double counting. Manufacturers tracking the sales of vehicles not folded into Pathways 1–4, may choose to use the vehicle counts along with the 0 g/mi emissions value (up to the applicable vehicle sales cap) to comply with 2012 or later standards. For example, if a manufacturer sells 1,000 EVs in MY 2011, the manufacturer would then be able to include 1,000 vehicles at 0 g/mile in their MY 2012 fleet to decrease the fleet average for that model year. Again, these 1,000 vehicles would be counted against the cumulative cap of 200,000 or 300,000, as applicable, vehicles. Also, these 1,000 EVs would not be included in the early credit pathways discussed above in Section III.C.5.a, otherwise the vehicles would be double counted. As with early credits, these early advanced technology vehicles will be tracked by model year (2009, 2010, or 2011) and subject to the 5-year carry-forward restrictions.

d. Early Off-Cycle Credits

EPA's is finalizing off-cycle innovative technology credit provisions, as described in Section III.C.4. EPA requested comment on beginning these credits in the 2009–2011 time frame, provided manufacturers are able to make the necessary demonstrations outlined in Section III.C.4, above. EPA is finalizing this approach for early off-cycle credits as a way to encourage innovation to lower emissions as early as possible, including the requirements for public review described in Section III.C.4. Upon EPA approval of a manufacturer's application for credits, the credits may be earned retroactively. EPA did not receive comments specifically on early off-cycle credits.

D. Feasibility of the Final CO_2 Standards

This final rule is based on the need to obtain significant GHG emissions reductions from the transportation sector, and the recognition that there are cost-effective technologies to achieve such reductions for MY 2012–2016 vehicles. As in many prior mobile source rulemakings, the decision on what standard to set is largely based on the effectiveness of the emissions control technology, the cost and other impacts of implementing the technology, and the lead time needed for manufacturers to employ the control technology. The standards derived from assessing these factors are also evaluated in terms of the need for reductions of greenhouse gases, the degree of reductions achieved by the standards, and the impacts of the standards in terms of costs, quantified benefits, and other impacts of the standards. The availability of technology to achieve reductions and the cost and other aspects of this technology are therefore a central focus of this rulemaking.

EPA is taking the same basic approach in this rulemaking, although the technological problems and solutions involved in this rulemaking differ in some ways from prior mobile source rulemakings. Here, the focus of the emissions control technology is on reducing CO_2 and other greenhouse gases. Vehicles combust fuel to perform two basic functions: (1) To transport the vehicle, its passengers and its contents (and any towed loads), and (2) to operate various accessories during the operation of the vehicle such as the air conditioner. Technology can reduce CO_2 emissions by either making more efficient use of the energy that is produced through combustion of the fuel or reducing the energy needed to perform either of these functions.

This focus on efficiency calls for looking at the vehicle as an entire system, and the proposed and now final standards reflect this basic paradigm. In addition to fuel delivery, combustion, and aftertreatment technology, any aspect of the vehicle that affects the need to produce energy must also be considered. For example, the efficiency of the transmission system, which takes the energy produced by the engine and transmits it to the wheels, and the resistance of the tires to rolling both have major impacts on the amount of fuel that is combusted while operating the vehicle. The braking system, the aerodynamics of the vehicle, and the efficiency of accessories, such as the air conditioner, all affect how much fuel is combusted as well.

In evaluating vehicle efficiency, we have excluded fundamental changes in vehicles' size and utility. For example, we did not evaluate converting minivans and SUVs to station wagons, converting vehicles with four wheel drive to two wheel drive, or reducing headroom in order to lower the roofline and reduce aerodynamic drag. We have

limited our assessment of technical feasibility and resultant vehicle cost to technologies which maintain vehicle utility as much as possible. Manufacturers may decide to alter the utility of the vehicles which they sell in response to this rule, but this is not a necessary consequence of the rule but rather a matter of automaker choice.

This need to focus on the efficient use of energy by the vehicle as a system leads to a broad focus on a wide variety of technologies that affect almost all the systems in the design of a vehicle. As discussed below, there are many technologies that are currently available which can reduce vehicle energy consumption. These technologies are already being commercially utilized to a limited degree in the current light-duty fleet. These technologies include hybrid technologies that use higher efficiency electric motors as the power source in combination with or instead of internal combustion engines. While already commercialized, hybrid technology continues to be developed and offers the potential for even greater efficiency improvements. Finally, there are other advanced technologies under development, such as lean burn gasoline engines, which offer the potential of improved energy generation through improvements in the basic combustion process. In addition, the available technologies are not limited to powertrain improvements but also include mass reduction, electrical system efficiencies, and aerodynamic improvements.

The large number of possible technologies to consider and the breadth of vehicle systems that are affected mean that consideration of the manufacturer's design and production process plays a major role in developing the final standards. Vehicle manufacturers typically develop many different models by basing them on a limited number of vehicle platforms. The platform typically consists of a common set of vehicle architecture and structural components. This allows for efficient use of design and manufacturing resources. Given the very large investment put into designing and producing each vehicle model, manufacturers typically plan on a major redesign for the models approximately every 5 years. At the redesign stage, the manufacturer will upgrade or add all of the technology and make most other changes supporting the manufacturer's plans for the next several years, including plans related to emissions, fuel economy, and safety regulations.

This redesign often involves a package of changes designed to work together to meet the various requirements and plans for the model for several model years after the redesign. This often involves significant engineering, development, manufacturing, and marketing resources to create a new product with multiple new features. In order to leverage this significant upfront investment, manufacturers plan vehicle redesigns with several model years' of production in mind. Vehicle models are not completely static between redesigns as limited changes are often incorporated for each model year. This interim process is called a refresh of the vehicle and generally does not allow for major technology changes although more minor ones can be done (*e.g.,* small aerodynamic improvements, valve timing improvements, etc.). More major technology upgrades that affect multiple systems of the vehicle thus occur at the vehicle redesign stage and not in the time period between redesigns. The Center for Biological Diversity commented on EPA's assumptions on redesign cycles, and these comments are addressed in Section III.D.7 below.

As discussed below, there are a wide variety of CO_2 reducing technologies involving several different systems in the vehicle that are available for consideration. Many can involve major changes to the vehicle, such as changes to the engine block and cylinder heads, redesign of the transmission and its packaging in the vehicle, changes in vehicle shape to improve aerodynamic efficiency and the application of aluminum (and other lightweight materials) in body panels to reduce mass. Logically, the incorporation of emissions control technologies would be during the periodic redesign process. This approach would allow manufacturers to develop appropriate packages of technology upgrades that combine technologies in ways that work together and fit with the overall goals of the redesign. It also allows the manufacturer to fit the process of upgrading emissions control technology into its multi-year planning process, and it avoids the large increase in resources and costs that would occur if technology had to be added outside of the redesign process.

This final rule affects five years of vehicle production, model years 2012–2016. Given the now-typical five year redesign cycle, nearly all of a manufacturer's vehicles will be redesigned over this period. However, this assumes that a manufacturer has sufficient lead time to redesign the first model year affected by this final rule with the requirements of this final rule in mind. In fact, the lead time available for the start of model year 2012 (January 2011) is relatively short, less than a year. The time between this final rule and the start of 2013 model year (January 2012) production is under two years. At the same time, manufacturer product plans indicate that they are planning on introducing many of the technologies EPA projects could be used to show compliance with the final CO_2 standards in both 2012 and 2013. In order to account for the relatively short lead time available prior to the 2012 and 2013 model years, albeit mitigated by their existing plans, EPA has factored this reality into how the availability is modeled for much of the technology being considered for model years 2012–2016 as a whole. If the technology to control greenhouse gas emissions is efficiently folded into this redesign process, then EPA projects that 85 percent of each manufacturer's sales will be able to be redesigned with many of the CO_2 emission reducing technologies by the 2016 model year, and as discussed below, to reduce emissions of HFCs from the air conditioner.

In determining the level of this first ever GHG emissions standard under the CAA for light-duty vehicles, EPA uses an approach that accounts for and builds on this redesign process. This provides the opportunity for several control technologies to be incorporated into the vehicle during redesign, achieving significant emissions reductions from the model at one time. This is in contrast to what would be a much more costly approach of trying to achieve small increments of reductions over multiple years by adding technology to the vehicle piece by piece outside of the redesign process.

As described below, the vast majority of technology required by this final rule is commercially available and already being employed to a limited extent across the fleet (although the final rule will necessitate far wider penetration of these technologies throughout the fleet). The vast majority of the emission reductions which will result from this final rule will be produced from the increased use of these technologies. EPA also believes that this final rule will encourage the development and limited use of more advanced technologies, such as PHEVs and EVs, and the final rule is structured to facilitate this result.

In developing the final standard, EPA built on the technical work performed by the State of California during its development of its statewide GHG program. EPA began by evaluating a nationwide CAA standard for MY 2016 that would require the levels of technology upgrade, across the country, which California standards would

require for the subset of vehicles sold in California under Pavley 1. In essence, EPA developed an assessment of an equivalent national new vehicle fleet-wide CO_2 performance standards for model year 2016 which would result in the new vehicle fleet in the State of California having CO_2 performance equal to the performance from the California Pavley 1 standards. This assessment is documented in Chapter 3.1 of the RIA. The results of this assessment predicts that a national light-duty vehicle fleet which adopts technology that achieves performance of 250 g/mile CO_2 for model year 2016 will result in vehicles sold in California that would achieve the CO_2 performance equivalent to the Pavley 1 standards.

EPA then analyzed a level of 250 g/mi CO_2 in 2016 using the OMEGA model (described in more detail below), and the car and truck footprint curves' relative stringency discussed in Section II to determine what technology will be needed to achieve a fleet wide average of 250 g/mi CO_2. As discussed later in this section we believe this level of technology application to the light-duty vehicle fleet can be achieved in this time frame, that such standards will produce significant reductions in GHG emissions, and that the costs for both the industry and the costs to the consumer are reasonable. EPA also developed standards for the model years 2012 through 2015 that lead up to the 2016 level.

EPA's independent technical assessment of the technical feasibility of the final MY 2012–2016 standards is described below. EPA has also evaluated a set of alternative standards for these model years, one that is more stringent than the final standards and one that is less stringent. The technical feasibility of these alternative standards is discussed at the end of this section.

Evaluating the feasibility of these standards primarily includes identifying available technologies and assessing their effectiveness, cost, and impact on relevant aspects of vehicle performance and utility. The wide number of technologies which are available and likely to be used in combination requires a more sophisticated assessment of their combined cost and effectiveness. An important factor is also the degree that these technologies are already being used in the current vehicle fleet and thus, unavailable for use to improve energy efficiency beyond current levels. Finally, the challenge for manufacturers to design the technology into their products, and the appropriate lead time needed to employ the technology over the product line of the industry must be considered.

Applying these technologies efficiently to the wide range of vehicles produced by various manufacturers is a challenging task. In order to assist in this task, EPA has developed a computerized model called the Optimization Model for reducing Emissions of Greenhouse gases from Automobiles (OMEGA) model. Broadly, the model starts with a description of the future vehicle fleet, including manufacturer, sales, base CO_2 emissions, footprint and the extent to which emission control technologies are already employed. For the purpose of this analysis, over 200 vehicle platforms were used to capture the important differences in vehicle and engine design and utility of future vehicle sales of roughly 16 million units in the 2016 timeframe. The model is then provided with a list of technologies which are applicable to various types of vehicles, along with their cost and effectiveness and the percentage of vehicle sales which can receive each technology during the redesign cycle of interest. The model combines this information with economic parameters, such as fuel prices and a discount rate, to project how various manufacturers would apply the available technology in order to meet various levels of emission control. The result is a description of which technologies are added to each vehicle platform, along with the resulting cost. While OMEGA can apply technologies which reduce CO_2 emissions and HFC refrigerant emissions associated with air conditioner use, this task is currently handled outside of the OMEGA model. The model can be set to account for various types of compliance flexibilities, such as FFV credits.

The remainder of this section describes the technical feasibility analysis in greater detail. Section III.D.1 describes the development of our projection of the MY 2012–2016 fleet in the absence of this final rule. Section III.D.2 describes our estimates of the effectiveness and cost of the control technologies available for application in the 2012–2016 timeframe. Section III.D.3 combines these technologies into packages likely to be applied at the same time by a manufacturer. In this section, the overall effectiveness of the technology packages vis-à-vis their effectiveness when combined individually is described. Section III.D.4 describes the process which manufacturers typically use to apply new technology to their vehicles. Section III.D.5 describes EPA's OMEGA model and its approach to estimating how manufacturers will add technology to their vehicles in order to comply with CO_2 emission standards. Section III.D.6 presents the results of the OMEGA modeling, namely the level of technology added to manufacturers' vehicles and its cost. Section III.D.7 discusses the feasibility of the alternative 4-percent-per-year and 6-percent-per-year standards. Further detail on all of these issues can be found in EPA and NHTSA's Joint Technical Support Document as well as EPA's Regulatory Impact Analysis.

1. How did EPA develop a reference vehicle fleet for evaluating further CO_2 reductions?

In order to calculate the impacts of this final rule, it is necessary to project the GHG emissions characteristics of the future vehicle fleet absent this regulation. This is called the "reference" fleet. EPA and NHTSA develop this reference fleet using a three step process. Step one develops a set of detailed vehicle characteristics and sales for a specific model year (in this case, 2008). This is called the baseline fleet. Step two adjusts the sales of these vehicles using projections made by AEO and CSM to account for expected changes in market conditions. Step three applies fuel saving and emission control technology to these vehicles to the extent necessary for manufacturers to comply with the MY 2011 CAFE standards. Thus, the reference fleet differs from the MY 2008 baseline fleet in both the level of technology utilized and in terms of the sales of any particular vehicle.

EPA and NHTSA perform steps one and two in an identical manner. The development of the characteristics of the baseline 2008 fleet and the adjustment of sales to match AEO and CSM forecasts is described in detail in Section II.B above. The two agencies perform step three in a conceptually identical manner, but each agency utilizes its own vehicle technology and emission model to project the technology needed to comply with the 2011 CAFE standards. The agencies use the same two models to project the technology and cost of the 2012–2016 standards. Use of the same model for both pre-control and post-control costs ensures consistency.

The agencies received one comment from the Center for Biological Diversity that the use of 2008 vehicles in our baseline and reference fleets inherently includes vehicle models which already have or will be discontinued by the time this rule takes effect and will be replaced by more advanced vehicle models. This is true. However, we believe that the use of 2008 vehicle designs is still the most appropriate

approach available. First, as discussed in Section II.B above, the designs of these new vehicles at the level of detail required for emission and cost modeling are not publically available. Even the confidential descriptions of these vehicle designs are usually not of sufficient detail to facilitate the level of technology and emission modeling performed by both agencies. Second, steps two and three of the process used to create the reference fleet adjust both the sales and technology of the 2008 vehicles. Thus, our reference fleet reflects the extent that completely new vehicles are expected to shift the light vehicle market in terms of both segment and manufacturer. Also, by adding technology to facilitate compliance with the 2011 CAFE standards, we account for the vast majority of ways in which these new vehicles will differ from their older counterparts.

The agencies also received a comment that some manufacturers have already announced plans to introduce technology well beyond that required by the 2011 MY CAFE standards. This commenter indicated that the agencies' approach over-estimated the technology and cost required by the proposed standards and resulted in less stringent standards being proposed than a more realistic reference fleet would have supported. First, the agencies agree that limiting the application of additional technology beyond that already on 2008 vehicles to only that required by the 2011 CAFE standards could under-estimate the use of such technology absent this rule. However, it is difficult, if not impossible, to separate future fuel economy improvements made for marketing purposes from those designed to facilitate compliance with anticipated CAFE or CO_2 emission standards. For example, EISA was signed over two years ago, which contained specific minimum limits on light vehicle fuel economy in 2020, while also requiring ratable improvements in the interim. NHTSA proposed fuel economy standards for the 2012–2015 model years under the EISA provisions in April of 2008, although NHTSA finalized only 2011 standards for passenger vehicles. It is also true that manufacturers can change their plans based on market conditions and other factors. Thus, announcements of future plans are not certain. As mentioned above, these plans do not include specific vehicle characteristics. Thus, in order to avoid under-estimating the cost associated with this rule, the agencies have limited the fuel economy improvements in the reference fleet to those projected to result from the existing CAFE standards. We disagree with the commenter that this has caused the standards being promulgated today to be less stringent than would have been the case had we been able to confidently predict additional fuel economy and CO_2 emission improvements which will occur absent this rule. The inclusion of such technology in the reference fleet would certainly have reduced the cost of this final rule, as well as the benefits, but would not have changed the final level of technology required to meet the final standards. Also, we believe that the same impacts would apply to our evaluations of the two alternative sets of standards, the 4% per year and 6% per year standards. We are confident that the vast majority of manufacturers would not comply with the least stringent of these standards (the 4% per year standards) in the absence of this rule. Thus, changes to the reference fleet would not have affected the differences in technology, cost or benefits between the final standards and the two alternatives. As described below, our rejection of the two alternatives in favor of the final standards is based primarily on the relative technology, cost and benefits associated with the three sets of standards than the absolute cost or benefit relative to the reference fleet. Thus, we do not agree with the commenter that our choice of reference fleet adversely impacted the development of the final standards being promulgated today.

The addition of technology to the baseline fleet so that it complies with the MY 2011 CAFE standards is described later in Section III.D.4, as this uses the same methodology used to project compliance with the final CO_2 emission standards. In summary, the reference fleet represents vehicle characteristics and sales in the 2012 and later model years absent this final rule. Technology is then added to these vehicles in order to reduce CO_2 emissions to achieve compliance with the final CO_2 standards. As noted above, EPA did not factor in any changes to vehicle utility or characteristics, or sales in projecting manufacturers' compliance with this final rule.

After the reference fleet is created, the next step aggregates vehicle sales by a combination of manufacturer, vehicle platform, and engine design. As discussed in Section III.D.4 below, manufacturers implement major design changes at vehicle redesign and tend to implement these changes across a vehicle platform. Because the cost of modifying the engine depends on the valve train design (such as SOHC, DOHC, etc.), the number of cylinders and in some cases head design, the vehicle sales are broken down beyond the platform level to reflect relevant engine differences. The vehicle groupings are shown in Table III.D.1–1. These groupings are the same as those used in the NPRM.

TABLE III.D.1–1—VEHICLE GROUPINGS [a]

Vehicle description	Vehicle type	Vehicle description	Vehicle type
Large SUV (Car) V8+ OHV	13	Subcompact Auto I4	1
Large SUV (Car) V6 4v	16	Large Pickup V8+ DOHC	19
Large SUV (Car) V6 OHV	12	Large Pickup V8+ SOHC 3v	14
Large SUV (Car) V6 2v SOHC	9	Large Pickup V8+ OHV	13
Large SUV (Car) I4 and I5	7	Large Pickup V8+ SOHC	10
Midsize SUV (Car) V6 2v SOHC	8	Large Pickup V6 DOHC	18
Midsize SUV (Car) V6 S/DOHC 4v	5	Large Pickup V6 OHV	12
Midsize SUV (Car) I4	7	Large Pickup V6 SOHC 2v	11
Small SUV (Car) V6 OHV	12	Large Pickup I4 S/DOHC	7
Small SUV (Car) V6 S/DOHC	4	Small Pickup V6 OHV	12
Small SUV (Car) I4	3	Small Pickup V6 2v SOHC	8
Large Auto V8+ OHV	13	Small Pickup I4	7
Large Auto V8+ SOHC	10	Large SUV V8+ DOHC	17
Large Auto V8+ DOHC, 4v SOHC	6	Large SUV V8+ SOHC 3v	14
Large Auto V6 OHV	12	Large SUV V8+ OHV	13
Large Auto V6 SOHC 2/3v	5	Large SUV V8+ SOHC	10
Midsize Auto V8+ OHV	13	Large SUV V6 S/DOHC 4v	16

TABLE III.D.1–1—VEHICLE GROUPINGS [a]—Continued

Vehicle description	Vehicle type	Vehicle description	Vehicle type
Midsize Auto V8+ SOHC	10	Large SUV V6 OHV	12
Midsize Auto V7+ DOHC, 4v SOHC	6	Large SUV V6 SOHC 2v	9
Midsize Auto V6 OHV	12	Large SUV I4	7
Midsize Auto V6 2v SOHC	8	Midsize SUV V6 OHV	12
Midsize Auto V6 S/DOHC 4v	5	Midsize SUV V6 2v SOHC	8
Midsize Auto I4	3	Midsize SUV V6 S/DOHC 4v	5
Compact Auto V7+ S/DOHC	6	Midsize SUV I4 S/DOHC	7
Compact Auto V6 OHV	12	Small SUV V6 OHV	12
Compact Auto V6 S/DOHC 4v	4	Minivan V6 S/DOHC	16
Compact Auto I5	7	Minivan V6 OHV	12
Compact Auto I4	2	Minivan I4	7
Subcompact Auto V8+ OHV	13	Cargo Van V8+ OHV	13
Subcompact Auto V8+ S/DOHC	6	Cargo Van V8+ SOHC	10
Subcompact Auto V6 2v SOHC	8	Cargo Van V6 OHV	12
Subcompact Auto I5/V6 S/DOHC 4v	4		

[a] I4 = 4 cylinder engine, I5 = 5 cylinder engine, V6, V7, and V8 = 6, 7, and 8 cylinder engines, respectively, DOHC = Double overhead cam, SOHC = Single overhead cam, OHV = Overhead valve, v = number of valves per cylinder, "/" = and, "+" = or larger.

As mentioned above, the second factor which needs to be considered in developing a reference fleet against which to evaluate the impacts of this final rule is the impact of the 2011 MY CAFE standards. Since the vehicles which comprise the above reference fleet are those sold in the 2008 MY, when coupled with our sales projections, they do not necessarily meet the 2011 MY CAFE standards.

The levels of the 2011 MY CAFE standards are straightforward to apply to future sales fleets, as is the potential fine-paying flexibility afforded by the CAFE program (*i.e.,* $55 per mpg of shortfall). However, projecting some of the compliance flexibilities afforded by EISA and the CAFE program are less clear. Two of these compliance flexibilities are relevant to EPA's analysis: (1) The credit for FFVs, and (2) the limit on the transferring of credits between car and truck fleets. The FFV credit is limited to 1.2 mpg in 2011 and EISA gradually reduces this credit, to 1.0 mpg in 2015 and eventually to zero in 2020. In contrast, the limit on car-truck transfer is limited to 1.0 mpg in 2011, and EISA increases this to 1.5 mpg beginning in 2015 and then to 2.0 mpg beginning in 2020. The question here is whether to hold the 2011 MY CAFE provisions constant in the future or incorporate the changes in the FFV credit and car-truck credit trading limits contained in EISA.

As was done for the NPRM, EPA has decided to hold the 2011 MY limits on FFV credit and car-truck credit trading constant in projecting the fuel economy and CO_2 emission levels of vehicles in our reference case. This approach treats the changes in the FFV credit and car-truck credit trading provisions consistently with the other EISA-mandated changes in the CAFE standards themselves. All EISA provisions relevant to 2011 MY vehicles are reflected in our reference case fleet, while all post-2011 MY provisions are not. Practically, relative to the alternative, this increases both the cost and benefit of the final standards. In our analysis of this final rule, any quantified benefits from the presence of FFVs in the fleet are not considered. Thus, the only impact of the FFV credit is to reduce onroad fuel economy. By assuming that the FFV credit stays at 1.2 mpg in the future absent this rule, the assumed level of onroad fuel economy that would occur absent this final rule is reduced. As this final rule eliminates the FFV credit (for purposes of CO_2 emission compliance) starting in 2016, the net result is to increase the projected level of fuel savings from our final standards. Similarly, the higher level of FFV credit reduces projected compliance cost for manufacturers to meet the 2011 MY standards in our reference case. This increases the projected cost of meeting the final 2012 and later standards.

As just implied, EPA needs to project the technology (and resultant costs) required for the 2008 MY vehicles to comply with the 2011 MY CAFE standards in those cases where they do not automatically do so. The technology and costs are projected using the same methodology that projects compliance with the final 2012 and later CO_2 standards. The description of this process is described in the following four sections and is essentially the same process used for the NPRM.

A more detailed description of the methodology used to develop these sales projections can be found in the Joint TSD. Detailed sales projections by model year and manufacturer can also be found in the TSD.

2. What are the effectiveness and costs of CO_2-reducing technologies?

EPA and NHTSA worked together to jointly develop information on the effectiveness and cost of the CO_2-reducing technologies, and fuel economy-improving technologies, other than A/C related control technologies. This joint work is reflected in Chapter 3 of the Joint TSD and in Section II of this preamble. A summary of the effectiveness and cost of A/C related technology is contained here. For more detailed information on the effectiveness and cost of A/C related technology, please refer to Section III.C of this preamble and Chapter 2 of EPA's RIA.

A/C improvements are an integral part of EPA's technology analysis and have been included in this section along with the other technology options. While discussed in Section III.C as a credit opportunity, air conditioning-related improvements are included in Table III.D.2–1. because A/C improvements are a very cost-effective technology at reducing CO_2 (or CO_2-equivalent) emissions. EPA expects most manufacturers will choose to use AC improvement credit opportunities as a strategy for meeting compliance with the CO_2 standards. Note that the costs shown in Table III.D.2–1 do not include maintenance savings that would be expected from the new AC systems. Further, EPA does not include AC-related maintenance savings in our cost and benefit analysis presented in Section III.H. EPA discusses the likely maintenance savings in Chapter 2 of the RIA, though these savings are not included in our final cost estimates for the final rule. The EPA approximates that the level of the credits earned will increase from 2012 to 2016 as more vehicles in the fleet are redesigned. The

penetrations and average levels of credit are summarized in Table III.D.2–2, though the derivation of these numbers (and the breakdown of car vs. truck credits) is described in the RIA. As demonstrated in the IMAC study (and described in Section III.C as well as the RIA), these levels are feasible and achievable with technologies that are available and cost-effective today.

These improvements are categorized as either leakage reduction, including use of alternative refrigerants, or system efficiency improvements. Unlike the majority of the technologies described in this section, A/C improvements will not be demonstrated in the test cycles used to quantify CO_2 reductions in this final rule. As described earlier, for this analysis A/C-related CO_2 reductions are handled outside of OMEGA model and therefore their CO_2 reduction potential is expressed in grams per mile rather than a percentage used by the OMEGA model. *See* Section III.C.1 for the method by which potential reductions are calculated or measured. Further discussion of the technological basis for these improvements is included in Chapter 2 of the RIA.

TABLE III.D.2–1—TOTAL CO_2 REDUCTION POTENTIAL AND 2016 COST FOR A/C RELATED TECHNOLOGIES FOR ALL VEHICLE CLASSES

[Costs in 2007 dollars]

	CO_2 reduction potential	Incremental compliance costs
A/C refrigerant leakage reduction	7.5 g/mi [249]	$17
A/C efficiency improvements	5.7 g/mi	53

TABLE III.D.2–2—A/C RELATED TECHNOLOGY PENETRATION AND CREDIT LEVELS EXPECTED TO BE EARNED

	Technology penetration (percent)	Average credit over entire fleet		
		Car	Truck	Fleet average
2012	[250] 28	3.4	3.8	3.5
2013	40	4.8	5.4	5.0
2014	60	7.2	8.1	7.5
2015	80	9.6	10.8	10.0
2016	85	10.2	11.5	10.6

3. How can technologies be combined into "packages" and what is the cost and effectiveness of packages?

Individual technologies can be used by manufacturers to achieve incremental CO_2 reductions. However, as mentioned in Section III.D.1, EPA believes that manufacturers are more likely to bundle technologies into "packages" to capture synergistic aspects and reflect progressively larger CO_2 reductions with additions or changes to any given package. In addition, manufacturers typically apply new technologies in packages during model redesigns that occur approximately once every five years, rather than adding new technologies one at a time on an annual or biennial basis. This way, manufacturers can more efficiently make use of their redesign resources and more effectively plan for changes necessary to meet future standards.

Therefore, as explained at proposal, the approach taken here is to group technologies into packages of increasing cost and effectiveness. EPA determined that 19 different vehicle types provided adequate representation to accurately model the entire fleet. This was the result of analyzing the existing light duty fleet with respect to vehicle size and powertrain configurations. All vehicles, including cars and trucks, were first distributed based on their relative size, starting from compact cars and working upward to large trucks. Next, each vehicle was evaluated for powertrain, specifically the engine size, I4, V6, and V8, and finally by the number of valves per cylinder. Note that each of these 19 vehicle types was mapped into one of the five classes of vehicles mentioned in Section III.D.2. While the five classes provide adequate representation for the cost basis associated with most technology application, they do not adequately account for all existing vehicle attributes such as base vehicle powertrain configuration and mass reduction. As an example, costs and effectiveness estimates for engine friction reduction for the small car class were used to represent cost and effectiveness for three vehicle types: Subcompact cars, compact cars, and small multi-purpose vehicles (MPV) equipped with a 4-cylinder engine, however the mass reduction associated for each of these vehicle types was based on the vehicle type sales-weighted average. In another example, a vehicle type for V8 single overhead cam 3-valve engines was created to properly account for the incremental cost in moving to a dual overhead cam 4-valve configuration. Note also that these 19 vehicle types span the range of vehicle footprint (smaller footprints for smaller vehicles and larger footprints for larger vehicles) which serve as the basis for the standards being promulgated today. A complete list of vehicles and their associated vehicle types is shown above in Table III.D.1–1.

Within each of the 19 vehicle types, multiple technology packages were created in increasing technology content resulting in increasing effectiveness. Important to note that the effort in creating the packages attempted to maintain a constant utility for each package as compared to the baseline package. As such, each package is meant to provide equivalent driver-perceived performance to the baseline package. The initial packages represent what a manufacturer will most likely implement on all vehicles, including low rolling resistance tires, low friction lubricants, engine friction reduction, aggressive shift logic, early torque converter lock-up, improved electrical

[249] This represents 50% improvement in leakage and thus 50% of the A/C leakage impact potential compared to a maximum of 15 g/mi credit that can be achieved through the incorporation of a low very GWP refrigerant.

[250] We assume slightly higher A/C penetration in 2012 than was assumed in the proposal to correct for rounding that occurred in the curve setting process.

accessories, and low drag brakes.[251] Subsequent packages include advanced gasoline engine and transmission technologies such as turbo/downsizing, GDI, and dual-clutch transmission. The most technologically advanced packages within a segment included HEV, PHEV and EV designs. The end result is a list of several packages for each of 19 different vehicle types from which a manufacturer could choose in order to modify its fleet such that compliance could be achieved.

Before using these technology packages as inputs to the OMEGA model, EPA calculated the cost and effectiveness for the package. The first step was to apply the scaling class for each technology package and vehicle type combination. The scaling class establishes the cost and effectiveness for each technology with respect to the vehicle size or type. The Large Car class was provided as an example in Section III.D.2. Additional classes include Small Car, Minivan, Small Truck, and Large Truck and each of the 19 vehicle types was mapped into one of those five classes. In the next step, the cost for a particular technology package was determined as the sum of the costs of the applied technologies. The final step, determination of effectiveness, requires greater care due to the synergistic effects mentioned in Section III.D.2. This step is described immediately below.

Usually, the benefits of the engine and transmission technologies can be combined multiplicatively. For example, if an engine technology reduces CO_2 emissions by five percent and a transmission technology reduces CO_2 emissions by four percent, the benefit of applying both technologies is 8.8 percent (100% − (100% − 4%) * (100% − 5%)). In some cases, however, the benefit of the transmission-related technologies overlaps with many of the engine technologies. This occurs because the primary goal of most of the transmission technologies is to shift operation of the engine to more efficient locations on the engine map. This is accomplished by incorporating more ratio selections and a wider ratio span into the transmissions. Some of the engine technologies have the same goal, such as cylinder deactivation, advanced valvetrains, and turbocharging. In order to account for this overlap and avoid over-estimating emissions reduction effectiveness, EPA has developed a set of adjustment factors associated with specific pairs of engine and transmission technologies.

The various transmission technologies are generally mutually exclusive. As such, the effectiveness of each transmission technology generally supersedes each other. For example, the 9.5–14.5 percent reduction in CO_2 emissions associated with the automated manual transmission includes the 4.5–6.5 percent benefit of a 6-speed automatic transmission. Exceptions are aggressive shift logic and early torque converter lock-up that can be applied to vehicles with several types of automatic transmissions.

EPA has chosen to use an engineering approach known as the lumped-parameter technique to determine these adjustment factors. The results from this approach were then applied directly to the vehicle packages. The lumped-parameter technique is well documented in the literature, and the specific approach developed by EPA is detailed in Chapter 1 of the RIA.

Table III.D.3–1 presents several examples of the reduction in the effectiveness of technology pairs. A complete list and detailed discussion of these synergies is presented in Chapter 3 of the Joint TSD.

TABLE III.D.3–1—REDUCTION IN EFFECTIVENESS FOR SELECTED TECHNOLOGY PAIRS

Engine technology	Transmission technology	Reduction in combined effectiveness (percent)
Intake cam phasing	5 speed automatic	0.5
Coupled cam phasing	5 speed automatic	0.5
Coupled cam phasing	Aggressive shift logic	0.5
Cylinder deactivation	5 speed automatic	1.0
Cylinder deactivation	Aggressive shift logic	0.5

Table III.D.3–2 presents several examples of the CO_2-reducing technology vehicle packages used in the OMEGA model for the large car class. Similar packages were generated for each of the 19 vehicle types and the costs and effectiveness estimates for each of those packages are discussed in detail in Chapter 3 of the Joint TSD.

TABLE III.D.3–2—CO_2 REDUCING TECHNOLOGY VEHICLE PACKAGES FOR A LARGE CAR EFFECTIVENESS AND COSTS IN 2016

[Costs in 2007 dollars]

Engine technology	Transmission technology	Additional technology	CO_2 reduction	Package cost
3.3L V6	4 speed automatic	None	Baseline	
3.0L V6 + GDI + CCP	6 speed automatic	3% Mass Reduction	17.9%	$985
3.0L V6 + GDI + CCP + Deac	6 speed automatic	5% Mass Reduction	20.6%	1,238
2.2L I4 + GDI + Turbo + DCP	6 speed DCT	10% Mass Reduction Start-Stop	34.3%	1,903

[251] When making reference to low friction lubricants, the technology being referred to is the engine changes and possible durability testing that would be done to accommodate the low friction lubricants, not the lubricants themselves.

4. Manufacturer's Application of Technology

Vehicle manufacturers often introduce major product changes together, as a package. In this manner the manufacturers can optimize their available resources, including engineering, development, manufacturing and marketing activities to create a product with multiple new features. In addition, manufacturers recognize that a vehicle will need to remain competitive over its intended life, meet future regulatory requirements, and contribute to a manufacturer's CAFE requirements. Furthermore, automotive manufacturers are largely focused on creating vehicle platforms to limit the development of entirely new vehicles and to realize economies of scale with regard to variable cost. In very limited cases, manufacturers may implement an individual technology outside of a vehicle's redesign cycle.[252] In following with these industry practices, EPA has created set of vehicle technology packages that represent the entire light duty fleet.

In evaluating needed lead time, EPA has historically authorized manufacturers of new vehicles or nonroad equipment to phase in available emission control technology over a number of years. Examples of this are EPA's Tier 2 program for cars and light trucks and its 2007 and later PM and NO_X emission standards for heavy-duty vehicles. In both of these rules, the major modifications expected from the rules were the addition of exhaust aftertreatment control technologies. Some changes to the engine were expected as well, but these were not expected to affect engine size, packaging or performance. The CO_2 reduction technologies described above potentially involve much more significant changes to car and light truck designs. Many of the engine technologies involve changes to the engine block and heads. The transmission technologies could change the size and shape of the transmission and thus, packaging. Improvements to aerodynamic drag could involve body design and therefore, the dies used to produce body panels. Changes of this sort potentially involve new capital investment and the obsolescence of existing investment.

At the same time, vehicle designs are not static, but change in major ways periodically. The manufacturers' product plans indicate that vehicles are usually redesigned every 5 years on average.[253] Vehicles also tend to receive a more modest "refresh" between major redesigns, as discussed above. Because manufacturers are already changing their tooling, equipment and designs at these times, further changes to vehicle design at these times involve a minimum of stranded capital equipment. Thus, the timing of any major technological changes is projected to coincide with changes that manufacturers are already making to their vehicles. This approach effectively avoids the need to quantify any costs associated with discarding equipment, tooling, emission and safety certification, etc. when CO_2-reducing equipment is incorporated into a vehicle.

This final rule affects five years of vehicle production, model years 2012–2016. Given the now-typical five year redesign cycle, nearly all of a manufacturer's vehicles will be redesigned over this period. However, this assumes that a manufacturer has sufficient lead time to redesign the first model year affected by this final rule with the requirements of this final rule in mind. In fact, the lead time available for model year 2012 is relatively short. The time between a likely final rule and the start of 2013 model year production is likely to be just over two years. At the same time, the manufacturer product plans indicate that they are planning on introducing many of the technologies projected to be required by this final rule in both 2012 and 2013. In order to account for the relatively short lead time available prior to the 2012 and 2013 model years, albeit mitigated by their existing plans, EPA projects that only 85 percent of each manufacturer's sales will be able to be redesigned with major CO_2 emission-reducing technologies by the 2016 model year. Less intrusive technologies can be introduced into essentially all of a manufacturer's sales. This resulted in three levels of technology penetration caps, by manufacturer. Common technologies (*e.g.,* low friction lubes, aerodynamic improvements) had a penetration cap of 100%. More advanced powertrain technologies (*e.g.,* stoichiometric GDI, turbocharging) had a penetration cap of 85%. The most advanced technologies considered in this analysis (*e.g.,* diesel engines,[254] as well as IMA, powersplit and 2-mode hybrids) had a 15% penetration cap.

This is the same approach as was taken in the NPRM. EPA received several comments commending it on its approach to establishing technical feasibility via its use of the OMEGA model. The only adverse comment received regarding the application of technology was from the Center for Biological Diversity (CBD), which criticized EPA's use of the 5-year redesign cycle. CBD argued that manufacturers occasionally redesign vehicles sooner than 5 years and that EPA did not quantify the cost of shortening the redesign cycle to less than 5 years and compare this cost to the increased benefit of reduced CO_2 emissions. CBD also noted that manufacturers have been recently dropping vehicle lines and entire divisions with very little leadtime, indicating their ability to change product plans much quicker than projected above.

EPA did not explicitly evaluate the cost of reducing the average redesign cycle to less than 5 years for two reasons. One, in the past, manufacturers have usually shortened the redesign cycle to address serious problems with the current design, usually lower than anticipated sales. However, the amortized cost of the capital necessary to produce a new vehicle design will increase by 23%, from one-fifth of the capital cost to one-fourth (and assuming a 3% discount rate). This would be on top of the cost of the emission control equipment itself. The only benefit of this increase in societal cost will be earlier CO_2 emission reductions (and the other benefits associated with CO_2 emission control). The capital costs associated with vehicle redesign go beyond CO_2 emission control and potentially involve every aspect of the vehicle and can represent thousands of dollars. We believe that it would be an inefficient use of societal resources to incur such costs when they can be obtained much more cost effectively just one year later.

Two, the examples of manufacturers dropping vehicle lines and divisions with very short lead time is not relevant to the redesign of vehicles. There is no relationship between a manufacturer's ability to stop selling a vehicle model or to close a vehicle division and a manufacturer's ability to redesign a vehicle. A company could decide to stop selling all of its products within a few weeks—but it would still take a firm approximately 5 years to introduce a major new vehicle line. It is relatively easy to stop the manufacture of a particular product (though this too can

[252] The Center for Biological Diversity submitted comments disputing this distinction as well as the need for lead time. These comments are addressed in Section III.D.7.

[253] *See* discussion in Section III.D.7 with references.

[254] While diesel engines are a mature technology and not "advanced", the aftertreatment systems necessary for them in the U.S. market are advanced.

incur some cost—such as plant wind-down costs, employee layoff or relocation costs, and dealership related costs). It is much more difficult to perform the required engineering design and development, design, purchase, and install the necessary capital equipment and tooling for components and vehicle manufacturing and develop all the processes associated with the application of a new technology. Further discussion of the CBD comments can be found in III.D.7 below.

5. How is EPA projecting that a manufacturer decides between options to improve CO_2 performance to meet a fleet average standard?

EPA is generally taking the same approach to projecting the application of technology to vehicles as it did for the NPRM. With the exception of two comments, all commenters agreed with the modeling approach taken in the NPRM. One of these two comments is addressed is Section III.D.1 above, while the other is addressed in Section III.D.3. above.

There are many ways for a manufacturer to reduce CO_2-emissions from its vehicles. A manufacturer can choose from a myriad of CO_2 reducing technologies and can apply one or more of these technologies to some or all of its vehicles. Thus, for a variety of levels of CO_2 emission control, there are an almost infinite number of technology combinations which produce the desired CO_2 reduction. As noted earlier, EPA developed a new vehicle model, the OMEGA model in order to make a reasonable estimate of how manufacturers will add technologies to vehicles in order to meet a fleet-wide CO_2 emissions level. EPA has described OMEGA's specific methodologies and algorithms in a memo to the docket for this rulemaking (Docket EPA–HQ–OAR–2009–0472).

The OMEGA model utilizes four basic sets of input data. The first is a description of the vehicle fleet. The key pieces of data required for each vehicle are its manufacturer, CO_2 emission level, fuel type, projected sales and footprint. The model also requires that each vehicle be assigned to one of the 19 vehicle types, which tells the model which set of technologies can be applied to that vehicle. (For a description of how the 19 vehicle types were created, reference Section III.D.3.) In addition, the degree to which each vehicle already reflects the effectiveness and cost of each available technology must also be input. This avoids the situation, for example, where the model might try to add a basic engine improvement to a current hybrid vehicle. Except for this type of information, the development of the required data regarding the reference fleet was described in Section III.D.1 above and in Chapter 1 of the Joint TSD.

The second type of input data used by the model is a description of the technologies available to manufacturers, primarily their cost and effectiveness. Note that the five vehicle classes are not explicitly used by the model, rather the costs and effectiveness associated with each vehicle package is based on the associated class. This information was described in Sections III.D.2 and III.D.3 above as well as Chapter 3 of the Joint TSD. In all cases, the order of the technologies or technology packages for a particular vehicle type is determined by the model user prior to running the model. Several criteria can be used to develop a reasonable ordering of technologies or packages. These are described in the Joint TSD.

The third type of input data describes vehicle operational data, such as annual scrap rates and mileage accumulation rates, and economic data, such as fuel prices and discount rates. These estimates are described in Section II.F above, Section III.H below and Chapter 4 of the Joint TSD.

The fourth type of data describes the CO_2 emission standards being modeled. These include the CO_2 emission equivalents of the 2011 MY CAFE standards and the final CO_2 standards for 2016. As described in more detail below, the application of A/C technology is evaluated in a separate analysis from those technologies which impact CO_2 emissions over the 2-cycle test procedure. Thus, for the percent of vehicles that are projected to achieve A/C related reductions, the CO_2 credit associated with the projected use of improved A/C systems is used to adjust the final CO_2 standard which will be applicable to each manufacturer to develop a target for CO_2 emissions over the 2-cycle test which is assessed in our OMEGA modeling.

As mentioned above for the market data input file utilized by OMEGA, which characterizes the vehicle fleet, our modeling must and does account for the fact that many 2008 MY vehicles are already equipped with one or more of the technologies discussed in Section III.D.2 above. Because of the choice to apply technologies in packages, and 2008 vehicles are equipped with individual technologies in a wide variety of combinations, accounting for the presence of specific technologies in terms of their proportion of package cost and CO_2 effectiveness requires careful, detailed analysis. The first step in this analysis is to develop a list of individual technologies which are either contained in each technology package, or would supplant the addition of the relevant portion of each technology package. An example would be a 2008 MY vehicle equipped with variable valve timing and a 6-speed automatic transmission. The cost and effectiveness of variable valve timing would be considered to be already present for any technology packages which included the addition of variable valve timing or technologies which went beyond this technology in terms of engine related CO_2 control efficiency. An example of a technology which supplants several technologies would be a 2008 MY vehicle which was equipped with a diesel engine. The effectiveness of this technology would be considered to be present for technology packages which included improvements to a gasoline engine, since the resultant gasoline engines have a lower CO_2 control efficiency than the diesel engine. However, if these packages which included improvements also included improvements unrelated to the engine, like transmission improvements, only the engine related portion of the package already present on the vehicle would be considered. The transmission related portion of the package's cost and effectiveness would be allowed to be applied in order to comply with future CO_2 emission standards.

The second step in this process is to determine the total cost and CO_2 effectiveness of the technologies already present and relevant to each available package. Determining the total cost usually simply involves adding up the costs of the individual technologies present. In order to determine the total effectiveness of the technologies already present on each vehicle, the lumped parameter model described above is used. Because the specific technologies present on each 2008 vehicle are known, the applicable synergies and dis-synergies can be fully accounted for.

The third step in this process is to divide the total cost and CO_2 effectiveness values determined in step 2 by the total cost and CO_2 effectiveness of the relevant technology packages. These fractions are capped at a value of 1.0 or less, since a value of 1.0 causes the OMEGA model to not change either the cost or CO_2 emissions of a vehicle when that technology package is added.

As described in Section III.D.3 above, technology packages are applied to groups of vehicles which generally represent a single vehicle platform and which are equipped with a single engine size (*e.g.,* compact cars with four cylinder engine produced by Ford). These grouping are described in Table III.D.1–1. Thus, the fourth step is to

combine the fractions of the cost and effectiveness of each technology package already present on the individual 2008 vehicles models for each vehicle grouping. For cost, percentages of each package already present are combined using a simple sales-weighting procedure, since the cost of each package is the same for each vehicle in a grouping. For effectiveness, the individual percentages are combined by weighting them by both sales and base CO_2 emission level. This appropriately weights vehicle models with either higher sales or CO_2 emissions within a grouping. Once again, this process prevents the model from adding technology which is already present on vehicles, and thus ensures that the model does not double count technology effectiveness and cost associated with complying with the 2011 MY CAFE standards and the final CO_2 standards.

Conceptually, the OMEGA model begins by determining the specific CO_2 emission standard applicable for each manufacturer and its vehicle class (*i.e.,* car or truck). Since the final rule allows for averaging across a manufacturer's cars and trucks, the model determines the CO_2 emission standard applicable to each manufacturer's car and truck sales from the two sets of coefficients describing the piecewise linear standard functions for cars and trucks in the inputs, and creates a combined car-truck standard. This combined standard considers the difference in lifetime VMT of cars and trucks, as indicated in the final regulations which govern credit trading between these two vehicle classes. For both the 2011 CAFE and 2016 CO_2 standards, these standards are a function of each manufacturer's sales of cars and trucks and their footprint values. When evaluating the 2011 MY CAFE standards, the car-truck trading was limited to 1.2 mpg. When evaluating the final CO_2 standards, the OMEGA model was run only for MY 2016. OMEGA is designed to evaluate technology addition over a complete redesign cycle and 2016 represents the final year of a redesign cycle starting with the first year of the final CO_2 standards, 2012. Estimates of the technology and cost for the interim model years are developed from the model projections made for 2016. This process is discussed in Chapter 6 of EPA's RIA to this final rule. When evaluating the 2016 standards using the OMEGA model, the final CO_2 standard which manufacturers will otherwise have to meet to account for the anticipated level of A/C credits generated was adjusted. On an industry wide basis, the projection shows that manufacturers will generate 11 g/mi of A/C credit in 2016. Thus, the 2016 CO_2 target for the fleet evaluated using OMEGA was 261 g/mi instead of 250 g/mi.

As noted above, EPA estimated separately the cost of the improved A/C systems required to generate the 11 g/mi credit. This is consistent with our final A/C credit procedures, which will grant manufacturers A/C credits based on their total use of improved A/C systems, and not on the increased use of such systems relative to some base model year fleet. Some manufacturers may already be using improved A/C technology. However, this represents a small fraction of current vehicle sales. To the degree that such systems are already being used, EPA is over-estimating both the cost and benefit of the addition of improved A/C technology relative to the true reference fleet to a small degree.

The model then works with one manufacturer at a time to add technologies until that manufacturer meets its applicable standard. The OMEGA model can utilize several approaches to determining the order in which vehicles receive technologies. For this analysis, EPA used a "manufacturer-based net cost-effectiveness factor" to rank the technology packages in the order in which a manufacturer is likely to apply them. Conceptually, this approach estimates the cost of adding the technology from the manufacturer's perspective and divides it by the mass of CO_2 the technology will reduce. One component of the cost of adding a technology is its production cost, as discussed above. However, it is expected that new vehicle purchasers value improved fuel economy since it reduces the cost of operating the vehicle. Typical vehicle purchasers are assumed to value the fuel savings accrued over the period of time which they will own the vehicle, which is estimated to be roughly five years. It is also assumed that consumers discount these savings at the same rate as that used in the rest of the analysis (3 or 7 percent). Any residual value of the additional technology which might remain when the vehicle is sold is not considered. The CO_2 emission reduction is the change in CO_2 emissions multiplied by the percentage of vehicles surviving after each year of use multiplied by the annual miles travelled by age, again discounted to the year of vehicle purchase.

Given this definition, the higher priority technologies are those with the lowest manufacturer-based net cost-effectiveness value (relatively low technology cost or high fuel savings leads to lower values). Because the order of technology application is set for each vehicle, the model uses the manufacturer-based net cost-effectiveness primarily to decide which vehicle receives the next technology addition. Initially, technology package #1 is the only one available to any particular vehicle. However, as soon as a vehicle receives technology package #1, the model considers the manufacturer-based net cost-effectiveness of technology package #2 for that vehicle and so on. In general terms, the equation describing the calculation of manufacturer-based cost effectiveness is as follows:

$$ManufCostEff = \frac{TechCost - \sum_{i=1}^{PP}\left[dFS_i \times VMT_i\right] \times \frac{1}{(1-Gap)}}{\sum_{i}^{i+35}\left[\left[dCO2\right] \times VMT_i\right] \times \frac{1}{(1-Gap)}}$$

Where

ManufCostEff = Manufacturer-Based Cost Effectiveness (in dollars per kilogram CO_2),

TechCost = Marked up cost of the technology (dollars),

PP = Payback period, or the number of years of vehicle use over which consumers value fuel savings when evaluating the value of a new vehicle at time of purchase,

dFS_i = Difference in fuel consumption due to the addition of technology times fuel price in year i,

dCO_2 = Difference in CO_2 emissions due to the addition of technology,

VMTi = product of annual VMT for a vehicle of age i and the percentage of vehicles of age i still on the road, and

1- Gap = Ratio of onroad fuel economy to two-cycle (FTP/HFET) fuel economy.

The OMEGA model does not currently allow for the VMT used in determining the various technology ranking factors to be a function of the rebound factor. If the user believed that the consideration of rebound VMT was important, they could increase their estimate of the payback period to simulate the impact of the rebound VMT.

EPA describes the technology ranking methodology and manufacturer-based cost effectiveness metric in greater detail in a technical memo to the Docket for this final rule (Docket EPA–HQ–OAR–2009–0472).

When calculating the fuel savings, the full retail price of fuel, including taxes is used. While taxes are not generally included when calculating the cost or benefits of a regulation, the net cost component of the manufacturer-based net cost-effectiveness equation is not a measure of the social cost of this final rule, but a measure of the private cost, (*i.e.,* a measure of the vehicle purchaser's willingness to pay more for a vehicle with higher fuel efficiency). Since vehicle operators pay the full price of fuel, including taxes, they value fuel costs or savings at this level, and the manufacturers will consider this when choosing among the technology options.

This definition of manufacturer-based net cost-effectiveness ignores any change in the residual value of the vehicle due to the additional technology when the vehicle is five years old. As discussed in Chapter 1 of the RIA, based on historic used car pricing, applicable sales taxes, and insurance, vehicles are worth roughly 23% of their original cost after five years, discounted to year of vehicle purchase at 7% per annum. It is reasonable to estimate that the added technology to improve CO_2 level and fuel economy will retain this same percentage of value when the vehicle is five years old. However, it is less clear whether first purchasers, and thus, manufacturers consider this residual value when ranking technologies and making vehicle purchases, respectively. For this final rule, this factor was not included in our determination of manufacturer-based net cost-effectiveness in the analyses performed in support of this final rule.

The values of manufacturer-based net cost-effectiveness for specific technologies will vary from vehicle to vehicle, often substantially. This occurs for three reasons. First, both the cost and fuel-saving component cost, ownership fuel-savings, and lifetime CO_2 effectiveness of a specific technology all vary by the type of vehicle or engine to which it is being applied (*e.g.,* small car versus large truck, or 4-cylinder versus 8-cylinder engine). Second, the effectiveness of a specific technology often depends on the presence of other technologies already being used on the vehicle (*i.e.,* the dis-synergies). Third, the absolute fuel savings and CO_2 reduction of a percentage on incremental reduction in fuel consumption depends on the CO_2 level of the vehicle prior to adding the technology. Chapter 1 of the RIA of this final rule contains further detail on the values of manufacturer-based net cost-effectiveness for the various technology packages.

6. Why are the final CO_2 standards feasible?

The finding that the final standards are technically feasible is based primarily on two factors. One is the level of technology needed to meet the final standards. The other is the cost of this technology. The focus is on the final standards for 2016, as this is the most stringent standard and requires the most extensive use of technology.

With respect to the level of technology required to meet the standards, EPA established technology penetration caps. As described in Section III.D.4, EPA used two constraints to limit the model's application of technology by manufacturer. The first was the application of common fuel economy enablers such as low rolling resistance tires and transmission logic changes. These were allowed to be used on all vehicles and hence had no penetration cap. The second constraint was applied to most other technologies and limited their application to 85% with the exception of the most advanced technologies (*e.g.,* power-split hybrid and 2-mode hybrid) and diesel,[255] whose application was limited to 15%.

EPA used the OMEGA model to project the technology (and resultant cost) required for manufacturers to meet the current 2011 MY CAFE standards and the final 2016 MY CO_2 emission standards. Both sets of standards were evaluated using the OMEGA model. The 2011 MY CAFE standards were applied to cars and trucks separately with the transfer of credits from one category to the other allowed up to an increase in fuel economy of 1.0 mpg as allowed under the applicable MY 2011 CAFE regulations. Chrysler, Ford and General Motors are assumed to utilize FFV credits up to the maximum of 1.2 mpg for both their car and truck sales. Nissan is assumed to utilize FFV credits up to the maximum of 1.2 mpg for only their truck sales. The use of any banked credits from previous model years was not considered. The modification of the reference fleet to comply with the 2011 CAFE standards through the application of technology by the OMEGA model is the final step in creating the final reference fleet. This final reference fleet forms the basis for comparison for the model year 2016 standards.

Table III.D.6–1 shows the usage level of selected technologies in the 2008 vehicles coupled with 2016 sales prior to projecting their compliance with the 2011 MY CAFE standards. These technologies include converting port fuel-injected gasoline engines to direct injection (GDI), adding the ability to deactivate certain engine cylinders during low load operation to overhead cam engines (OHC–DEAC), adding a turbocharger and downsizing the engine (Turbo), diesel engine technology, increasing the number of transmission speeds to 6, or converting automatic transmissions to dual-clutch automated manual transmissions (Dual-Clutch Trans), adding 42 volt start-stop capability (Start-Stop), and converting a vehicle to an intermediate or strong hybrid design. This last category includes three current hybrid designs: Integrated motor assist (IMA), power-split (PS), 2-mode hybrids and electric vehicles.[256]

[255] While diesel engines are not an "advanced technology" per se, diesel engines that can meet EPA's light duty Tier 2 Bin 5 NO_X standards have advanced (and somewhat costly) aftertreatment systems on them that make this technology penetration cap appropriate in addition to their relatively high incremental costs.

[256] EPA did not project reliance on the use of any plug-in hybrid or battery electric vehicles when projecting manufacturers' compliance with the 2016 standards. However, BMW did sell a battery electric vehicle in the 2008 model year, so these sales are included in the technology penetration estimates for the reference case and the final and alternative standards evaluated for 2016.

TABLE III.D.6–1—PENETRATION OF TECHNOLOGY IN 2008 VEHICLES WITH 2016 SALES: CARS AND TRUCKS

[Percent of sales]

	GDI	OHC–DEAC	Turbo	Diesel	6 Speed auto trans	Dual clutch trans	Start-stop	Hybrid
BMW	7.5	0.0	6.1	0.0	86	0.9	0	0.1
Chrysler	0.0	0.0	0.5	0.1	14	0.0	0	0.0
Daimler	0.0	0.0	6.5	5.6	76	7.5	0	0.0
Ford	0.4	0.0	2.2	0.0	29	0.0	0	0.0
General Motors	3.1	0.0	1.4	0.0	15	0.0	0	0.3
Honda	1.4	7.1	1.4	0.0	0	0.0	0	2.1
Hyundai	0.0	0.0	0.0	0.0	3	0.0	0	0.0
Kia	0.0	0.0	0.0	0.0	0	0.0	0	0.0
Mazda	13.6	0.0	13.6	0.0	26	0.0	0	0.0
Mitsubishi	0.0	0.0	0.0	0.0	10	0.0	0	0.0
Nissan	0.0	0.0	0.0	0.0	0	0.0	0	0.8
Porsche	58.6	0.0	14.9	0.0	49	0.0	0	0.0
Subaru	0.0	0.0	9.8	0.0	0	0.0	0	0.0
Suzuki	0.0	0.0	0.0	0.0	0	0.0	0	0.0
Tata	0.0	0.0	17.3	0.0	99	0.0	0	0.0
Toyota	6.8	0.0	0.0	0.0	21	0.0	0	11.6
Volkswagen	50.6	0.0	39.5	0.0	69	13.1	0	0.0
Overall	3.8	0.8	2.6	0.1	19.1	0.5	0.0	2.2

As can be seen, all of these technologies were already being used on some 2008 MY vehicles, with the exception of direct injection gasoline engines with either cylinder deactivation or turbocharging and downsizing. Transmissions with more gearsets were the most prevalent, with some manufacturers (*e.g.,* BMW, Suzuki) using them on essentially all of their vehicles. Both Daimler and VW equip many of their vehicles with automated manual transmissions, while VW makes extensive use of direct injection gasoline engine technology. Toyota has converted a significant percentage of its 2008 vehicles to strong hybrid design.

Table III.D.6–2 shows the usage level of the same technologies in the reference case fleet after projecting their compliance with the 2011 MY CAFE standards. Except for mass reduction, the figures shown represent the percentages of each manufacturer's sales which are projected to be equipped with the indicated technology. For mass reduction, the overall mass reduction projected for that manufacturer's sales is also shown. The last row in Table III.D.6–2 shows the increase in projected technology penetration due to compliance with the 2011 MY CAFE standards. The results of DOT's Volpe modeling were used to project that all manufacturers would comply with the 2011 MY standards in 2016 without the need to pay fines, with one exception. This exception was Porsche in the case of their car fleet. When projecting Porsche's compliance with the 2011 MY CAFE standard for cars, NHTSA projected that Porsche would achieve a CO_2 emission level of 304.3 g/mi instead of the required 284.8 g/mi level (29.2 mpg instead of 31.2 mpg), and pay fines in lieu of further control.

TABLE III.D.6–2—PENETRATION OF TECHNOLOGY UNDER 2011 MY CAFE STANDARDS IN 2016 SALES: CARS AND TRUCKS

[Percent of sales]

	GDI	OHC–DEAC	Turbo	6 Speed auto trans	Dual clutch trans	Start-stop	Mass reduction
BMW	44	12	30	53	37	13	2
Chrysler	0	0	0	18	0	0	0
Daimler	23	22	8	52	34	26	2
Ford	0	0	3	27	0	0	0
General Motors	3	0	1	15	0	0	0
Honda	2	6	2	0	0	0	0
Hyundai	0	0	0	3	0	0	0
Kia	0	0	0	0	0	0	0
Mazda	13	0	13	20	0	0	0
Mitsubishi	32	0	2	25	35	0	1
Nissan	0	0	0	0	0	0	0
Porsche	92	0	75	5	55	38	4
Subaru	0	0	9	0	0	0	0
Suzuki	70	0	0	3	67	67	3
Tata	85	54	20	27	73	73	6
Toyota	7	0	0	19	0	0	0
Volkswagen	89	5	81	14	78	18	3
Overall	10	2	7	16	7	3	0
Increase over 2008 MY	6	1	4	−3	6	3	0

As can be seen, the 2011 MY CAFE standards, when evaluated on an industry wide basis, require only a modest increase in the use of these technologies. The projected MY 2016 fraction of automatic transmission with more gearsets actually decreases slightly due to conversion of these units to more efficient designs such as automated manual transmissions and hybrids. However, the impact of the 2011 MY CAFE standards is much greater on selected manufacturers, particularly BMW, Daimler, Porsche, Tata (Jaguar/Land Rover) and VW. All of these manufacturers are projected to increase their use of direct injection gasoline engine technology, advanced transmission technology, and start-stop technology. It should be noted that these manufacturers have traditionally paid fines under the CAFE program. However, with higher fuel prices and the lower cost mature technology projected to be available by 2016, these manufacturers would likely find it in their best interest to improve their fuel economy levels instead of continuing to pay fines (again with the exception of Porsche cars). While not shown, no gasoline engines were projected to be converted to diesel technology and no hybrid vehicles were projected. Most manufacturers do not require the level of CO_2 emission control associated with either of these technologies. The few manufacturers that would were projected to choose to pay CAFE fines in 2011 in lieu of adding diesel or hybrid technologies.

This 2008 baseline fleet, modified to meet 2011 standards, becomes our "reference" case. See Section II.B above. This is the fleet against which the final 2016 standards are compared. Thus, it is also the fleet that is assumed to exist in the absence of this rule. No air conditioning improvements are assumed for model year 2011 vehicles. The average CO_2 emission levels of this reference fleet vary slightly from 2012–2016 due to small changes in the vehicle sales by market segments and manufacturer. CO_2 emissions from cars range from 282–284 g/mi, while those from trucks range from 382–384 g/mi. CO_2 emissions from the combined fleet range from 316–320. These estimates are described in greater detail in Section 5.3.2.2 of the EPA RIA.

Conceptually, both EPA and NHTSA perform the same projection in order to develop their respective reference fleets. However, because the two agencies use two different models to modify the baseline fleet to meet the 2011 CAFE standards, the projected technology that could be added will be slightly different. The differences, however, are relatively small since most manufacturers only require modest addition of technology to meet the 2011 CAFE standards.

EPA then used the OMEGA model once again to project the level of technology needed to meet the final 2016 CO_2 emission standards. Using the results of the OMEGA model, every manufacturer was projected to be able to meet the final 2016 standards with the technology described above except for four: BMW, VW, Porsche and Tata (which is comprised of Jaguar and Land Rover vehicles in the U.S. fleet). For these manufacturers, the results presented below are those with the fully allowable application of technology available in EPA's OMEGA modeling analysis and not for the technology projected to enable compliance with the final standards. Described below are a number of potential feasible solutions for how these companies can achieve compliance. The overall level of technology needed to meet the final 2016 standards is shown in Table III.D.6–3. As discussed above, all manufacturers are projected to improve the air conditioning systems on 85% of their 2016 sales.[257]

TABLE III.D.6–3—FINAL PENETRATION OF TECHNOLOGY FOR 2016 CO_2 STANDARDS: CARS AND TRUCKS

[Percent of sales]

	GDI	OHC–DEAC	Turbo	Diesel	6 Speed auto trans	Dual clutch trans	Start-stop	Hybrid	Mass Reduction
BMW	80	21	61	6	13	63	65	14	5
Chrysler	79	13	17	0	31	52	54	0	6
Daimler	76	30	53	5	12	72	67	14	5
Ford	84	21	19	0	27	60	61	0	6
General Motors	67	25	14	0	8	61	61	0	6
Honda	43	6	2	0	0	49	18	2	3
Hyundai	59	0	1	0	8	52	32	0	3
Kia	33	0	1	0	0	52	4	0	2
Mazda	60	0	14	1	17	47	41	0	4
Mitsubishi	74	0	33	0	14	74	74	0	6
Nissan	66	7	11	0	2	62	58	1	5
Porsche	83	15	62	8	5	45	62	15	4
Subaru	60	0	9	0	0	58	44	0	3
Suzuki	77	0	0	0	10	67	67	0	4
Tata	85	55	27	0	14	70	70	15	5
Toyota	26	7	3	0	13	40	7	12	2
Volkswagen	82	18	71	11	10	68	60	15	4
Overall	60	13	15	1	12	55	42	4	4
Increase over 2011 CAFE	49	11	9	1	−4	48	39	2	4

[257] Many of the technologies shown in this table are mutually exclusive. Thus, 85% penetration might not be possible. For example, any use of hybrids will reduce the DEAC, Turbo, 6SPD, DCT, and 42V S–S technologies. Additionally, not every technology is available to be used on every vehicle type.

Table III.D.6–4 shows the 2016 standards, as well as the achieved CO_2 emission levels for the five manufacturers which are not able to meet these standards under the premises of our modeling. It should be noted that the two sets of combined emission levels shown in Table III.D.6–4 are based on sales weighting car and truck emission levels.

TABLE III.D.6–4—EMISSIONS OF MANUFACTURERS UNABLE TO MEET FINAL 2016 STANDARDS (G/MI CO_2)

Manufacturer	Achieved emissions			2016 Standards			Shortfall
	Car	Truck	Combined	Car	Truck	Combined	Combined
BMW	236.3	278.7	248.5	228.4	282.5	243.9	4.6
Tata	258.6	323.6	284.2	249.9	272.5	258.8	25.4
Daimler	246.3	297.8	262.6	238.3	294.3	256.1	6.5
Porsche	244.1	332.0	273.4	206.1	286.9	233.0	40.4
Volkswagen	223.5	326.6	241.6	218.6	292.7	231.6	10.0

As can be seen, BMW and Daimler have the smallest shortfalls, 5–6 g/mi, while Porsche has the largest, 40 g/mi.

On an industry average basis, the technology penetrations are very similar to those projected in the proposal. There is a slight shift from the use of cylinder deactivation to the two advanced transmission technologies. This is due to the fact that the estimated costs for these three technologies have been updated, and thus, their relative cost effectiveness when applied to specific vehicles have also shifted. The reader is referred to Section II.E of this preamble as well as Chapter 3 of the Joint TSD for a detailed description of the cost estimates supporting this final rule and to the RIA for a description of the selection of technology packages for specific vehicle types. The other technologies shown in Table III.D.6–4 changed by 2 percent or less between the proposal and this final rule.

As can be seen, the overall average reduction in vehicle weight is projected to be 4 percent. This reduction varies across the two vehicle classes and vehicle base weight. For cars below 2,950 pounds curb weight, the average reduction is 2.8 percent (75 pounds), while the average was 4.3 percent (153 pounds) for cars above 2,950 curb weight. For trucks below 3,850 pounds curb weight, the average reduction is 4.7 percent (163 pounds), while it was 5.1 percent (240 pounds) for trucks above 3,850 curb weight. Splitting trucks at a higher weight, for trucks below 5,000 pounds curb weight, the average reduction is 4.4 percent (186 pounds), while it was 7.0 percent (376 pounds) for trucks above 5,000 curb weight.

The levels of requisite technologies differ significantly across the various manufacturers. Therefore, several analyses were performed to ascertain the cause. Because the baseline case fleet consists of 2008 MY vehicle designs, these analyses were focused on these vehicles, their technology and their CO_2 emission levels.

Comparing CO_2 emissions across manufacturers is not a simple task. In addition to widely varying vehicle styles, designs, and sizes, manufacturers have implemented fuel efficient technologies to varying degrees, as indicated in Table III.D.6–1. The projected levels of requisite technology to enable compliance with the final 2016 standards shown in Table III.D.6–3 account for two of the major factors which can affect CO_2 emissions (1) Level of technology already being utilized and (2) vehicle size, as represented by footprint.

For example, the fuel economy of a manufacturer's 2008 vehicles may be relatively high because of the use of advanced technologies. This is the case with Toyota's high sales of their Prius hybrid. However, the presence of this technology in a 2008 vehicle eliminates the ability to significantly reduce CO_2 further through the use of this technology. In the extreme, if a manufacturer were to hybridize a high level of its sales in 2016, it does not matter whether this technology was present in 2008 or whether it would be added in order to comply with the standards. The final level of hybrid technology would be the same. Thus, the level at which technology is present in 2008 vehicles does not explain the difference in requisite technology levels shown in Table III.D.6–3.

Similarly, the final CO_2 emission standards adjust the required CO_2 level according to a vehicle's footprint, requiring lower absolute emission levels from smaller vehicles. Thus, just because a manufacturer produces larger vehicles than another manufacturer does not explain the differences seen in Table III.D.6–3.

In order to remove these two factors from our comparison, the EPA lumped parameter model described above was used to estimate the degree to which technology present on each 2008 MY vehicle in our reference fleet was improving fuel efficiency. The effect of this technology was removed and each vehicle's CO_2 emissions were estimated as if it utilized no additional fuel efficiency technology beyond the baseline. The differences in vehicle size were accounted for by determining the difference between the sales-weighted average of each manufacturer's "no technology" CO_2 levels to their required CO_2 emission level under the final 2016 standards. The industry-wide difference was subtracted from each manufacturer's value to highlight which manufacturers had lower and higher than average "no technology" emissions. The results are shown in Figure III.D.6–1.

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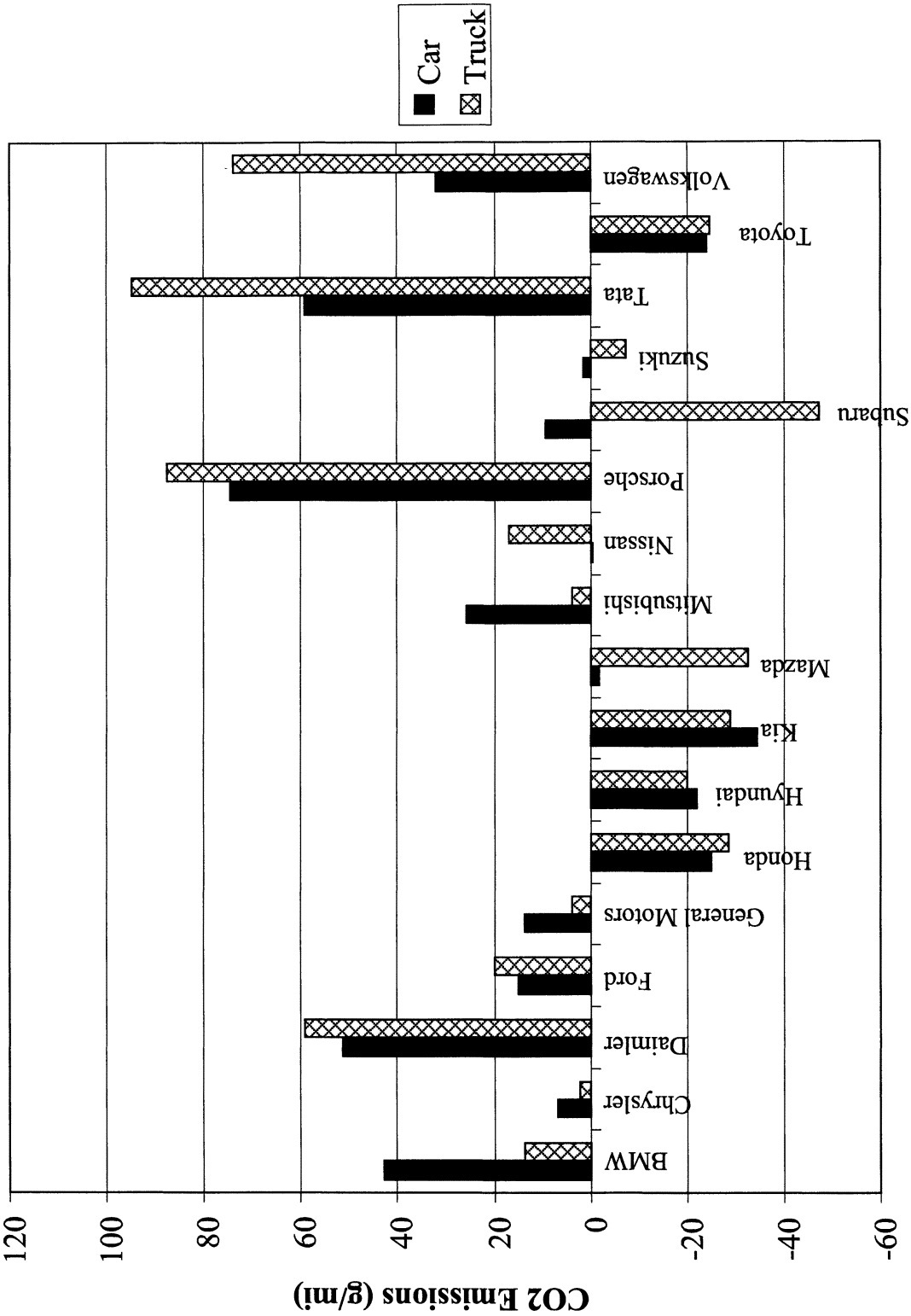

Figure III.D.6-1 CO_2 Emission Reduction Required in 2016 from 2008 Vehicles After Removing the Benefit of Technology Already Present, Relative to That for the Fleet as a Whole

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As can be seen in Table III.D.6–3 the manufacturers projected to require the greatest levels of technology also show the highest offsets relative to the industry. The greatest offset shown in Figure III.D.6–1 is for Tata's trucks (Land Rover). These vehicles are estimated to have 100 g/mi greater CO_2 emissions than the average 2008 MY truck after accounting for differences in the use of fuel saving technology and footprint. The lowest adjustment is for Subaru's trucks, which have 50 g/mi CO_2 lower emissions than the average truck.

While this comparison confirms the differences in the technology penetrations shown in Table III.D.6–3, it does not yet explain why these differences exist. Two well-known factors affecting vehicle fuel efficiency are vehicle weight and acceleration performance (henceforth referred to as "performance"). The footprint-based form of the final CO_2 standard accounts for most of the difference in vehicle weight seen in the 2008 MY fleet. However, even at the same footprint, vehicles can have varying weights. Higher performing vehicles also tend to have higher CO_2 emissions over the two-cycle fuel economy test procedure. So manufacturers with higher average performance levels will tend to have higher average CO_2 emissions for any given footprint. This variability at any given footprint contributes to much of the scatter in the data (shown for example on plots like Figures II.C.1–3 through II.C.1–6).

We developed a methodology to assess the impact of these two factors on each manufacturer's projected compliance with the 2016 standards. First, we had to remove (or isolate) the effect of CO_2 control technology already being employed on 2008 vehicles. As described above, 2008 vehicles exhibit a wide range of control technology and leaving these impacts in place would confound the assessment of performance and weight on CO_2 emissions. Thus, the first step was to estimate each vehicle's "no technology" CO_2 emissions. To do this, we used the EPA lumped parameter model (described in the TSD) to estimate the overall percentage reduction in CO_2 emissions associated with technology already on the vehicle and then backed out this effect mathematically. Second, we performed a least-square linear regression of these no technology CO_2 levels against curb weight and the ratio of rated engine horsepower to curb weight simultaneously. The ratio of rated engine horsepower to curb weight is a good surrogate for acceleration performance and the data is available for all vehicles, whereas the zero to sixty time is not. Both factors were found to be statistically significant at the 95% confidence level. Together, they explained over 80% of the variability in vehicles' CO_2 emissions for cars and over 70% for trucks. Third, we determined the sales-weighted average curb weight per footprint for cars and trucks, respectively, for the fleet as a whole. We also determined the sales-weighted average of the ratio of rated engine horsepower to curb weight for cars and trucks, respectively, for the fleet as a whole. Fourth, we adjusted each vehicle's "no technology" CO_2 emissions to eliminate the degree to which the vehicle had higher or lower acceleration performance or curb weight per footprint relative to the car or truck fleet as a whole. For example, if a car's ratio of horsepower to weight was 0.007 and the average ratio for all cars was 0.006, then the vehicle's "no technology" CO_2 emission level was reduced by the difference between these two values (0.001) times the impact of the ratio of horsepower to weight on car CO_2 emissions from the above linear regression. Finally, we substituted these performance and weight adjusted CO_2 emission levels for the original, "no technology" CO_2 emission levels shown in Figure III.D.6–1. The results are shown in Figure III.D.6–2.

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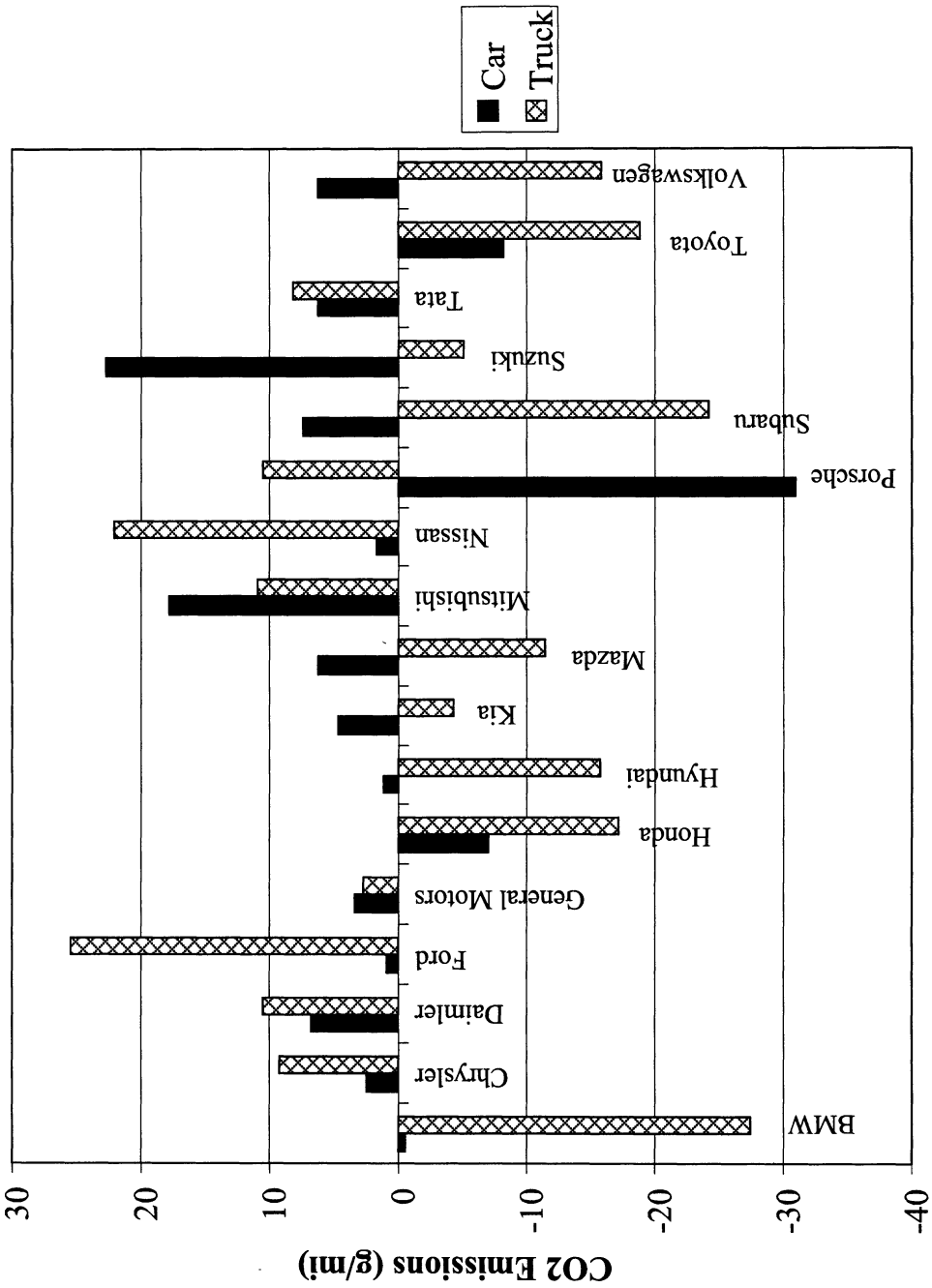

Figure III.D.6-2 CO_2 Emission Reduction Required in 2016 From 2008 Vehicles After 1) Removing the Benefit of Technology Already Present, and 2) Adjusting for Differences in Weight per Footprint. and Performance. Relative to That for the Fleet as a as a Whole

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First, note that the scale in Figure III.D.6–2 is much smaller by a factor of 3 than that in Figure III.D.6–1. In other words, accounting for differences in vehicle weight (at constant footprint) and performance dramatically reduces the variability among the manufacturers' CO_2 emissions. Most of the manufacturers with high positive offsets in Figure III.D.6–1 now show low or negative offsets. For example, BMW's and VW's trucks show very low CO_2 emissions. Tata's emissions are very close to the industry average. Daimler's vehicles are no more than 10 g/mi above the average for the industry. This analysis indicates that the primary reasons for the differences in technology penetrations shown for the various manufacturers in Table III.D.6–3 are weight and acceleration performance. EPA has not determined why some manufacturers' vehicle weight is relatively high for its footprint value, or whether this weight provides additional utility for the consumer. Performance is more straightforward. Some consumers desire high-acceleration performance and some manufacturers orient their sales towards these consumers. However, the cost in terms of CO_2 emissions is clear. Manufacturers producing relatively heavy or high performance vehicles presently (with concomitant increased CO_2 emissions) will require greater levels of technology in order to meet the final CO_2 standards in 2016.

As can be seen from Table III.D.6–3 above, widespread use of several technologies is projected due to the final standards. The vast majority of engines are projected to be converted to direct injection, with some of these engines including cylinder deactivation or turbocharging and downsizing. More than 60 percent of all transmissions are projected to be either 6+ speed automatic transmissions or dual-clutch automated manual transmissions. More than one-third of the fleet is projected to be equipped with 42 volt start-stop capability. This technology was not utilized in 2008 vehicles, but as discussed above, promises significant fuel efficiency improvement at a moderate cost.

In their comments, Porsche stated that their vehicles have twice the power-to-weight ratio as the fleet average and that their vehicles presently have a high degree of technology penetration, which allows them to meet the 2009 CAFE standards. Porsche also commented that the 2016 standards are not feasible for their firm, in part due to the high level of technologies already present in their vehicles and due to their "very long production life cycles". BMW in their comments stated that their vehicles are "feature-dense" thus "requiring additional efforts to comply" with future standards.[258] Ferrari, in their comments, states that the standards are not feasible for high-performance sports cars without compromising on their "distinctiveness". They also state that because they already have many technologies on the vehicles, "there are limited possibilities for further improvements." Finally Ferrari states that smaller volume manufacturers have higher costs "because they can be distributed over very limited production volumes", and they have longer product lifecycles. The latter view was also shared by Lotus. These comments will be addressed below, but are cited here as supporting the conclusions from the above analysis that high-performance and feature-dense vehicles have a greater challenge meeting the 2016 standards. In general, other manufacturers covering the rest of the fleet and other commenters agreed with EPA's analysis in the proposal of projected technology usage, and supported the view that the 2016 model year standards were feasible in the lead-time provided.

In response to the comments above, EPA foresees no significant technical or engineering issues with the projected deployment of these technologies across the fleet by MY 2016, with their incorporation being folded into the vehicle redesign process (with the exception of some of the small volume manufacturers). All of these technologies are commercially available now. The automotive industry has already begun to convert its port fuel-injected gasoline engines to direct injection. Cylinder deactivation and turbocharging technologies are already commercially available. As indicated in Table III.D.6–1, high-speed transmissions are already widely used. However, while more common in Europe, automated manual transmissions are not currently used extensively in the U.S. Widespread use of this technology would require significant capital investment but does not present any significant technical or engineering issues. Start-stop systems based on a 42-volt architecture also represent a challenge because of the complications involved in a changeover to a higher voltage electrical architecture. However, with appropriate capital investments (which are captured in the EPA estimated costs), these technology penetration rates are achievable within the timeframe of this rule. While most manufacturers have some plans for these systems, our projections indicate that their use may exceed 35% of sales, with some manufacturers projected to use higher levels.

Most manufacturers are not projected to hybridize any vehicles to comply with the final standards. The hybrids shown for Toyota are projected to be sold even in the absence of the final standards. However the relatively high hybrid penetrations (14–15%) projected for BMW, Daimler, Porsche, Tata and Volkswagen deserve further discussion. These manufacturers are all projected by the OMEGA model to utilize the maximum application of full hybrids allowed by our model in this timeframe, which is 15 percent.

As discussed in the EPA RIA, a maximum 2016 technology penetration rate of 85% is projected for the vast majority of available technologies, however, for full hybrid systems the projection shows that given the available lead-time full hybrids can only be applied to approximately 15% of a manufacturer's fleet. This number of course can vary by manufacturer. Hybrids are a relatively costly technology option which requires significant changes to a vehicle's powertrain design, and EPA estimates that manufacturers will require a significant amount of lead time and capital investment to introduce this technology into the market in very large numbers. Thus the EPA captures this significant change in production facilities with a lower penetration cap. A more thorough discussion of lead time limitations can be found below and in Section III.B.5.

While the hybridization levels of BMW, Daimler, Porsche, Tata and Volkswagen are relatively high, the sales levels of these five manufacturers are relatively low. Thus, industry-wide, hybridization reaches only 4 percent, compared with 3 percent in the reference case. This 4 percent level is believed to be well within the capability of the hybrid component industry by 2016. Thus, the primary challenge for these five companies would be at the manufacturer level, redesigning a relatively large percentage of sales to include hybrid technology. The final TLAAS provisions will provide significant needed lead time to these manufacturers for pre-2016 compliance, since all qualified companies are able to take advantage of these provisions.

By 2016, it is likely that these manufacturers would also be able to

[258] As a side note, one of the benefits for the off-cycle technology credits allowed in this final rule is the opportunity this flexibility provides for some of these 'feature-dense' vehicles to generate such credits to assist, to some extent, in the companies' ability to comply.

change vehicle characteristics which currently cause their vehicles to emit much more CO_2 than similar sized vehicles produced by other manufacturers. These factors may include changes in model mix, further mass reduction, electric and/or plug-in hybrid vehicles as well as technologies that may not be included in our packages. Also, companies may have technology penetration rates of less costly technologies (listed in the above tables) greater than 85%, and they may also be able to apply hybrid technology to more than 15 percent of their fleet (while the 15% cap on the application of hybrid technology is reasonable for the industry as a whole, higher percentages are certainly possible for individual manufacturers, particularly those with small volumes). For example, a switch to a low GWP alternative refrigerant in a large fraction of a fleet can replace many other much more costly technologies, but this option is not captured in the modeling. In addition, these manufacturers can also take advantage of flexibilities, such as early credits for air conditioning and trading with other manufacturers.

EPA believes it is likely that there will be certain high volume manufacturers that will earn a significant amount of early GHG credits starting in 2010 that would expire 5 years later, by 2015, unused. It is possible that these manufacturers may be willing to sell these credits to manufacturers with whom there is little or no direct competition.[259] Furthermore, a large number of manufacturers have also stated publicly that they support the 2016 standards. The following companies have all submitted letters in support of the national program, including the 2016 MY levels discussed above: BMW, Chrysler, Daimler, Ford, GM, Nissan, Honda, Mazda, Toyota, and Volkswagen. This supports the view that the emissions reductions needed to achieve the standards are technically and economically feasible for all these companies, and that EPA's projection of model year 2016 non-compliance for BMW, Daimler, and Volkswagen is based on an inability of our model at this time to fully account for the full flexibilities of the EPA program as well as the potentially unique technology approaches or new product offerings which these manufacturers are likely to employ.

In addition, manufacturers do not need to apply technology exactly according to our projections. Our projections simply indicate one path which would achieve compliance. Those manufacturers whose vehicles are heavier (feature dense) and higher performing than average in particular have additional options to facilitate compliance and reduce their technological burden closer to the industry average. These options include decreasing the mass of the vehicles and/or decreasing the power output of the engines. Finally, EPA allows compliance to be shown through the use of emission credits obtained from other manufacturers. Especially for the lower volume sales of some manufacturers that could be one component of an effective compliance strategy, reducing the technology that needs to be employed on their vehicles.

For light-duty cars and trucks, manufacturers have available to them a range of technologies that are currently commercially available and can feasibly be employed in their vehicles by MY 2016. Our modeling projects widespread use of these technologies as a technologically feasible approach to complying with the final standards. Comments from the manufacturers provided broad support for this conclusion. A limited number of commenters presented specific concerns about their technology opportunities, and EPA has described above (and elsewhere in the rule) the paths available for them to comply.

In sum, EPA believes that the emissions reductions called for by the final standards are technologically feasible, based on projections of widespread use of commercially available technology, as well as use by some manufacturers of other technology approaches and compliance flexibilities not fully reflected in our modeling.

EPA also projected the cost associated with these projections of technology penetration. Table III.D.6–4 shows the cost of technology in order for manufacturers to comply with the 2011 MY CAFE standards, as well as those associated with the final 2016 CO_2 emission standards. The latter costs are incremental to those associated with the 2011 MY standards and also include $60 per vehicle, on average, for the cost of projected use of improved air-conditioning systems.[260]

TABLE III.D.6–4—COST OF TECHNOLOGY PER VEHICLE IN 2016 ($2007)

	2011 MY CAFE standards, relative to 2008 MY			Final 2016 CO_2 standards, relative to 2011 MY CAFE standards		
	Cars	Trucks	All	Cars	Trucks	All
BMW	$346	$423	$368	$1,558	$1,195	$1,453
Chrysler	33	116	77	1,129	1,501	1,329
Daimler	468	683	536	1,536	931	1,343
Ford	73	161	106	1,108	1,442	1,231
General Motors	31	181	102	899	1,581	1,219
Honda	0	0	0	635	473	575
Hyundai	0	69	10	802	425	745
Kia	0	42	7	667	247	594
Mazda	0	0	0	855	537	808
Mitsubishi	328	246	295	817	1,218	978
Nissan	0	61	18	686	1,119	810
Porsche	473	706	550	1,506	759	1,257
Subaru	68	62	66	962	790	899
Suzuki	49	232	79	1,015	537	937
Tata	611	1,205	845	1,181	680	984
Toyota	0	0	0	381	609	455
Volkswagen	228	482	272	1,848	972	1,694

[259] For example, a manufacturer that only sells electric vehicles may very well sell the credits they earn to another manufacturer that does not sell any electric vehicles.

[260] Note that the actual cost of the A/C technology is estimated at $71 per vehicle as shown in Table III.D.2–3. However, we expect only 85 percent of the fleet to add that technology. Therefore, the cost of the technology when spread across the entire fleet is $60 per vehicle ($71 × 85% = $60).

TABLE III.D.6–4—COST OF TECHNOLOGY PER VEHICLE IN 2016 ($2007)—Continued

	2011 MY CAFE standards, relative to 2008 MY			Final 2016 CO_2 standards, relative to 2011 MY CAFE standards		
	Cars	Trucks	All	Cars	Trucks	All
Overall	63	138	89	870	1,099	948

As can be seen, the industry average cost of complying with the 2011 MY CAFE standards is quite low, $89 per vehicle. This cost is $11 per vehicle higher than that projected in the NPRM. This change is very small and is due to several factors, mainly changes in the projected sales of each manufacturer's specific vehicles, and changes in estimated technology costs. Similar to the costs projected in the NPRM, the range of costs across manufacturers is quite large. Honda, Mazda and Toyota are projected to face no cost. In contrast, Mitsubishi, Porsche, Tata and Volkswagen face costs of at least $272 per vehicle. As described above, three of these last four manufacturers (all but Mitsubishi) face high costs to meet even the 2011 MY CAFE standards due to either their vehicles' weight per unit footprint or performance. Porsche would have been projected to face lower costs in 2016 if they were not expected to pay CAFE fines in 2011.

As shown in the last row of Table III.D.6–4, the average cost of technology to meet the final 2016 standards for cars and trucks combined relative to the 2011 MY CAFE standards is $948 per vehicle. This is $103 lower than that projected in the NPRM, due primarily to lower technology cost projections for the final rule compared to the NPRM for certain technologies. (See Chapter 1 of the Joint TSD for a detailed description of how our technology costs for the final rule differ from those used in the NPRM). As was the case in the NPRM, Table III.D.6–4 shows that the average cost for cars would be slightly lower than that for trucks. Toyota and Honda show projected costs significantly below the average, while BMW, Porsche, Tata and Volkswagen show significantly higher costs. On average, the $948 per vehicle cost is significant, representing 3.4 percent of the total cost of a new vehicle. However, as discussed below, the fuel savings associated with the final standards exceed this cost significantly. In general, commenters supported EPA's cost projections, as discussed in Section II.

While the CO_2 emission compliance modeling using the OMEGA model focused on the final 2016 MY standards, the final standards for 2012–2015 are also feasible. As discussed above, manufacturers develop their future vehicle designs with several model years in view. Generally, the technology estimated above for 2016 MY vehicles represents the technology which would be added to those vehicles which are being redesigned in 2012–2015. The final CO_2 standards for 2012–2016 reduce CO_2 emissions at a fairly steady rate. Thus, manufacturers which redesign their vehicles at a fairly steady rate will automatically comply with the interim standard as they plan for compliance in 2016.

Manufacturers which redesign much fewer than 20% of their sales in the early years of the final program would face a more difficult challenge, as simply implementing the "2016 MY" technology as vehicles are redesigned may not enable compliance in the early years. However, even in this case, manufacturers would have several options to enable compliance. One, they could utilize the debit carry-forward provisions described above. This may be sufficient alone to enable compliance through the 2012–2016 MY time period, if their redesign schedule exceeds 20% per year prior to 2016. If not, at some point, the manufacturer might need to increase their use of technology beyond that projected above in order to generate the credits necessary to balance the accrued debits. For most manufacturers representing the vast majority of U.S. sales, this would simply mean extending the same technology to a greater percentage of sales. The added cost of this in the later years of the program would be balanced by lower costs in the earlier years. Two, the manufacture could take advantage of the many optional credit generation provisions contained in this final rule, including early-credit generation for model years 2009–2011, credits for advanced technology vehicles, and credits for the application of technology which result in off-cycle GHG reductions. Finally, the manufacturer could buy credits from another manufacturer. As indicated above, several manufacturers are projected to require less stringent technology than the average. These manufacturers would be in a position to provide credits at a reasonable technology cost. Thus, EPA believes the final standards for 2012–2016 would be feasible. Further discussion of the technical feasibility of the interim year standards, including for smaller volume manufacturers can be found in Section III.B, in the discussion on the Temporary Leadtime Allowance Alternative Standards.

7. What other fleet-wide CO_2 levels were considered?

Two alternative sets of CO_2 standards were considered. One set would reduce CO_2 emissions at a rate of 4 percent per year. The second set would reduce CO_2 emissions at a rate of 6 percent per year. The analysis of these standards followed the exact same process as described above for the final standards. The only difference was the level of CO_2 emission standards. The footprint-based standard coefficients of the car and truck curves for these two alternative control scenarios were discussed above. The resultant projected CO_2 standards in 2016 for each manufacturer under these two alternative scenarios and under the final rule are shown in Table III.D.7–1.

TABLE III.D.7–1—OVERALL AVERAGE CO_2 EMISSION STANDARDS BY MANUFACTURER IN 2016

	4% per year	Final Rule	6% per year
BMW	248	244	224
Chrysler	270	266	245
Daimler	260	256	236
Ford	261	257	237
General Motors	275	271	250
Honda	248	244	224

TABLE III.D.7–1—OVERALL AVERAGE CO_2 EMISSION STANDARDS BY MANUFACTURER IN 2016—Continued

	4% per year	Final Rule	6% per year
Hyundai	234	231	212
Kia	239	236	217
Mazda	232	228	210
Mitsubishi	244	239	219
Nissan	250	245	226
Porsche	237	233	213
Subaru	238	234	214
Suzuki	222	218	199
Tata	263	259	239
Toyota	249	245	225
Volkswagen	236	232	213
Overall	254	250	230

Tables III.D.7–2 and III.D.7–3 show the technology penetration levels for the 4 percent per year and 6 percent per year standards in 2016.

TABLE III.D.7–2—TECHNOLOGY PENETRATION—4% PER YEAR CO_2 STANDARDS IN 2016: CARS AND TRUCKS COMBINED

[In percent]

	GDI	OHC–DEAC	Turbo	Diesel	6 Speed auto trans	Dual clutch trans	Start-stop	Hybrid	Mass reduction (%)
BMW	80	21	61	6	13	63	65	14	5
Chrysler	67	13	17	0	26	52	54	0	6
Daimler*	76	30	53	5	12	72	67	14	5
Ford	77	18	16	0	25	58	59	0	5
General Motors	62	24	11	0	7	57	57	0	5
Honda	44	6	2	0	0	49	15	2	2
Hyundai	52	0	1	0	3	52	28	0	3
Kia	37	0	1	0	0	57	0	0	2
Mazda	79	0	14	1	17	66	60	0	5
Mitsubishi	85	0	31	0	16	72	72	0	6
Nissan	69	7	11	0	2	64	61	1	6
Porsche*	83	15	62	8	5	45	62	15	4
Subaru	72	0	9	0	0	70	37	0	3
Suzuki	70	0	0	0	3	67	67	0	3
Tata*	85	55	27	0	14	70	70	15	5
Toyota	15	7	0	0	13	30	7	12	1
Volkswagen*	82	18	71	11	10	68	60	15	4
Overall	56	13	14	1	11	53	41	4	4
Increase over 2011 CAFE	46	11	7	1	−5	46	38	2	4

*These manufacturers were unable to meet the final 2016 standards with the imposed caps on technology.

TABLE III.D.7–3—TECHNOLOGY PENETRATION—6% PER YEAR ALTERNATIVE STANDARDS IN 2016: CARS AND TRUCKS COMBINED

[In percent]

	GDI	OHC–DEAC	Turbo	Diesel	6 Speed auto trans	Dual clutch trans	Start-stop	Hybrid	Mass reduction (%)
BMW*	80	21	61	6	13	63	65	14	5
Chrysler	85	13	50	0	3	82	83	2	8
Daimler*	76	30	53	5	12	72	67	14	5
Ford*	85	13	57	0	4	74	75	10	7
General Motors	85	25	43	0	2	83	83	2	8
Honda	68	6	10	0	1	65	65	2	6
Hyundai	73	1	12	0	9	64	64	0	5
Kia	62	0	1	0	0	62	61	0	5
Mazda	85	0	19	1	4	80	82	0	7
Mitsubishi*	85	4	42	0	4	75	75	10	7
Nissan	85	8	38	0	0	78	81	4	8
Porsche*	83	15	62	8	5	45	62	15	4
Subaru	84	0	18	1	3	79	80	0	6
Suzuki	85	0	85	0	0	85	85	0	8
Tata*	85	55	27	0	14	70	70	15	5
Toyota	71	7	5	0	20	49	47	12	4

TABLE III.D.7–3—TECHNOLOGY PENETRATION—6% PER YEAR ALTERNATIVE STANDARDS IN 2016: CARS AND TRUCKS COMBINED—Continued

[In percent]

	GDI	OHC–DEAC	Turbo	Diesel	6 Speed auto trans	Dual clutch trans	Start-stop	Hybrid	Mass reduction (%)
Volkswagen*	82	18	71	11	10	68	60	15	4
Overall	79	12	33	1	7	69	69	6	6
Increase over 2011 CAFE	69	10	26	1	−9	62	66	4	6

*These manufacturers were unable to meet the final 2016 standards with the imposed caps on technology.

With respect to the 4 percent per year standards, the levels of requisite control technology are lower than those under the final standards, as would be expected. Industry-wide, the largest decreases were a 7 percent decrease in use of gasoline direct injection engines, a 4 percent decrease in the use of dual clutch transmissions, and a 2 percent decrease in the application of start-stop technology. On a manufacturer specific basis, the most significant decreases were a 10 percent or larger decrease in the use of stop-start technology for Honda, Kia, Mitsubishi and Suzuki and a 12 percent drop in turbocharger use for Mitsubishi. These are relatively small changes and are due to the fact that the 4 percent per year standards only require 4 g/mi CO_2 less control than the final standards in 2016. Porsche, Tata and Volkswagen continue to be unable to comply with the CO_2 standards in 2016, even under the 4 percent per year standard scenario. BMW just complied under this scenario, so its costs and technology penetrations are the same as under the final standards.

With respect to the 6 percent per year standards, the levels of requisite control technology increased substantially relative to those under the final standards, as again would be expected. Industry-wide, the largest increase was a 25 percent increase in the application of start-stop technology and 13–17 percent increases in the use of gasoline direct injection engines, turbocharging and dual clutch transmissions. On a manufacturer specific basis, the most significant increases were a 10 percent increase in hybrid penetration for Ford and Mitsubishi. These are more significant changes and are due to the fact that the 6 percent per year standards require 20 g/mi CO_2 more control than the final standards in 2016. Our projections for BMW, Porsche, Tata and Volkswagen continue to show they are unable to comply with the CO_2 standards in 2016, so our projections for these manufacturers do not differ relative to the final standards, though the amount of short-fall for each firm increases significantly, by an additional 20 g/mi CO_2 per firm. However, Ford and Mitsubishi join this list as can be seen from Figure III.D.6–2. The CO_2 emissions from Ford's cars are very similar to those of the industry when adjusted for technology, weight and performance. However, their trucks emit more than 25% more CO_2 per mile than the industry average. It is possible that addressing this issue would resolve their difficulty in complying with the 6 percent per year scenario. Both Mitsubishi's cars and truck emit roughly 10% more than the industry average vehicles after adjusting for technology, weight and performance. Again, addressing this issue could resolve their difficulty in complying with the 6 percent per year scenario. Five manufacturers are projected to need to increase their use of start-stop technology by at least 30 percent.

Table III.D.7–4 shows the projected cost of the two alternative sets of standards.

TABLE III.D.7–4—TECHNOLOGY COST PER VEHICLE IN 2016—ALTERNATIVE STANDARDS ($2007)

	4 Percent per year standards, relative to 2011 MY CAFE standards			6 Percent per year standards, relative to 2011 MY CAFE standards		
	Cars	Trucks	All	Cars	Trucks	All
BMW	$1,558	$1,195	$1,453	$1,558	$1,195	$1,453
Chrysler	1,111	1,236	1,178	1,447	2,156	1,827
Daimler	1,536	931	1,343	1,536	931	1,343
Ford	1,013	1,358	1,140	1,839	2,090	1,932
General Motors	834	1,501	1,148	1,728	2,030	1,870
Honda	598	411	529	894	891	893
Hyundai	769	202	684	1,052	1,251	1,082
Kia	588	238	527	1,132	247	979
Mazda	766	537	733	1,093	1,083	1,092
Mitsubishi	733	1,164	906	1,224	1,840	1,471
Nissan	572	1,119	729	1,151	1,693	1,306
Porsche	1,506	759	1,257	1,506	759	1,257
Subaru	962	616	836	1,173	1,316	1,225
Suzuki	1,015	179	879	1,426	1,352	1,414
Tata	1,181	680	984	1,181	680	984
Toyota	323	560	400	747	906	799
Volkswagen	1,848	972	1,694	1,848	972	1,694
Overall	811	1,020	883	1,296	1,538	1,379

As can be seen, the average cost of the 4 percent per year standards is only $65 per vehicle less than that for the final standards. This incremental cost is very similar to that projected in the NPRM. In contrast, the average cost of the 6 percent per year standards is over $430 per vehicle more than that for the final standards, which is $80 less than that projected in the NPRM (again due to lower technology costs). Compliance costs are entering the region of non-linearity. The $65 cost savings of the 4 percent per year standards relative to the final rule represents $19 per g/mi CO_2 increase. The $430 cost increase of the 6 percent per year standards relative to the final rule represents a 25 per g/mi CO_2 increase. More importantly, two additional manufacturers, Ford and Mitsubishi, are projected to be unable to comply with the 6% per year standards. In addition, under the 6% per year standards, four manufacturers (Chrysler, General Motors, Suzuki and Nissan) are within 2 g/mi CO_2 of the minimum achievable levels projected by EPA's OMEGA model analysis for 2016.

EPA does not believe the 4% per year alternative is an appropriate standard for the MY 2012–2016 time frame. As discussed above, the 250 g/mi final rule is technologically feasible in this time frame at reasonable costs, and provides higher GHG emission reductions at a modest cost increase over the 4% per year alternative (less than $100 per vehicle). In addition, the 4% per year alternative does not result in a harmonized National Program for the country. Based on California's letter of May 18, 2009, the emission standards under this alternative would not result in the State of California revising its regulations such that compliance with EPA's GHG standards would be deemed to be in compliance with California's GHG standards for these model years. Thus, the consequence of promulgating a 4% per year standard would be to require manufacturers to produce two vehicle fleets: A fleet meeting the 4% per year Federal standard, and a separate fleet meeting the more stringent California standard for sale in California and the section 177 states. This further increases the costs of the 4% per year standard and could lead to additional difficulties for the already stressed automotive industry.

EPA also does not believe the 6% per year alternative is an appropriate standard for the MY 2012–2016 time frame. As shown in Tables III.D.7–3 and III.D.7–4, the 6% per year alternative represents a significant increase in both the technology required and the overall costs compared to the final standards. In absolute percent increases in the technology penetration, compared to the final standards the 6% per year alternative requires for the industry as a whole: An 18% increase in GDI fuel systems, an 11% increase in turbo-downsize systems, a 6% increase in dual-clutch automated manual transmissions (DCT), and a 9% increase in start-stop systems. For a number of manufacturers the expected increase in technology is greater: For GM, a 15% increase in both DCTs and start-stop systems, for Nissan a 9% increase in full hybrid systems, for Ford an 11% increase in full hybrid systems, for Chrysler a 34% increase in both DCT and start-stop systems and for Hyundai a 23% increase in the overall penetration of DCT and start-stop systems. For the industry as a whole, the per-vehicle cost increase for the 6% per year alternative is nearly $500. On average this is a 50% increase in costs compared to the final standards. At the same time, CO_2 emissions would be reduced by about 8%, compared to the 250 g/mi target level.

As noted above, EPA's OMEGA model predicts that for model year 2016, Ford, Mitsubishi, Mercedes, BMW, Volkswagen, Jaguar-Land Rover, and Porsche do not meet their target under the 6 percent per year scenario. In addition, Chrysler, General Motors, Suzuki and Nissan all are within 2 grams/mi CO_2 of maximizing the applicable technology allowed under EPA's OMEGA model—that is, these companies have almost no head-room for compliance. In total, these 11 companies represent more than 58 percent of total 2016 projected U.S. light-duty vehicle sales. This provides a strong indication that the 6 percent per year standard is much more stringent than the final standards, and presents a significant risk of non-compliance for many firms, including four of the seven largest firms by U.S. sales.

These technology and cost increases are significant, given the amount of lead-time between now and model years 2012–2016. In order to achieve the levels of technology penetration for the final standards, the industry needs to invest significant capital and product development resources right away, in particular for the 2012 and 2013 model year, which is only 2–3 years from now. For the 2014–2016 time frame, significant product development and capital investments will need to occur over the next 2–3 years in order to be ready for launching these new products for those model years. Thus a major part of the required capital and resource investment will need to occur now and over the next few years, under the final standards. EPA believes that the final rule (a target of 250 gram/mile in 2016) already requires significant investment and product development costs for the industry, focused on the next few years.

It is important to note, and as discussed later in this preamble, as well as in the Joint Technical Support Document and the EPA Regulatory Impact Analysis document, the average model year 2016 per-vehicle cost increase of nearly $500 includes an estimate of both the increase in capital investments by the auto companies and the suppliers as well as the increase in product development costs. These costs can be significant, especially as they must occur over the next 2–3 years. Both the domestic and transplant auto firms, as well as the domestic and world-wide automotive supplier base, is experiencing one of the most difficult markets in the U.S. and internationally that has been seen in the past 30 years. One major impact of the global downturn in the automotive industry and certainly in the U.S. is the significant reduction in product development engineers and staffs, as well as a tightening of the credit markets which allow auto firms and suppliers to make the near-term capital investments necessary to bring new technology into production. The 6% per year alternative standard would impose significantly increased pressure on capital and other resources, indicating it is too stringent for this time frame, given both the relatively limited amount of lead-time between now and model years 2012–2016, the need for much of these resources over the next few years, as well the current financial and related circumstances of the automotive industry. EPA is not concluding that the 6% per year alternative standards are technologically infeasible, but EPA believes such standards for this time frame would be overly stringent given the significant strain it would place on the resources of the industry under current conditions. EPA believes this degree of stringency is not warranted at this time. Therefore EPA does not believe the 6% per year alternative would be an appropriate balance of various relevant factors for model years 2012–1016.

Jaguar/Land Rover, in their comments, agreed that the more stringent standards would not be economically practicable, and several automotive firms indicated that the proposed standards, while feasible, would be overly challenging.[261] On the other hand, the Center for Biological Diversity (henceforth referred to here as CBD), strongly urged EPA to adopt more

[261] *See* comments from Toyota, General Motors.

stringent standards. CBD gives examples of higher standards in other nations to support their contention that the standards should be more stringent. CBD also claims that the agencies are "setting standards that deliberately delay implementation of technology that is available now" by setting lead time for the rule greater than 18 months. CBD also accuses the agencies of arbitrarily "adhering to strict five-year manufacturer 'redesign cycles.' " CBD notes that the agencies have stated that all of the "technologies are already available today," and EPA and NHTSA's assessment is that manufacturers "would be able to meet the proposed standards through more widespread use of these technologies across the fleet." Based on the agencies' previous statements, CBD concludes that the fleet can meet the 250 g/mi target in 2010. EPA believes that in all cases, CBD's analysis for feasibility and necessary lead time is flawed.

Other countries' absolute fleetwide standards are not a reliable or directly relevant comparison. The fleet make-up in other nations is quite different than that of the United States. CBD primarily cites the European Union and Japan as examples. Both of these regions have a large fraction of small vehicles (with lower average weight, and footprint size) when compared to vehicles in the U.S. Also the U.S. has a much greater fraction of light-duty trucks. In particular in Europe, there is a much higher fraction of diesel vehicles in the existing fleet, which leads to lower CO_2 emissions in the baseline fleet as compared to the U.S. This is in large part due to the significantly different fuel prices seen in Europe as compared to the U.S. The European fleet also has a much higher penetration of manual transmission than the U.S., which also results in lower CO_2 emissions. Moreover, these countries use different test cycles, which bias CO_2 emissions relative to the EPA 2 cycle test cycles. When looked at from a technology-basis, with the exception of the existing large penetration of diesels and manual transmissions in the European fleet—there is no "magic" in the European and Japanese markets which leads to lower fleet-wide CO_2 emissions. In fact, from a technology perspective, the standards contained in this final rule are premised to a large degree on the same technologies which the European and Japanese governments have relied upon to establish their CO_2 and fuel economy limits for this same time frame and for the fleet mixes in their countries. That is for example, large increases in the use of 6+ speed transmissions, automated manual transmissions, gasoline direct injection, engine downsizing and turbocharging, and start-stop systems. CBD has not provided any detailed analysis of what technologies are available in Europe which EPA is not considering—and there are no such "magic" technologies. The vast majority of the differences between the current and future CO_2 performance of the Japanese and European light-duty vehicle fleets are due to differences in the size and current composition of the vehicle fleets in those two regions—not because EPA has ignored technologies which are available for application to the U.S. market in the 2012–2016 time frame.

If CBD is advocating a radical reshifting of domestic fleet composition, (such as requiring U.S. consumers to purchase much smaller vehicles and requiring U.S. consumers to purchase vehicles with manual transmissions), it is sufficient to say that standards forcing such a result are not compelled under section 202(a), where reasonable preservation of consumer choice remains a pertinent factor for EPA to consider in balancing the relevant statutory factors. *See* also *International Harvester* (478 F. 2d at 640 (Administrator required to consider issues of basic demand for new passenger vehicles in making technical feasibility and lead time determinations). Thus EPA believes that the standard is at the proper level of stringency for the projected domestic fleet in the 2012–2016 model years taking into account the wide variety of consumer choice that is reflected in this projection of the domestic fleet.

As mentioned earlier (in III.D.4), CBD's comments on available lead time also are inaccurate. Under section 202(a), standards are to take effect only "after providing such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." Having sufficient lead time includes among other things, the time required to certify vehicles. For example, model year 2012 vehicles will be tested and certified for the EPA within a short time after the rule is finalized, and this can start as early as calendar year 2010, for MY 2012 vehicles that can be produced in calendar year 2011. In addition, these 2012 MY vehicles have already been fully designed, with prototypes built several years earlier. It takes several years to redesign a vehicle, and several more to design an entirely new vehicle not based on an existing platform. Thus, redesign cycles are an inextricable component of adequate lead time under the Act. A full line manufacturer only has limited staffing and financial resources to redesign vehicles, therefore the redesigns are staggered throughout a multi-year period to optimize human capital.[262] Furthermore, redesigns require a significant outlay of capital from the manufacturer. This includes research and development, material and equipment purchasing, overhead, benefits, etc. These costs are significant and are included in the cost estimates for the technologies in this rule. Because of the manpower and financial capital constraints, it would only be possible to redesign all the vehicles across a manufacturer's line simultaneously if the manufacturer has access to tremendous amounts of ready capital and an unrealistically large engineering staff. However no major automotive firm in the world has the capability to undertake such an effort, and it is unlikely that the supplier basis could support such an effort if it was required by all major automotive firms. Even if this unlikely condition were possible, the large engineering staff would then have to be downsized or work on the next redesign of the entire line another few years later. This would have the effect of increasing the cost of the vehicles.

There is much evidence to indicate that the average redesign cycle in the industry is about 5 years.[263] There are some manufacturers who have longer cycles (such as smaller manufacturers described above), and there are others who have shorter cycles for some of their products. EPA believes that there are no full line manufacturers who can maintain significant redesigns of vehicles (with relative large sales) in 1 or 2 years, and CBD has provided no evidence indicating this is technically feasible. A complete redesign of the entire U.S. light-duty fleet by model year 2012 is clearly infeasible, and EPA believes that several model years additional lead time is necessary in order for the manufacturers to meet the standards. The graduated increase in the stringency of the standards from MYs 2012 through 2016 accounts for this needed lead time.

There are other reasons that the fleet cannot meet the 250g/mi CO_2 target in 2012 (much less in 2010). The commenter reasons that if technology is in use now—even if limited use—it can

[262] *See* for example "How Automakers Plan Their Products", Center for Automotive Research, July 2007.

[263] *See* for example "Car Wars 2010–2013, The U.S. automotive product pipeline", John Murphy, Research Analyst, Bank of America/Merrill Lynch research paper, July 15, 2009.

be utilized across the fleet nearly immediately. This is not the case. An immediate demand from original equipment manufacturers (OEMs) to supply 100% of the fleet with these technologies in 2012 would cause their suppliers to encounter the same lead time issues discussed above. Suppliers have limited capacity to change their current production over to the newer technologies quickly. Part of this reason is due to engineering, cost and manpower constraints as described above, but additionally, the suppliers face an issue of "stranded capital". This is when the basic tooling and machines that produce the technologies in question need to be replaced. If these tools and machines are replaced before they near the end of their useful life, the suppliers are left with "stranded capital" *i.e.,* a significant financial loss because they are replacing perfectly good equipment with newer equipment. This situation can also occur for the OEMs. In an extreme example, a plant that switches over from building port fuel injected gasoline engines to building batteries and motors, will require a nearly complete retooling of the plant. In a less extreme example, a plant that builds that same engine and switches over to suddenly building smaller turbocharged direct injection engines with starter alternators might have significant retooling costs as well as stranded capital. Finally, it takes a significant amount of time to retool a factory and smoothly validate the tooling and processes to mass produce a replacement technology. This is why most manufacturers do this process over time, replacing equipment as they wear out. CBD has not accounted for any of these considerations. EPA believes that attempting to force the types of massive technology penetration needed in the early model years of the standard to achieve the 2016 standards would be physically and cost prohibitive.

A number of automotive firms and associations (including the Alliance of Automobile Manufacturers, Mercedes, and Toyota) commented that the standards during the early model years, in particular MY 2012, are too stringent, and that a more linear phase-in of the standards beginning with the MY 2011 CAFE standards and ending with the 250 gram/mi proposed EPA projected fleet-wide level in MY 2016 is more appropriate. In the May 19, 2009 Joint Notice of Intent, EPA and NHTSA stated that the standards would have "* * * *a generally linear phase-in from MY 2012 through to model year 2016*." (74 FR 24008). The Alliance of Automobile Manufacturers stated that the phase-in of the standards is not linear, and they proposed a methodology for the CAFE standards to be a linear progression from MY 2011 to MY 2016. The California Air Resources Board commented that the proposed level of stringency, including the EPA proposed standards for MY 2012–2015, were appropriate and urged EPA to finalize the standards as proposed and not reduce the stringency in the early model years as this would result in a large loss of the GHG reductions from the National Program. EPA agrees with the comments from CARB, and we have not reduced the stringency of the program for the early model years. While some automotive firms indicated a desire to see a linear transition from the Model Year 2011 CAFE standards, our technology and cost analysis indicates that our standards are appropriate for these interim years. As shown in Section III.H of this final rule, the final standards result in significant GHG reductions, including the reductions from MY 2012–2015, and at reasonable costs, providing appropriate lead time. The automotive industry commenters did not point to a specific technical issue with the standards, but rather their desire for a linear phase-in from the existing 2011 CAFE standards.

In summary, the EPA believes that the MY 2012–2016 standards finalized are feasible and that there are compelling reasons not to adopt more stringent standards, based on a reasonable weighing of the statutory factors, including available technology, its cost, and the lead time necessary to permit its development and application. For further discussion of these issues, see Chapter 4 of the RIA as well as the response to comments.

E. Certification, Compliance, and Enforcement

1. Compliance Program Overview

This section describes EPA's comprehensive program to ensure compliance with emission standards for carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4), as described in Section III.B. An effective compliance program is essential to achieving the environmental and public health benefits promised by these mobile source GHG standards. EPA's GHG compliance program is designed around two overarching priorities: (1) To address Clean Air Act (CAA) requirements and policy objectives; and (2) to streamline the compliance process for both manufacturers and EPA by building on existing practice wherever possible, and by structuring the program such that manufacturers can use a single data set to satisfy both the new GHG and Corporate Average Fuel Economy (CAFE) testing and reporting requirements. The EPA and NHTSA programs recognize, and replicate as closely as possible, the compliance protocols associated with the existing CAA Tier 2 vehicle emission standards, and with CAFE standards. The certification, testing, reporting, and associated compliance activities closely track current practices and are thus familiar to manufacturers. EPA already oversees testing, collects and processes test data, and performs calculations to determine compliance with both CAFE and CAA standards. Under this coordinated approach, the compliance mechanisms for both programs are consistent and non-duplicative.

Vehicle emission standards established under the CAA apply throughout a vehicle's full useful life. Today's rule establishes fleet average greenhouse gas standards where compliance with the fleet average is determined based on the testing performed at time of production, as with the current CAFE fleet average. EPA is also establishing in-use standards that apply throughout a vehicle's useful life, with the in-use standard determined by adding an adjustment factor to the emission results used to calculate the fleet average. EPA's program will thus not only assess compliance with the fleet average standards described in Section III.B, but will also assess compliance with the in-use standards. As it does now, EPA will use a variety of compliance mechanisms to conduct these assessments, including pre-production certification and post-production, in-use monitoring once vehicles enter customer service. Specifically, EPA is establishing a compliance program for the fleet average that utilizes CAFE program protocols with respect to testing, a certification procedure that operates in conjunction with the existing CAA Tier 2 certification procedures, and an assessment of compliance with the in-use standards concurrent with existing EPA and manufacturer Tier 2 emission compliance testing programs. Under this compliance program manufacturers will also be afforded numerous flexibilities to help achieve compliance, both stemming from the program design itself in the form of a manufacturer-specific CO_2 fleet average standard, as well as in various credit banking and trading opportunities, as described in Section III.C. EPA received broad comment from regulated industry and from the public interest community supporting this overall compliance program structure.

The compliance program is outlined in further detail below.

2. Compliance With Fleet-Average CO_2 Standards

Fleet average emission levels can only be determined when a complete fleet profile becomes available at the close of the model year. Therefore, EPA will determine compliance with the fleet average CO_2 standards when the model year closes out, as is currently the protocol under EPA's Tier 2 program as well as under the current CAFE program. The compliance determination will be based on actual production figures for each model and on model-level emissions data collected through testing over the course of the model year. Manufacturers will submit this information to EPA in an end-of-year report which is discussed in detail in Section III.E.5.h below.

Manufacturers currently conduct their CAFE testing over an entire model year to maximize efficient use of testing and engineering resources. Manufacturers submit their CAFE test results to EPA and EPA conducts confirmatory fuel economy testing at its laboratory on a subset of these vehicles under EPA's Part 600 regulations. EPA's proposal to extend this approach to the GHG program received overwhelming support from vehicle manufacturers. EPA is finalizing GHG requirements under which manufacturers will continue to perform the model-level testing currently required for CAFE fuel economy performance and measure and report the CO_2 values for all tests conducted.[264] Manufacturers will submit one data set in satisfaction of both CAFE and GHG requirements such that EPA's program will not impose additional timing or testing requirements on manufacturers beyond that required by the CAFE program. For example, manufacturers currently submit fuel economy test results at the subconfiguration and configuration levels to satisfy CAFE requirements. Now manufacturers will also submit CO_2 values for the same vehicles. Section III.E.3 discusses how this will be implemented in the certification process.

a. Compliance Determinations

As described in Section III.B above, the fleet average standards will be determined on a manufacturer by manufacturer basis, separately for cars and trucks, using the footprint attribute curves. EPA will calculate the fleet average emission level using actual production figures and, for each model type, CO_2 emission test values generated at the time of a manufacturer's CAFE testing. EPA will then compare the actual fleet average to the manufacturer's footprint standard to determine compliance, taking into consideration use of averaging and credits.

Final determination of compliance with fleet average CO_2 standards may not occur until several years after the close of the model year due to the flexibilities of carry-forward and carry-back credits and the remediation of deficits (see Section III.C). A failure to meet the fleet average standard after credit opportunities have been exhausted could ultimately result in penalties and injunctive orders under the CAA as described in Section III.E.6 below.

EPA received considerable comment about the need for transparency in its implementation of the greenhouse gas program and specifically about the need for public access to information about Agency compliance determinations. Many comments emphasized the importance of making greenhouse gas compliance information publicly available to ensure such transparency. EPA also received comment from industry about the need to protect confidential business information. Both transparency and protection of confidential information are longstanding EPA practices, and both will remain priorities in EPA's implementation of the greenhouse gas program. EPA periodically provides mobile source emissions and fuel economy information to the public, for example through the annual Compliance Report[265] and Fuel Economy Trends Report.[266] As proposed, EPA plans to expand these reports to include GHG performance and compliance trends information, such as annual status of credit balances or debits, use of various credit programs, attained fleet average emission levels compared with standards, and final compliance status for a model year after credit reconciliation occurs. EPA intends to regularly disseminate non-confidential, model-level and fleet information for each manufacturer after the close of the model year. EPA will reassess data release needs and opportunities once the program is underway.

Beyond transparency in reporting emissions data and compliance status, EPA is concerned, as a matter of principle moving into a new era of greenhouse gas control, that greenhouse gas reductions reported for purposes of compliance with the standards adopted in this rule will be reflected in the real world and not just as calculated fleet average emission levels or measured certification test results. Therefore EPA will pay close attention to technical details behind manufacturer reports. For example, EPA intends to look closely at each manufacturer's certification testing procedures, GHG calculation procedures, and laboratory correlation with EPA's laboratory, and to carefully review manufacturer pre-production, production, and in-use testing programs. In addition, EPA plans to monitor GHG performance through its own in-use surveillance program in the coming years. This will ensure that the environmental benefits of the rule are achieved as well as ensure a level playing field for all.

b. Required Minimum Testing for Fleet Average CO_2

EPA received no public comment on provisions that would extend current CAFE testing requirements and flexibilities to the GHG program, and is finalizing as proposed minimum testing requirements for fleet average CO_2 determination. EPA will require and use the same test data to determine a manufacturer's compliance with both the CAFE standard and the fleet average CO_2 emissions standard. CAFE requires manufacturers to submit test data representing at least 90% of the manufacturer's model year production, by configuration.[267] The CAFE testing covers the vast majority of models in a manufacturer's fleet. Manufacturers industry-wide currently test more than 1,000 vehicles each year to meet this requirement. EPA believes this minimum testing requirement is necessary and applicable for calculating accurate CO_2 fleet average emissions. Manufacturers may test additional

[264] As discussed in Section III.B.1, vehicle and fleet average compliance will be based on a combination of CO_2, HC, and CO emissions. This is consistent with the carbon balance methodology used to determine fuel consumption for the labeling and CAFE programs. The final regulations account for these total carbon emissions appropriately and refer to the sum of these emissions as the "carbon-related exhaust emissions" (CREE). Although regulatory text uses the more accurate term "CREE" to represent the CO_2-equivalent sum of carbon emissions, the term CO_2 is used as shorthand throughout Section III.E as a more familiar term for most readers.

[265] 2007 Progress Report Vehicle and Engine Compliance Activities; EPA–420–R–08–011; October 2008. This document is available electronically at *http://www.epa.gov/otaq/about/420r08011.pdf.*

[266] Light-Duty Automotive Technology and Fuel-Economy Trends: 1975 Through 2008; EPA–420–S–08–003; September 2008. This document is available electronically at *http://www.epa.gov/otaq/fetrends.htm.*

[267] *See* 40 CFR 600.010–08(d).

vehicles, at their option. As described above, EPA will use the emissions results from the model-level testing to calculate a manufacturer's fleet average CO_2 emissions and to determine compliance with the CO_2 fleet average standard.

EPA will continue to allow certain testing flexibilities that exist under the CAFE program. EPA has always permitted manufacturers some ability to reduce their test burden in tradeoff for lower fuel economy numbers. Specifically the practice of "data substitution" enables manufacturers to apply fuel economy test values from a "worst case" configuration to other configurations in lieu of testing them. The substituted values may only be applied to configurations that would be expected to have better fuel economy and for which no actual test data exist. EPA will continue to accept use of substituted data in the GHG program, but only when the substituted data are also used for CAFE purposes.

EPA regulations for CAFE testing permit the use of analytically derived fuel economy data in lieu of conducting actual fuel economy tests in certain situations.[268] Analytically derived data are generated mathematically using expressions determined by EPA and are allowed on a limited basis when a manufacturer has not tested a specific vehicle configuration. This has been done as a way to reduce some of the testing burden on manufacturers without sacrificing accuracy in fuel economy measurement. EPA has issued guidance that provides details on analytically derived data and that specifies the conditions when analytically derived fuel economy data may be used. EPA will apply the same guidance to the GHG program and will allow any analytically derived data used for CAFE to also satisfy the GHG data reporting requirements. EPA will revise the terms in the current equations for analytically derived fuel economy to specify them in terms of CO_2. Analytically derived CO_2 data will not be permitted for the Emission Data Vehicle representing a test group for pre-production certification, only for the determination of the model level test results used to determine actual fleet-average CO_2 levels.

EPA is retaining the definitions needed to determine CO_2 levels of each model type (such as "subconfiguration," "configuration," "base level," etc.) as they are currently defined in EPA's fuel economy regulations.

[268] 40 CFR 600.006–08(e).

3. Vehicle Certification

CAA section 203(a)(1) prohibits manufacturers from introducing a new motor vehicle into commerce unless the vehicle is covered by an EPA-issued certificate of conformity. Section 206(a)(1) of the CAA describes the requirements for EPA issuance of a certificate of conformity, based on a demonstration of compliance with the emission standards established by EPA under section 202 of the Act. The certification demonstration requires emission testing, and must be done for each model year.[269]

Under Tier 2 and other EPA emission standard programs, vehicle manufacturers certify a group of vehicles called a test group. A test group typically includes multiple vehicle car lines and model types that share critical emissions-related features.[270] The manufacturer generally selects and tests one vehicle to represent the entire test group for certification purposes. The test vehicle is the one expected to be the worst case for the emission standard at issue. Emission results from the test vehicle are used to assign the test group to one of several specified bins of emissions levels, identified in the Tier 2 rule, and this bin level becomes the in-use emissions standard for that test group.[271]

Since compliance with the Tier 2 fleet average depends on actual test group sales volumes and bin levels, it is not possible to determine compliance with the fleet average at the time the manufacturer applies for and receives a certificate of conformity for a test group. Instead, EPA requires the manufacturer to make a good faith demonstration in the certification application that vehicles in the test group will both (1) comply throughout their useful life with the emissions bin assigned, and (2) contribute to fleet-wide compliance with the Tier 2 average when the year is over. EPA issues a certificate for the vehicles included in the test group based on this demonstration, and includes a condition in the certificate that if the manufacturer does not comply with the fleet average, then production vehicles from that test group will be treated as not covered by the certificate to the extent needed to bring the manufacturer's fleet average into compliance with Tier 2.

The certification process often occurs several months prior to production and manufacturer testing may occur months before the certificate is issued. The certification process for the Tier 2 program is an efficient way for manufacturers to conduct the needed testing well in advance of certification, and to receive the needed certificates in a time frame which allows for the orderly production of vehicles. The use of a condition on the certificate has been an effective way to ensure compliance with the Tier 2 fleet average.

EPA will similarly condition each certificate of conformity for the GHG program upon a manufacturer's demonstration of compliance with the manufacturer's fleet-wide average CO_2 standard. The following discussion explains how EPA will integrate the new GHG vehicle certification program into the existing certification program.

a. Compliance Plans

In an effort to expedite the Tier 2 program certification process and facilitate early resolution of any compliance related concerns, EPA conducts annual reviews of each manufacturer's certification, in-use compliance and fuel economy plans for upcoming model year vehicles. EPA meets with each manufacturer individually, typically before the manufacturer begins to submit applications for certification for the new model year. Discussion topics include compliance plans for the upcoming model year, any new product offerings/new technologies, certification and/or testing issues, phase-in and/or ABT plans, and a projection of potential EPA confirmatory test vehicles. EPA has been conducting these compliance preview meetings for more than 10 years and has found them to be very useful for both EPA and manufacturers. Besides helping to expedite the certification process, certification preview meetings provide an opportunity to resolve potential issues before the process begins. The meetings give EPA an early opportunity to assess a manufacturer's compliance strategy, which in turn enables EPA to address any potential concerns before plans are finalized. The early interaction reduces the likelihood of unforeseen issues occurring during the actual certification of a test group which can result in the delay or even termination of the certification process.

For the reasons discussed above, along with additional factors, EPA believes it is appropriate for manufacturers to include their GHG compliance plan information as part of

[269] CAA section 206(a)(1).

[270] The specific test group criteria are described in 40 CFR 86.1827–01, car lines and model types have the meaning given in 40 CFR 86.1803–01.

[271] Initially in-use standards were different from the bin level determined at certification as the useful life level. The current in-use standards, however, are the same as the bin levels. In all cases, the bin level, reflecting useful life levels, has been used for determining compliance with the fleet average.

the new model year compliance preview process. This requirement is both consistent with existing practice under Tier 2 and very similar to the pre-model year report required under existing and new CAFE regulation. Furthermore, in light of the production weighted fleet average program design in which the final compliance determination cannot be made until after the end of the model year, EPA believes it is especially important for manufacturers to demonstrate that they have a credible compliance plan prior to the beginning of certification.

Several commenters raised concerns about EPA's proposal for requiring manufacturers to submit GHG compliance plans. AIAM stated that EPA did not identify a clear purpose for the review of the plans, criteria for evaluating the plans, or consequences if EPA found the plans to be unacceptable. AIAM also expressed concern over the appropriateness of requiring manufacturers to prepare regulatory compliance plans in advance, since vicissitudes of the market and other factors beyond a manufacturer's direct control may change over the course of the year and affect the model year outcome. Finally, AIAM commented that EPA should not attempt to take any enforcement action based on an asserted inadequacy of a plan. The comments stated that compliance should be determined only after the end of a model year and the subsequent credit earning period. The Alliance commented that there was an inconsistency between the proposed preamble language and the regulatory language in 600.514–12(a)(2)(i). The preamble language indicated that the compliance report should be submitted prior to the beginning of the model year and prior to the certification of any test group, while the regulatory language stated that the pre-model year report must be submitted during the month of December. The Alliance pointed out that if EPA wanted GHG compliance plan information before the certification of any test groups, the regulatory language would need to be corrected.

EPA understands that a manufacturer's plan may change over the course of a model year and that compliance information manufacturers present prior to the beginning of a new model year may not represent the final compliance outcome. Rather, EPA views the compliance plan as a manufacturer's good-faith projection of strategy for achieving compliance with the greenhouse gas standard. It is not EPA's intent to base compliance action solely on differences between projections in the compliance plan and end of year results. EPA understands that compliance with the GHG program will be determined at the end of the model year after all appropriate credits have been taken into consideration.

As stated earlier, a requirement to include GHG compliance information in the new model year compliance preview meetings is consistent with long standing EPA policy. The information will provide EPA with an early overview of the manufacturer's GHG compliance plan and allow EPA to make an early assessment as to possible issues, questions, or concerns with the program in order to expedite the certification process and help manufacturers better understand overall compliance provisions of the GHG program. Therefore, EPA is finalizing revisions to 40 CFR 600.514–12 which will require manufacturers to submit a compliance plan to EPA prior to the beginning of the model year and prior to the certification of any test group. The compliance plan must, at a minimum, include a manufacturer's projected footprint profile, projected total and model-level production volumes, projected fleet average and model-level CO_2 emission values, projected fleet average CO_2 standards and projected fleet average CO_2 credit status. In addition, EPA will expect the compliance plan to explain the various credit, transfer and trading options that will be used to comply with the standard, including the amount of credit the manufacturer intends to generate for air conditioning leakage, air conditioning efficiency, off-cycle technology, and various early credit programs. The compliance plan should also indicate how and when any deficits will be paid off through accrual of future credits.

EPA has corrected the inconsistency between the proposed preamble and regulatory language with respect to when the compliance report must be submitted and what level of information detail it must contain. EPA is finalizing revisions to 40 CFR 600.514–12 which require the compliance plan to be submitted to EPA prior to the beginning of the model year and prior to the certification of any test group. Today's action will also finalize simplified reporting requirements as discussed above.

b. Certification Test Groups and Test Vehicle Selection

Manufacturers currently divide their fleet into "test groups" for certification purposes. The test group is EPA's unit of certification; one certificate is issued per test group. These groupings cover vehicles with similar emission control system designs expected to have similar emissions performance.[272] The factors considered for determining test groups include combustion cycle, engine type, engine displacement, number of cylinders and cylinder arrangement, fuel type, fuel metering system, catalyst construction and precious metal composition, among others. Vehicles having these features in common are generally placed in the same test group.[273] Cars and trucks may be included in the same test group as long as they have similar emissions performance (manufacturers frequently produce cars and trucks that have identical engine designs and emission controls).

EPA recognizes that the Tier 2 test group criteria do not necessarily relate to CO_2 emission levels. For instance, while some of the criteria, such as combustion cycle, engine type and displacement, and fuel metering, may have a relationship to CO_2 emissions, others, such as those pertaining to the catalyst, may not. In fact, there are many vehicle design factors that affect CO_2 generation and emissions but are not included in EPA's test group criteria.[274] Most important among these may be vehicle weight, horsepower, aerodynamics, vehicle size, and performance features.

As described in the proposal, EPA considered but did not propose a requirement for separate CO_2 test groups established around criteria more directly related to CO_2 emissions. Although CO_2-specific test groups might more consistently predict CO_2 emissions of all vehicles in the test group, the addition of a CO_2 test group requirement would greatly increase the pre-production certification burden for both manufacturers and EPA. For example, a current Tier 2 test group would need to be split into two groups if automatic and manual transmissions models had been included in the same group. Two- and four-wheel drive vehicles in a current test group would similarly require separation, as would weight differences among vehicles. This would at least triple the number of test groups. EPA believes that the added burden of creating separate CO_2 test groups is not warranted or necessary to maintain an appropriately rigorous certification

[272] 40 CFR 86.1827–01.

[273] EPA provides for other groupings in certain circumstances, and can establish its own test groups in cases where the criteria do not apply. 40 CFR 86.1827–01(b), (c) and (d).

[274] EPA noted this potential lack of connection between fuel economy testing and testing for emissions standard purposes when it first adopted fuel economy test procedures. *See* 41 FR at 38677 (Sept. 10, 1976).

program because the test group data are later replaced by model specific data which are used as the basis for determining compliance with a manufacturer's fleet average standard.

For these reasons, EPA will retain the current Tier 2 test group structure for cars and light trucks in the certification requirements for CO_2. EPA believes that the current test group concept is also appropriate for N_20 and CH_4 because the technologies that are employed to control N_2O and CH_4 emissions will generally be the same as those used to control the criteria pollutants. Vehicle manufacturers agreed with this assessment and universally supported the use of current Tier 2 test groups in lieu of developing separate CO_2 test groups.

At the time of certification, manufacturers may use the CO_2 emission level from the Tier 2 Emission Data Vehicle as a surrogate to represent all of the models in the test group. However, following certification further testing will generally be required for compliance with the fleet average CO_2 standard as described below. EPA's issuance of a certificate will be conditioned upon the manufacturer's subsequent model level testing and attainment of the actual fleet average. Further discussion of these requirements is presented in Section III.E.6.

As just discussed, the "worst case" Emissions Data Vehicle selected to represent a test group under Tier 2 (40 CFR 86.1828–01) may not have the highest levels of CO_2 in that group. For instance, there may be a heavier, more powerful configuration that emits higher CO_2, but may, due to the way the catalytic converter has been matched to the engine, actually have lower NO_X, CO, PM or HC.

Therefore, in lieu of a separate CO_2 specific test group, EPA considered requiring manufacturers to select a CO_2 test vehicle from within the Tier 2 test group that would be expected, based on good engineering judgment, to have the highest CO_2 emissions within that test group. The CO_2 emissions results from this vehicle would be used to establish an in-use CO_2 emission standard for the test group. The requirement for a separate, worst case CO_2 vehicle would provide EPA with some assurance that all vehicles within the test group would have CO_2 emission levels at or below those of the selected vehicle, even if there is some variation in the CO_2 control strategies within the test group (such as different transmission types). Under this approach, the test vehicle might or might not be the same one that would be selected as worst case for criteria pollutants. Vehicle manufacturers expressed concern with this approach as well, and EPA ultimately rejected this approach because it could have required manufacturers to test two vehicles in each test group, rather than a single vehicle. This would represent an added timing burden to manufacturers because they might need to build additional test vehicles at the time of certification that previously weren't required to be tested.

Instead, EPA proposed and will adopt provisions that allow a single Emission Data Vehicle to represent the test group for both Tier 2 and CO_2 certification. The manufacturer will be allowed to initially apply the Emission Data Vehicle's CO_2 emissions value to all models in the test group, even if other models in the test group are expected to have higher CO_2 emissions. However, as a condition of the certificate, this surrogate CO_2 emissions value will generally be replaced with actual, model-level CO_2 values based on results from CAFE testing that occurs later in the model year. This model-level data will become the official certification test results (as per the conditioned certificate) and will be used to determine compliance with the fleet average. Only if the test vehicle is in fact the worst case CO_2 vehicle for the test group could the manufacturer elect to apply the Emission Data Vehicle emission levels to all models in the test group for purposes of calculating fleet average emissions. Manufacturers would be unlikely to make this choice, because doing so would ignore the emissions performance of vehicle models in their fleet with lower CO_2 emissions and would unnecessarily inflate their CO_2 fleet average. Testing at the model level already occurs and data are already being submitted to EPA for CAFE and labeling purposes, so it would be an unusual situation that would cause a manufacturer to ignore these data and choose to accept a higher CO_2 fleet average.

Manufacturers will be subject to two standards, the fleet average standard and the in-use standard for the useful life of the vehicle. Compliance with the fleet average standard is based on production-weighted averaging of the test data applied to each model. For each model, the in-use standard will generally be set at 10% higher than the level used for that model in calculating the fleet average (*see* Section III.E.4).[275] The certificate will cover both of these standards, and the manufacturer will have to demonstrate compliance with both of these standards for purposes of receiving a certificate of conformity. The certification process for the in-use standard is discussed below in Section III.E.4.

c. Certification Testing Protocols and Procedures

To be consistent with CAFE, EPA will combine the CO_2 emissions results from the FTP and HFET tests using the same calculation method used to determine fuel economy for CAFE purposes. This approach is appropriate for CO_2 because CO_2 and fuel economy are so closely related. Other than the fact that fuel economy is calculated using a harmonic average and CO_2 emissions can be calculated using a conventional average, the calculation methods are very similar. The FTP CO_2 data will be weighted at 55%, and the highway CO_2 data at 45%, and then averaged to determine the combined number. See Section III.B.1 for more detailed information on CO_2 test procedures, Section III.C.1 on Air Conditioning Emissions, and Section III.B.7 for N_2O and CH_4 test procedures.

For the purposes of compliance with the fleet average and in-use standards, the emissions measured from each test vehicle will include hydrocarbons (HC) and carbon monoxide (CO), in addition to CO_2. All three of these exhaust constituents are currently measured and used to determine the amount of fuel burned over a given test cycle using a "carbon balance equation" defined in the regulations, and thus measurement of these is an integral part of current fuel economy testing. As explained in Section III.C, it is important to account for the total carbon content of the fuel. Therefore the carbon-related combustion products HC and CO must be included in the calculations along with CO_2, and any other carbon-containing exhaust components such as aldehyde emissions from alcohol-fueled vehicles. CO emissions are adjusted by a coefficient that reflects the carbon weight fraction (CWF) of the CO molecule, and HC emissions are adjusted by a coefficient that reflects the CWF of the fuel being burned (the molecular weight approach doesn't work since there are many different hydrocarbon compounds being accounted for). Thus, EPA will calculate the carbon-related exhaust emissions, also known as "CREE," of each test vehicle according to the following formula, where HC, CO, and CO_2 are in units of grams per mile:

[275] In cases where configuration or sub-configuration level data exist, the in-use standard will be set at 10% higher than those emissions test results. See Section III.E.4.

carbon-related exhaust emissions (grams/mile) = CWF*HC + 1.571*CO + CO_2

Where:

CWF = the carbon weight fraction of the test fuel.

As part of the current CAFE and Tier 2 compliance programs, EPA selects a subset of vehicles for confirmatory testing at its National Vehicle and Fuel Emissions Laboratory. The purpose of confirmatory testing is to validate the manufacturer's emissions and/or fuel economy data. Under this rule, EPA will add CO_2, N_2O, and CH_4 to the emissions measured in the course of Tier 2 and CAFE confirmatory testing. The N_2O and methane measurement requirements will begin for model year 2015, when requirements for manufacturer measurement to comply with the standard also take effect. The emission values measured at the EPA laboratory will continue to stand as official, as under existing regulatory programs.

Under current practice, if during EPA's confirmatory fuel economy testing, the EPA fuel economy value differs from the manufacturer's value by more than 3%, manufacturers can request a re-test. The re-test results stand as official, even if they differ by more than 3% from the manufacturer's value. EPA proposed extending this practice to CO_2 results, but manufacturers commented that this could lead to duplicative testing and increased test burden. EPA agrees that the close relationship between CO_2 and fuel economy precludes the need to conduct additional confirmatory tests for both fuel economy and CO_2 to resolve potential discrepancies. Therefore EPA will continue to allow a re-test request based on a 3% or greater disparity in manufacturer and EPA confirmatory fuel economy test values, since a manufacturer's fleet average emissions level would be established on the basis of model-level testing only (unlike Tier 2 for which a fixed bin standard structure provides the opportunity for a compliance buffer).

4. Useful Life Compliance

Section 202(a)(1) of the CAA requires emission standards to apply to vehicles throughout their statutory useful life, as further described in Section III.A. For emission programs that have fleet average standards, such as Tier 2 NO_X fleet average standards and the new CO_2 standards, the useful life requirement applies to individual vehicles rather than to the fleet average standard. For example, in Tier 2 the useful life requirements apply to the individual emission standard levels or "bins" that the vehicles are certified to, not the fleet average standard. For Tier 2, the useful life requirement is 10 years [276] or 120,000 miles with an optional 15 year or 150,000 mile provision. A similar approach is used for heavy-duty engines, however a specific Family Emissions Level is assigned to the engine family at certification, as compared to a pre-defined bin emissions level as in Tier 2.

As noted above, the in-use CO_2 standard under the greenhouse gas program, like Tier 2, will apply to individual vehicles and is separate from the fleet-average standard. However, unlike the Tier 2 program and other EPA fleet average standards, the model-level CO_2 test results are themselves used to calculate the fleet average standard for compliance purposes. This is consistent with the current CAFE practice, but it means the fleet average standard and the emission test results used to calculate compliance with the fleet average standard do not take into account test-to-test variability and production variability that can affect in-use levels. Since the CO_2 fleet average uses the model level emissions test results themselves for purposes of calculating the fleet average, EPA proposed an adjustment factor for the in-use standard to provide some margin for production and test-to-test variability that could result in differences between the initial emission test results used to calculate the fleet average and emission results obtained during subsequent in-use testing. EPA proposed that each model's in-use CO_2 standard would be the model specific level used in calculating the fleet average, adjusted to be 10% higher.

EPA received significant comment from industry expressing concern with the in-use standard. The comments focused on concerns about manufacturer liability for in-use CO_2 performance and for the most part did not address the proposed 10% adjustment level or even the need for an adjustment to account for variability. Some comments suggested that an in-use standard is not necessary because in-use testing is not mandated in the CAA. Others stated that since there is no evidence that CO_2 emission levels increase over time, there is no need for an in-use standard. Finally, there was a general concern that failure to meet the in-use standard would result in recall liability and that recall can only be used in cases where it can be demonstrated that a "repair" can remedy the nonconformity. One manufacturer provided comments supporting the use of a 10% adjustment factor for the in-use standard. These comments also recommended that the 10% adjustment factor be applied to configuration or subconfiguration data rather than to model-level data unless the lower-level data were not available. Finally, the manufacturer expressed concern that a straight 10% adjustment would result in inequity between high- and low-emitting vehicles.

Section 202(a)(1) specifies that emissions standards are to be applicable for the useful life of the vehicle. The in-use emissions standard for CO_2 implements this provision. While EPA agrees that the CAA does not require the Agency to perform in-use testing to monitor compliance with in-use standards, the Act clearly authorizes in-use testing. EPA has a long tradition of performing in-use testing and has found it to be an effective tool in the overall light-duty vehicle compliance program. EPA continues to believe that it is appropriate to perform in-use testing and that the evaluation of individual vehicle performance for all regulated emission constituents, including CO_2, N_2O and CH_4, is necessary to ensure compliance with all light-duty requirements. EPA also believes that the CAA clearly mandates that all emission standards apply for a vehicle's useful life and that an in-use standard is therefore necessary.

EPA agrees with industry commenters that there is little evidence to indicate that CO_2 emission levels from current-technology vehicles increase over time. However, as stated above, the CAA mandates that all emission standards apply for a vehicle's useful life regardless of whether the emissions increase over time. In addition, there are factors other than emission deterioration over time that can cause in-use emissions to be greater than emission standards. The most obvious are component defects, production mistakes, and the stacking of component production and design tolerances. Any one of these can cause an exceedance of emission standards for individual vehicles or whole model lines. Finally EPA believes that it is essential to monitor in-use GHG emissions performance of new technologies, for which there is currently no in-use experience, as they enter the market. Thus EPA believes that the value in establishing an in-use standard extends beyond just addressing emission deterioration over time from current technology vehicles.

The concern over recall liability in cases where there is no effective repair remedy has some legitimate basis. For

[276] 11 years for heavy-light-duty trucks, ref. 40 CFR 86.1805–12.

example, EPA agrees there would be a concern if a number of vehicles for a particular model were to have in-use emissions that exceed the in-use standard, with no effective repair available to remedy the noncompliance. However, EPA does not anticipate a scenario involving exceedance of the in-use standard that would cause the Agency to pursue a recall unless there is a repairable cause of the exceedance. At the same time, failures to emission-related components, systems, software, and calibrations do occur that could result in a failure of the in-use CO_2 standard. For example, a defective oxygen sensor that causes a vehicle to burn excessive fuel could result in higher CO_2 levels that would exceed the in-use standard. While it is likely that such a problem would affect other emissions as well, there would still be a demonstratable, repairable problem such that a recall might be valid. Therefore, EPA believes that a CO_2 in-use standard is statutorily required and can serve as a useful tool for determining compliance with the GHG program.

EPA agrees with the industry comment that it is appropriate where possible to apply the 10% adjustment factor to the vehicle-level emission test results, rather than to a model-type value that includes production weighting factors. If no subconfiguration test data are available, then the adjustment factor will be applied to the model-type value. Therefore, EPA is finalizing an in-use standard based on a 10% multiplicative adjustment factor but the adjustment will be applied to emissions test results for the vehicle subconfiguration if such data exist, or to the model-type emissions level used to calculate the fleet average if subconfiguration test data are not available.

EPA believes that the useful life period established for criteria pollutants under Tier 2 is also appropriate for CO_2. Data from EPA's current in-use compliance test program indicate that CO_2 emissions from current technology vehicles increase very little with age and in some cases may actually improve slightly. The stable CO_2 levels are expected because unlike criteria pollutants, CO_2 emissions in current technology vehicles are not controlled by after treatment systems that may fail with age. Rather, vehicle CO_2 emission levels depend primarily on fundamental vehicle design characteristics that do not change over time. Therefore, vehicles designed for a given CO_2 emissions level will be expected to sustain the same emissions profile over their full useful life.

The CAA requires emission standards to be applicable for the vehicle's full useful life. Under Tier 2 and other vehicle emission standard programs, EPA requires manufacturers to demonstrate at the time of certification that the new vehicles being certified will continue to meet emission standards throughout their useful life. EPA allows manufacturers several options for predicting in-use deterioration, including full vehicle testing, bench-aging specific components, and application of a deterioration factor based on data and/or engineering judgment.

In the specific case of CO_2, EPA does not currently anticipate notable deterioration and has therefore determined that an assigned deterioration factor be applied at the time of certification. At this time EPA will use an additive assigned deterioration factor of zero, or a multiplicative factor of one. EPA anticipates that the deterioration factor will be updated from time to time, as new data regarding emissions deterioration for CO_2 are obtained and analyzed. Additionally, EPA may consider technology-specific deterioration factors, should data indicate that certain CO_2 control technologies deteriorate differently than others.

During compliance plan discussions prior to the beginning of the certification process, EPA will explore with each manufacturer any new technologies that could warrant use of a different deterioration factor. For any vehicle model determined likely to experience increases in CO_2 emissions over the vehicle's useful life, manufacturers will not be allowed to use the assigned deterioration factor but rather will be required to establish an appropriate factor. If such an instance were to occur, EPA would allow manufacturers to use the whole-vehicle mileage accumulation method currently offered in EPA's regulations.[277]

N_2O and CH_4 emissions are directly affected by vehicle emission control systems. Any of the durability options offered under EPA's current compliance program can be used to determine how emissions of N_2O and CH_4 change over time. EPA recognizes that manufacturers have not been required to account for durability effects of N_2O and CH_4 prior to now. EPA also realizes that industry will need sufficient time to explore durability options and become familiar with procedures for determining deterioration of N_2O and CH_4. Therefore, until the 2015 model year, rather than requiring manufacturers to establish a durability program for N_2O and CH_4, EPA will allow manufacturers to attest that vehicles meet the deteriorated, full useful life standard. If manufacturers choose to comply with the optional CO_2 equivalent standard, EPA will allow the use of the manufacturer's existing NO_X deterioration factor for N_2O and the existing NMOG deterioration factor for CH_4.

a. Ensuring Useful Life Compliance

The CAA requires a vehicle to comply with emission standards over its regulatory useful life and affords EPA broad authority for the implementation of this requirement. As such, EPA has authority to require a manufacturer to remedy any noncompliance issues. The remedy can range from adjusting a manufacturer's credit balance to the voluntary or mandatory recall of noncompliant vehicles. These potential remedies provide manufacturers with a strong incentive to design and build complying vehicles.

Currently, EPA regulations require manufacturers to conduct in-use testing as a condition of certification. Specifically, manufacturers must commit to later procure and test privately-owned vehicles that have been normally used and maintained. The vehicles are tested to determine the in-use levels of criteria pollutants when they are in their first and fourth years of service. This testing is referred to as the In-Use Verification Program (IUVP) testing, which was first implemented as part of EPA's CAP 2000 certification program.[278] The emissions data collected from IUVP serve several purposes. IUVP results provide EPA with annual real-world in-use data representing the majority of certified vehicles. EPA uses IUVP data to identify in-use problems, validate the accuracy of the certification program, verify manufacturer durability processes, and support emission modeling efforts. Manufacturers are required to test low mileage and high mileage vehicles over the FTP and US06 test cycles. They are also required to provide evaporative emissions, onboard refueling vapory recovery (ORVR) emissions and on-board diagnostics (OBD) data.

Manufacturers are required to provide data for all regulated criteria pollutants. Some manufacturers have voluntarily submitted CO_2 data as part of IUVP. EPA proposed that manufacturers provide CO_2, N_2O, and CH_4 data as part of the IUVP. EPA also proposed that in order to adequately analyze and assess

[277] 40 CFR 86.1823–08.

[278] 64 FR 23906, May 4, 1999.

in-use CO_2 results, which are based on the combination of FTP and highway cycle test results, the highway fuel economy test would also need to be part of IUVP. The University of California, Santa Barbara expressed support for including N_2O and CH_4 emissions as part of the IUVP. Manufacturer comments were almost unanimously opposed to including any GHG as part of the IUVP. Specifically, industry commented that CO_2 emissions do not deteriorate over time and in some cases actually improve. Ford provided data for several 2004 through 2007 model year vehicles that indicate CO_2 emissions improved an average of 1.42% when vehicles were tested over 5,000 miles. Manufacturers commented that the inclusion of a greenhouse gas emissions requirement and the highway test cycle as part of the IUVP would unnecessarily increase burden on manufacturers and provide no benefit, since CO_2 emissions do not deteriorate over time. Manufacturers also commented that N_2O and CH_4 emissions are very low and by EPA's own account only represent about 1% of total light-duty vehicle GHG emissions. They also expressed concern over the cost and burden of measuring N_2O for IUVP, since many manufacturers use contractor laboratories to assist in their IUVP testing and many of these facilities do not have the necessary equipment to measure N_2O. They stated that since it was unnecessary to include CO_2 emissions as part of IUVP and since N_2O and CH_4 were such small contributors to GHG emissions, it did not make sense to include N_2O and CH_4 as part of the IUVP either. They felt that N_2O and CH_4 could be more appropriately handled through attestation or an annual unregulated emissions report.

As discussed above, although EPA shares the view expressed in manufacturer comments that historical data demonstrate little CO_2 deterioration, in-use emissions can increase for a number of reasons other than deterioration over time. For example, production or design errors can result in increased GHG emissions. Components that aren't built as they were designed or vehicles inadvertently assembled improperly or with the wrong parts or with parts improperly designed can result in GHG emissions greater than those demonstrated to EPA during the certification process and used in calculating the manufacturer's fleet average. The "stacking" of component design and production tolerances can also result in in-use emissions that are greater than those used in calculating a manufacturer's fleet average.

EPA believes IUVP testing is also important to monitor in-use versus certification emission levels. Because the emphasis of the GHG program is on a manufacturer's fleet average standard, it is difficult for EPA to make an assessment as to whether manufacturer's vehicles are actually producing the GHG levels claimed in their fleet average without some in-use data for comparison. For example, EPA has expressed concern that with the in-use standard based on a 10% adjustment factor, there would be an incentive for manufacturers to develop their fleet average utilizing the full range of the 10% in-use standard. The only way for EPA to assess whether manufacturers are designing and producing vehicles that meet their respective fleet average standards is for EPA to be able to review in-use GHG emissions from the IUVP.

Finally EPA does have some concern about potential CO_2 emissions deterioration in advanced technologies for which we currently have no in-use experience or data. Since CAFE has never had an in-use requirement and today's final regulations are the first ever GHG standards, there has been no need to focus on GHG emissions in-use as there will be with the new GHG standards. Many of the advanced technologies that EPA expects manufacturers to use to meet the GHG standards have been introduced in production vehicles, but until now not for the purpose of controlling greenhouse gas emissions. For example, advanced dual-clutch or seven-speed automatic transmissions, and start-stop technologies have not been broadly tested in the field for their long-term CO_2 performance. In-use GHG performance information for vehicles using these technologies is needed for many reasons, including evaluation of whether allowing use of assigned deterioration factors for CO_2 in lieu of actual deterioration factors will continue to be appropriate.

Therefore, EPA is finalizing the requirement that all manufacturers must provide IUVP emissions data for CO_2. EPA will also require manufacturers to perform the highway test cycle as part of IUVP. Since the CO_2 standard reflects a combined value of FTP and highway results, it is necessary to include the highway emission test in IUVP to enable EPA to compare an in-use CO_2 level with a vehicle's in-use standard. EPA understands that requiring manufacturers to also measure N_2O and CH_4 will be initially challenging, since many manufacturer facilities do not currently have the proper analytical equipment. To be consistent with timing of the N_2O and CH_4 emissions standards for this rule, N_2O and CH_4 will not be required for IUVP until the 2015 model year.

Another component of the CAP 2000 certification program is the In-Use Confirmatory Program (IUCP). This is a manufacturer-conducted recall quality in-use test program that can be used as the basis for EPA to order an emission recall. In order for vehicles tested in the IUVP to qualify for IUCP, there is a threshold of 1.30 times the certification emission standard and an additional requirement that at least 50% of the test vehicles for the test group fail for the same substance. EPA proposed to exclude IUVP data for CO_2, N_2O, and CH_4 emissions from the IUCP thresholds. EPA felt that there was not sufficient data to determine if the existing IUCP thresholds were appropriate or even applicable to those emissions. The University of California, Santa Barbara disagreed with EPA's concerns and recommended that CO_2, N_2O, and CH_4 emissions all be subject to the IUVP threshold criteria. Manufacturers commented that since CO_2 performance is a function of vehicle design and cannot be remedied in the field with the addition or replacement of emissions control devices like traditional criteria pollutants, it would not be appropriate or necessary to include IUCP threshold criteria for GHG emissions.

EPA continues to believe that the IUCP is an important part of EPA's in-use compliance program for traditional criteria pollutants. For GHG emissions, EPA believes the IUCP will also be a valuable future tool for achieving compliance. However, there are insufficient data today to determine whether the current IUCP threshold criteria are appropriate for GHG emissions. Once EPA can gather more data from the IUVP program and from EPA's internal surveillance program described below, EPA will reassess the need to exclude IUCP thresholds, and if warranted, propose a separate rulemaking establishing IUCP threshold criteria which may include CO_2, N_2O, and CH_4 emissions. Therefore, for today's final action, EPA will exclude IUVP data for CO_2, N_2O, and CH_4 emissions from the IUCP thresholds.

EPA has also administered its own in-use testing program for light-duty vehicles under authority of section 207(c) of the CAA for more than 30 years. In this program, EPA procures and tests representative privately owned vehicles to determine whether they are complying with emission standards.

When testing indicates noncompliance, EPA works with the manufacturer to determine the cause of the problem and to conduct appropriate additional testing to determine its extent or the effectiveness of identified remedies. This program operates in conjunction with the IUVP program and other sources of information to provide a comprehensive picture of the compliance profile for the entire fleet and address compliance problems that are identified. EPA will add CO_2, N_2O, and CH_4 to the emissions measurements it collects during surveillance testing.

b. In-Use Compliance Standard

For Tier 2, the in-use standard and the standard used for fleet average calculation are the same. In-use compliance for an individual vehicle is determined by comparing the vehicle's in-use emission results with the emission standard levels or "bin" to which the vehicle is certified rather than to the Tier 2 fleet average standard for the manufacturer. This is because as part of a fleet average standard, individual vehicles can be certified to various emission standard levels, which could be higher or lower than the fleet average standard. Thus, it would be inappropriate to compare an individual vehicle to the fleet average, since that vehicle could have been certified to an emission level that is different than the fleet average level.

This will also be true for the CO_2 fleet average standard. Therefore, to ensure that an individual vehicle complies with the CO_2 standards in-use, it is necessary to compare the vehicle's in-use CO_2 emission result with the appropriate model-level certification CO_2 level used in determining the manufacturer's fleet average result.

There is a fundamental difference between the CO_2 standards and Tier 2 standards. For Tier 2, the standard level used for the fleet average calculation is one of eight different emission levels, or "bins," whereas for the CO_2 fleet average standard, the standard level used for the fleet average calculation is the model-level certification CO_2 result. The Tier 2 fleet average standard is calculated using the "bin" emission level or standard, not the actual certification emission level of the certification test vehicle. So no matter how low a manufacturer's actual certification emission results are, the fleet average is still calculated based on the "bin" level rather than the lower certification result.[279] In contrast, the CO_2 fleet average standard will be calculated using the actual vehicle model-level CO_2 values from the certification test vehicles. With a specified certification emission standard, such as the Tier 2 "bins," manufacturers typically attempt to over-comply with the standard to give themselves some cushion for potentially higher in-use testing results due to emissions performance deterioration and/or variability that could result in higher emission levels during subsequent in-use testing. For our CO_2 standards, the emission level used to calculate the fleet average is the actual certification vehicle test result, thus manufacturers cannot over comply since the certification test vehicle result will always be the value used in determining the CO_2 fleet average. If the manufacturer attempted to design the vehicle to achieve a lower CO_2 value, similar to Tier 2 for in-use purposes, the new lower CO_2 value would simply become the new value used for calculating the fleet average.

The CO_2 fleet average standard is based on the performance of pre-production technology that is representative of the point of production, and while there is expected to be limited if any deterioration in effectiveness for any vehicle during the useful life, the fleet average standard does not take into account the test-to-test variability or production variability that can affect in-use levels. Therefore, EPA believes that unlike Tier 2, it is necessary to have a different in-use standard for CO_2 to account for these variabilities. EPA proposed an in-use standard that was 10% higher than the appropriate model-level certification CO_2 level used in determining the manufacturer's fleet average result.

As described above, manufacturers typically design their vehicles to emit at emission levels considerably below the certification standards. This intentional difference between the actual emission level and the emission standard is referred to as "certification margin," since it is typically the difference between the certification emission level and the emission standard. The certification margin can provide manufacturers with some protection from exceeding emission standards in-use, since the in-use standards are typically the levels used to calculate the fleet average. For Tier 2, the certification margin is the delta between the specific emission standard level, or "bin," to which the vehicle is certified, and the vehicle's certification emission level.

Since the level of the fleet average standard does not reflect this kind of variability, EPA believes it is appropriate to set an in-use standard that provides a reasonable cushion for in-use variability that is beyond a manufacturer's control. EPA proposed a factor of 10% that would act as a surrogate for a certification margin. The factor would only be applicable to CO_2 emissions, and would be applied to the model-level test results that are used to establish the model-level in-use standard.

EPA selected a value of 10% for the in-use standard based on a review of EPA's fuel economy labeling and CAFE confirmatory test results for the past several vehicle model years. The EPA data indicate that it is common for test variability to range between three to six percent and only on rare occasions to exceed 10%. EPA believes that a value of 10% should be sufficient to account for testing variability and any production variability that a manufacturer may encounter. EPA considered both higher and lower values. The Tier 2 fleet as a whole, for example, has a certification margin approaching 50%.[280] However, there are some fundamental differences between CO_2 emissions and other criteria pollutants in the magnitude of the compounds. Tier 2 NMOG and NO_X emission standards are hundredths of a gram per mile (*e.g.,* 0.07 g/mi NO_X & 0.09 g/mi NMOG), whereas the CO_2 standards are four orders of magnitude greater (*e.g.,* 250 g/mi). Thus EPA does not believe it is appropriate to consider a value on the order of 50 percent. In addition, little deterioration in emissions control is expected in-use. The adjustment factor addresses only one element of what is usually built into a compliance margin.

The intent of the separate in-use standard, based on a 10% compliance factor adjustment, is to provide a reasonable margin such that vehicles are not automatically deemed as exceeding standards simply because of normal variability in test results. EPA has some concerns however that this in-use compliance factor could be perceived as providing manufacturers with the ability to design their fleets to generate CO_2 emissions up to 10% higher than the actual values they use to certify and to calculate the year end fleet average value that determines compliance with the fleet average standard. This concern provides additional rationale for

[279] In a similar fashion, the fleet average for heavy-duty engines is calculated using a Family Emission Level, determined by the manufacturer, which is different from the emission level of the test engine.

[280] *See* pages 39–41 of EPA's Vehicle and Engine Compliance Activities 2007 Progress Report (EPA–420–R–08–011) published in October, 2008. This document is available electronically at *http://epa.gov/otaq/about/420r08011.pdf.*

requiring FTP and HFET IUVP data for CO_2 emissions to ensure that in-use values are not regularly 10% higher than the values used in the fleet average calculation. If in the course of reviewing a manufacturer's IUVP data it becomes apparent that a manufacturer's CO_2 results are consistently higher than the values used for calculation of the fleet average, EPA will discuss the matter with the manufacturer and consider possible resolutions such as changes to ensure that the emissions test data more accurately reflect the emissions level of vehicles at the time of production, increased EPA confirmatory testing, and other similar measures.

Commenters generally did not comment on whether 10% was the appropriate level for the adjustment factor. Honda did support use of the proposed 10% adjustment factor for the in-use standard. But Honda also recommended that the 10% adjustment factor be applied to subconfiguration data rather than the model-level data unless there was no subconfiguration data available. Honda also expressed some concern over the inequity a straight 10% adjustment would incur between high- and low-emitting vehicles. They suggested that rather than using an across-the-board 10% multiplicative adjustment factor applied to the model-level CO_2 value for all vehicles, it would be more equitable to take the sum of a 5% multiplicative factor applied to the model-level CO_2 value and a 5% factor applied to the manufacturer's fleet CO_2 target.

EPA understands that use of a multiplicative adjustment factor would result in a higher absolute in-use value for a vehicle that has higher CO_2 than for a vehicle with a lower CO_2. However, this difference is not relevant to the purpose of the adjustment factor, which is to provide some cushion for test and production variability. EPA does not believe the difference would be great enough to confer the higher-emitting vehicles with an unfair advantage with respect to emissions variability.

Given that the purpose of the in-use standard is to enable a fair comparison between certification and in-use emission levels, EPA agrees that it is appropriate to apply the 10% adjustment factor to actual emission test results rather than to model-type emission levels which are production weighted. Therefore, EPA is finalizing an in-use standard that applies a multiplicative 10% adjustment factor to the subconfiguration emissions values, if such are available. (For flexible-fuel and dual-fuel vehicles the multiplicative factor will be applied to the test results on each fuel. In other words, these vehicles will have two applicable in-use emission standards; one for operation on the conventional fuel and one for operation on the alternative fuel.) If no emissions data exist at the subconfiguration level the adjustment will be applied to the model-type value as originally proposed. If the in-use emission result for a vehicle exceeds the emissions level, as applicable, adjusted as just described by 10%, then the vehicle will have exceeded the in-use emission standard. The in-use standard will apply to all in-use compliance testing including IUVP, selective enforcement audits, and EPA's internal test program.

5. Credit Program Implementation

As described in Section III.E.2 above, for each manufacturer's model year production, the manufacturer will average the CO_2 emissions within each of the two averaging sets (passenger cars and trucks) and compare that with its respective fleet average standards (which in turn will have been determined from the appropriate footprint curve applicable to that model year). In addition to this within-company averaging, when a manufacturer's fleet average CO_2 values of vehicles produced in an averaging set over-complies compared to the applicable fleet average standard, the manufacturer could generate credits that it could save for later use (banking) or could sell or otherwise distribute to another manufacturer (trading). Section III.C discusses opportunities for manufacturers to improve their fleet average, beyond the credits that are simply calculated by over-achieving their applicable fleet average standard. Implementation of the credit program generally involves two steps: calculation of the credit amount and reporting the amount and the associated data and calculations to EPA.

EPA is promulgating two broad types of credit programs under this rulemaking. One type of credit directly lowers a manufacturer's actual fleet average by virtue of being applied within the methodology for calculating the fleet average emissions. Examples of this type of credit include the credits available for alternative fuel vehicles and the advanced technology vehicle provisions. The second type of credit is independent of the calculation of a manufacturer's fleet average. Rather than giving credit by lowering a manufacturer's fleet average via a credit mechanism, these credits (in megagrams) are calculated separately and are simply added to the manufacturer's overall "bank" of credits (or debits). Using a fictional example, the remainder of this section reviews the different types of credits and shows where and how they are calculated and how they impact a manufacturer's available credits.

a. Basic Credits: Fleet Average Emissions Are Below the Standard

As just noted, basic credits are earned by a manufacturer's fleet that performs better than the applicable fleet average standard. Manufacturers will calculate their fleet average standards (separate standards are calculated for cars and trucks) using the footprint-based equations described in Section III.B. A manufacturer's actual end-of-year fleet average is calculated similarly to the way in which CAFE values are currently calculated; in fact, the regulations are essentially identical. The current CAFE calculation methods are in 40 CFR Part 600. As part of this rulemaking, EPA has amended key subparts and sections of Part 600 to require that fleet average CO_2 emissions be calculated in a manner parallel to the way CAFE values are calculated. First, manufacturers will determine a CO_2-equivalent value for each model type. The CO_2-equivalent value is a summation of the carbon-containing constituents of the exhaust emissions on a CO_2-equivalent basis. For gasoline and diesel vehicles this simply involves measurement of total hydrocarbons and carbon monoxide in addition to CO_2. The calculation becomes somewhat more complex for alternative fuel vehicles due to the different nature of their exhaust emissions. For example, for ethanol-fueled vehicles, the emission tests must measure ethanol, methanol, formaldehyde, and acetaldehyde in addition to CO_2. However, all these measurements are currently necessary to determine fuel economy for the labeling and CAFE programs, and thus no new testing or data collection will be required.[281] Second, manufacturers will calculate a fleet average by weighting the CO_2 value for each model type by the production of that model type, as they currently do for the CAFE program. Again, this will be done separately for cars and trucks. Finally, the manufacturer will compare the calculated standard with the fleet average that is actually achieved to determine the credits (or debits) that are generated. Both the determination of the applicable standard and the actual fleet average will be done after the model

[281] Note that the final rule also provides an option for manufacturers to incorporate N_2O and CH_4 in this calculation at their CO_2-equivalent values.

year is complete and using final model year vehicle production data.

Consider a basic hypothetical example where Manufacturer "A" has calculated a car fleet average standard of 300 grams/mile and a car fleet average of 290 grams/mile (Table III.E.5–1). Further assume that the manufacturer produced 500,000 cars. The credit is calculated by taking the difference between the standard and the fleet average (300 − 290=10) and multiplying it by the manufacturer's production of 500,000. This result is then multiplied by the assigned lifetime vehicle miles travelled (for cars this is 195,264 miles, as discussed in Joint TSD Chapter 4), then finally divided by 1,000,000 to convert from grams to total megagrams. The result is the total number of megagrams of credit generated by the manufacturer's car fleet. The same methodology is used to calculate the total number of megagrams of deficit, if the manufacturer was not able to comply with the fleet average standard. In this example, the result is 976,320 megagrams of credits, as shown in Table III.E.5–1.

TABLE III.E.5–1—SUMMARY FOR MANUFACTURER A: EARNING BASIC CREDITS

		CO_2		Totals
Total production	Conventional: 500,000	290 g/mi		500,000
Fleet average standard		300 g/mi		
Fleet average		290 g/mi		
Credits	[(300 − 290) × 500,000 × 195,264] ÷ 1,000,000		=	954,855 Mg

b. Interim Advanced Technology Vehicle Provisions

The lower exhaust greenhouse gas emissions of some advanced technology vehicles can directly benefit a manufacturer's fleet average, thus increasing the amount of fleet average-based credits they earn (or reducing the amount of debits that would otherwise accrue). Manufacturers that produce electric vehicles, plug-in hybrid electric vehicles, or fuel cell electric vehicles will include these vehicles in the fleet average calculation with their model type emission values. As described in detail in Section III.C.3, the emissions from electric vehicles and plug-in hybrid electric vehicles when operating on electricity will be accounted for by assuming zero emissions (0 g/mi CO_2) for a limited number of vehicles through the 2016 model year. This interim limited use of 0 g/mi will be allowed for the technologies specifically noted above and as defined in the regulations, with the limitation that the vehicles must be certified to Tier 2 Bin 5 emission standards or cleaner (*i.e.,* advanced technology vehicles must contribute to criteria pollutant reductions as well as to greenhouse gas emission reductions).

EPA proposed specific definitions for the vehicle technologies eligible for these provisions. One manufacturer suggested the following changes in their comments:

- Insert an additional criterion for electric vehicles that specifically states that an electric vehicle may not have an onboard combustion engine/generator system.
- A minor deletion of text from the definition for "Fuel cell."
- The deletion of the requirement that a PHEV have an equivalent all-electric range of more than 10 miles.

EPA agrees with the first comment. As written in the proposal, a vehicle with an onboard combustion engine that serves as a generator would not have been excluded from the definition of electric vehicle. However, EPA believes it should be. Although such a vehicle might be propelled by an electric motor directly, if the indirect source of electricity is an onboard combustion engine then the vehicle is fundamentally not an electric vehicle. EPA is also adopting the commenter's proposed rephrasing of the definition for "Fuel cell," which is simpler and clearer. Finally, in the context of the advanced technology incentive provisions in this final rule, EPA concurs with the commenter that the requirement that a PHEV have an equivalent all-electric range of at least ten miles is unnecessary. In the context of the proposed credit multiplier EPA was concerned that some vehicles could install a charging system on a limited battery and gain credit beyond what the limited technology would deserve simply by virtue of being defined as a PHEV. However, because EPA is not finalizing the proposed multiplier provisions (*see* Section III.C.3) and is instead using as the sole incentive the zero emission tailpipe level as the compliance value for a manufacturer's fleetwide average, this concern is no longer valid. Since EPA is not promulgating multipliers, the concern expressed at proposal no longer applies, and each PHEV will get a benefit from electricity commensurate with its measured use of grid electricity, thus EPA is no longer concerned about the multiplier effect. Thus, EPA is finalizing the following definitions in the regulations:

- *Electric vehicle* means a motor vehicle that is powered solely by an electric motor drawing current from a rechargeable energy storage system, such as from storage batteries or other portable electrical energy storage devices, including hydrogen fuel cells, provided that:

○ Recharge energy must be drawn from a source off the vehicle, such as residential electric service;

○ The vehicle must be certified to the emission standards of Bin #1 of Table S04–1 in paragraph (c)(6) of § 86.1811; and

○ The vehicle does not have an onboard combustion engine/generator system as a means of providing electrical energy.

- *Fuel cell electric vehicle* means a motor vehicle propelled solely by an electric motor where energy for the motor is supplied by a fuel cell.
- *Fuel cell* means an electrochemical cell that produces electricity via the non-combustion reaction of a consumable fuel, typically hydrogen.
- *Plug-in hybrid electric vehicle (PHEV)* means a hybrid electric vehicle that has the capability to charge the battery from an off-vehicle electric source, such that the off-vehicle source cannot be connected to the vehicle while the vehicle is in motion.

With some simplifying assumptions, assume that 25,000 of Manufacturer A's fleet are now plug-in hybrid electric vehicles with a calculated CO_2 value of 80 g/mi, and the remaining 475,000 are conventional technology vehicles with an average CO_2 value of 290 grams/mile. By including the advanced technology PHEVs in their fleet, Manufacturer A now has more than 2.9 million credits (Table III.E.5–2).

TABLE III.E.5–2—SUMMARY FOR MANUFACTURER A: EARNING BASIC AND INTERIM ADVANCED TECHNOLOGY CREDITS

		CO_2	Totals
Total production	Conventional: 475,000	290 g/mi	500,000
	PHEV: 25,000	80 g/mi	
Fleet average standard		300 g/mi	
Fleet average	[(475,000 × 290) + (25,000 × 80)] ÷ [500,000]	280 g/mi	
Credits	[(300 − 280) × 500,000 × 195,264] ÷ 1,000,000		= 1,952,640 Mg

c. Flexible-Fuel Vehicle Credits

As noted in Section III.C, treatment of flexible-fuel vehicle (FFV) credits differs between model years 2012–2015 and 2016 and later. For the 2012 through 2015 model years the FFV credits will be calculated as they are in the CAFE program for the same model years, except that formulae in the final regulations have been modified as needed to do the calculations in terms of grams per mile of CO_2 values rather than miles per gallon. These credits are integral to the fleet average calculation and allow the vehicles to be represented by artificially reduced emissions. To use this credit program, the CO_2 values of FFVs will be represented by the average of two things: the CO_2 value while operating on gasoline and the CO_2 value while operating on the alternative fuel multiplied by 0.15.

For MY 2012 to 2015 for example, Manufacturer A makes 30,000 FFVs with CO_2 values of 280 g/mi using gasoline and 260 g/mi using E85. The CO_2 value that would represent the FFVs in the fleet average calculation would be calculated as follows:

FFV emissions = [280 + (260 × 0.15)] ÷ 2 = 160 g/mi

Including these FFVs with the applicable credit in Manufacturer A's fleet average, as shown below in Table III.E.5–3, further reduces the fleet average to 256 grams/mile and increases the manufacturer's credits to about 4.2 million megagrams.

TABLE III.E.5–3 SUMMARY FOR MANUFACTURER A: EARNING BASIC, INTERIM ADVANCED TECHNOLOGY, AND FLEXIBLE FUEL VEHICLE CREDITS

		CO_2	Totals
Total production	Conventional: 445,000	290 g/mi	500,000
	PHEV: 25,000	80 g/mi	
	FFV: 30,000	160 g/mi	
Fleet average standard		300 g/mi	
Fleet average	[(445,000 × 290) + (25,000 × 80) + 30,000 × 160] ÷ [500,000]	272 g/mi	
Credits	[(300 − 272) × 500,000 × 195,264] ÷ 1,000,000		= 2,733,696 Mg

In the 2016 and later model years, the calculation of FFV emissions differ substantially from prior years in that the determination of the CO_2 value to represent an FFV model type will be based upon the actual use of the alternative fuel and on actual emissions while operating on that fuel. EPA's default assumption in the regulations is that the alternative fuel is used negligibly, and the CO_2 value that will apply to an FFV by default would be the value determined for operation on conventional fuel. However, if the manufacturer believes that the alternative fuel is used in real-world driving and that accounting for this use could improve the fleet average, the manufacturer has two options. First, the regulations allow a manufacturer to request that EPA determine an appropriate weighting value for an alternative fuel to reflect the degree of use of that fuel in FFVs relative to real-world use of the conventional fuel. Section III.C describes how EPA might make this determination. Any value determined by EPA will be published by EPA, and that weighting value would be available for all manufacturers to use for that fuel. The second option allows a manufacturer to determine the degree of alternative fuel use for their own vehicle(s), using a variety of potential methods. Both the method and the use of the final results must be approved by EPA before their use is allowed. In either case, whether EPA supplies the weighting factors or EPA approves a manufacturer's alternative fuel weighting factors, the CO_2 emissions of an FFV in 2016 and later would be as follows (assuming non-zero use of the alternative fuel):

(W1 × CO2conv) + (W2 × CO2alt),

Where W1 and W2 are the proportion of miles driven using conventional fuel and alternative fuel, respectively, CO2conv is the CO_2 value while using conventional fuel, and CO2alt is the CO_2 value while using the alternative fuel. In the example above, for instance, the default CO_2 value for the fictional FFV described above would be the gasoline value of 280 g/mi, and the resulting fleet average and total credits would be 279 g/mi and 2,050,272 megagrams, respectively. However, if the EPA determines that real-world ethanol use amounts to 40 percent of driving, then using the equation above the FFV would be included in the fleet average calculation with a CO_2 value of 272 g/mi, resulting in an overall fleet average of 278 g/mi and total credit accumulation of 2,147,904 megagrams.

d. Dedicated Alternative Fuel Vehicle Credits

Like the FFV credit program described above, these credits will be treated differently in the first years of the program than in the 2016 and later model years. In fact, these credits are essentially identical to the FFV credits except for two things: (1) There is no need to average CO_2 values for gasoline and alternative fuel, and (2) in 2016 and later there is no demonstration needed to get a benefit from the alternative fuel. The CO_2 values are essentially determined the same way they are for FFVs operating on the alternative fuel. For the 2012 through 2015 model years the CO_2 test results are multiplied by the credit adjustment factor of 0.15, and the result is production-weighted in the fleet average calculation. For example, assume that Manufacturer A now produces 20,000 dedicated CNG vehicles with CO_2 emissions of 220 grams/mile, in addition to the FFVs and PHEVs already included in their fleet (Table III.E.5–4). Prior to the 2016 model year the CO_2 emissions

representing these CNG vehicles will be 33 grams/mile (220 × 0.15).

TABLE III.E.5–4—SUMMARY FOR MANUFACTURER A: EARNING BASIC, ADVANCED TECHNOLOGY, FLEXIBLE FUEL VEHICLE, AND DEDICATED ALTERNATIVE FUEL VEHICLE CREDITS

		CO_2		Totals
Total production	Conventional: 425,000	290 g/mi		500,000
	PHEV: 25,000	80 g/mi		
	FFV: 30,000	160 g/mi		
	CNG: 20,000	33 g/mi		
Fleet average standard		300 g/mi		
Fleet average	[(425,000 × 290) + (25,000 × 80) + (30,000 × 160) + (20,000 × 33)] ÷ [500,000].	261 g/mi		
Credits	[(300 − 261) × 500,000 × 195,264] ÷ 1,000,000		=	3,807,648 Mg

The calculation for 2016 and later will be the same except the 0.15 credit adjustment factor is removed from the equation, and the CNG vehicles in this example would simply be production-weighted in the equation using their actual emissions value of 220 grams/mile instead of the "credited" value of 33 grams/mile.

e. Air Conditioning Leakage Credits

Unlike the credit programs described above, air conditioning-related credits do not affect the overall calculation of the fleet average or fleet average standard. Whether a manufacturer generates zero air conditioning credits or many, the calculated fleet average remains the same. Air conditioning credits are calculated and added to any credits (or deficit) that results from the fleet average calculations shown above. Thus, these credits can increase a manufacturer's credit balance or offset a deficit, but their calculation is external to the fleet average calculation. As noted in Section III.C, manufacturers can generate credits for reducing the leakage of refrigerant from their air conditioning systems. To do this the manufacturer will identify an air conditioning system improvement, indicate that they intend to use the improvement to generate credits, and then calculate an annual leakage rate (grams/year) for that system based on the method defined by the regulations. Air conditioning credits will be determined separately for cars and trucks using the car and truck-specific equations described in Section III.C.

In order to put these credits on the same basis as the basic and other credits described above, the air conditioning leakage credits will need to be calculated separately for cars and trucks. Thus, the resulting grams per mile credit determined from the appropriate car or truck equation will be multiplied by the lifetime VMT assigned by EPA (195,264 for cars; 225,865 for trucks), and then divided by 1,000,000 to get the total megagrams of CO_2 credits generated by the improved air conditioning system. Although the calculations are done separately for cars and trucks, the total megagrams will be summed and then added to the overall credit balance maintained by the manufacturer.

For example, assume that Manufacturer A has improved an air conditioning system that is installed in 250,000 cars and that the calculated leakage rate is 12 grams/year. Assume that the manufacturer has also implemented a new refrigerant with a Global Warming Potential of 850. In this case the credit per air conditioning unit, rounded to the nearest gram per mile would be:

$$[13.8 \times [1 - (12/16.6 \times 850/1{,}430)] = 7.9 \text{ g/mi.}$$

Total megagrams of credits would then be:

$$[7.9 \times 250{,}000 \times 195{,}264] \div 1{,}000{,}000 = 385{,}646 \text{ Mg.}$$

These credits would be added directly to a manufacturer's total balance; thus in this example Manufacturer A would now have, after consideration of all the above credits, a total of 4,193,294 megagrams of credits.

f. Air Conditioning Efficiency Credits

As noted in Section III.C.1.b, manufacturers may earn credits for improvements in air conditioning efficiency that reduce the impact of the air conditioning system on fuel consumption. These credits are similar to the air conditioning leakage credits described above, in that these credits are determined independently from the manufacturer's fleet average calculation, and the resulting credits are added to the manufacturer's overall balance for the respective model year. Like the air conditioning leakage credits, these credits can increase a manufacturer's credit balance or offset a deficit, but their calculation is external to the fleet average calculation.

In order to put these credits on the same basis as the basic and other credits describe above, the air conditioning efficiency credits are calculated separately for cars and trucks. Thus, the resulting grams per mile credit determined in the above equation is multiplied by the lifetime VMT, and then divided by 1,000,000 to get the total megagrams of efficiency credits generated by the improved air conditioning system. Although the calculations are done separately for cars and trucks, the total megagrams can be summed and then added to the overall credit balance maintained by the manufacturer.

As described in Section III.C, manufacturers will determine their credit based on selections from a menu of technologies, each of which provides a gram per mile credit amount. The credits will be summed for all the technologies implemented by the manufacturer, but cannot exceed 5.7 grams per mile. Once this is done, the calculation is a straightforward translation of a gram per mile credit to total car or truck megagrams, using the same methodology described above. For example, if Manufacturer A implements enough technologies to get the maximum 5.7 grams per mile for an air conditioning system that sells 250,000 units in cars, the calculation of total credits would be as follows:

$$[5.7 \times 250{,}000 \times 195{,}264] \div 1{,}000{,}000 = 278{,}251 \text{ Mg.}$$

These credits would be added directly to a manufacturer's total balance; thus in this example Manufacturer A would now have, after consideration of all the above credits, a total of 4,471,545 megagrams of credits.

g. Off-Cycle Technology Credits

As described in Section III.C, these credits will be available for certain new or innovative technologies that achieve

real-world CO_2 reductions that aren't adequately captured on the city or highway test cycles used to determine compliance with the fleet average standards. Like the air conditioning credits, these credits are independent of the fleet average calculation. Section III.C.4 describes two options for generating these credits: Either using EPA's 5-cycle fuel economy labeling methodology, or if that method fails to capture the CO_2-reducing impact of the technology, the manufacturer could propose and use, with EPA approval, a different analytical approach to determining the credit amount. Like the air conditioning credits above, these credits will have to be determined separately for cars and trucks because of the differing lifetime mileage assumptions between cars and trucks.

Using the 5-cycle approach is relatively straightforward, and because the 5-cycle formulae account for nationwide variations in driving conditions, no additional adjustments to the test results would be necessary. The manufacturer would simply calculate a 5-cycle CO_2 value with the technology installed and operating and compare it with a 5-cycle CO_2 value determined without the technology installed and/or operating. Existing regulations describe how to calculate 5-cycle fuel economy values, and the GHG regulations contain provisions that describe how to calculate 5-cycle CO_2 values (see 40 CFR 600.114–08). The manufacturer will have to design a test program that accounts for vehicle differences if the technology is installed in different vehicle types, and enough data will have to be collected to address data uncertainty issues. Manufacturers seeking to generate off-cycle credits based on a 5-cycle analysis will be required to submit a description of their test program and the results to EPA for approval.

As noted in Section III.C.4, a manufacturer-developed testing, data collection, and analysis program will require additional EPA approval and oversight. EPA received considerable comment from environmental and public interest organizations suggesting that EPA's decisions about which technologies merit off-cycle credit should be open and public. EPA agrees that a public process will help ensure a fair review and alleviate concerns about potential misuse of the off-cycle credit flexibility. Therefore EPA intends to seek public comment on manufacturer proposals for off-cycle credit that do not use the 5-cycle approach to quantify emission reductions. EPA will consider any comments it receives in determining whether and how much credit is appropriate. Manufacturers should submit proposals well in advance of their desired decision date to allow time for these public and EPA reviews.

Once the demonstration of the CO_2 reduction of an off-cycle technology is complete, and the resulting value accounts for variations in driving, climate and other conditions across the country, the two approaches are treated fundamentally the same way and in a way that parallels the approach for determining the air conditioning credits described above. Once a gram per mile value is approved by the EPA, the manufacturer will determine the total credit value by multiplying the gram per mile per vehicle credit by the production volume of vehicles with that technology and approved for use of the credit. This would then be multiplied by the lifetime vehicle miles for cars or trucks, whichever applies, and divided by 1,000,000 to obtain total megagrams of CO_2 credits. These credits would then be added to the manufacturer's total balance for the given model year. Just like the above air conditioning case, an off-cycle technology that is demonstrated to achieve an average CO_2 reduction of 4.4 grams/mile and that is installed in 175,000 cars would generate credits as follows:

$$[4.4 \times 175{,}000 \times 195{,}264] \div 1{,}000{,}000 = 150{,}353 \text{ Mg.}$$

h. End-of-Year Reporting

In general, implementation of the averaging, banking, and trading (ABT) program, including the calculation of credits and deficits, will be accomplished via existing reporting mechanisms. EPA's existing regulations define how manufacturers calculate fleet average miles per gallon for CAFE compliance purposes. Today's action modifies these regulations to also require the parallel calculation of fleet average CO_2 levels for car and light truck compliance categories. These regulations already require an end-of-year report for each model year, submitted to EPA, which details the test results and calculations that determine each manufacturer's CAFE levels. EPA will now require a similar report that includes fleet average CO_2 levels and related information. That can be integrated with the CAFE report at the manufacturer's option. In addition to requiring reporting of the actual fleet average achieved, this end-of-year report will also contain the calculations and data determining the manufacturer's applicable fleet average standard for that model year. As under the existing Tier 2 program, the report will be required to contain the fleet average standard, all values required to calculate the fleet average standard, the actual fleet average CO_2 that was achieved, all values required to calculate the actual fleet average, the number of credits generated or debits incurred, all the values required to calculate the credits or debits, the number of credits bought or sold, and the resulting balance of credits or debits.

Because of the multitude of credit programs that are available under the greenhouse gas program, the end-of-year report will be required to have more data and a more defined and specific structure than the CAFE end-of-year report does today. Although requiring "all the data required" to calculate a given value should be inclusive, the report will contain some requirements specific to certain types of credits. For advanced technology credits that apply to vehicles like electric vehicles and plug-in hybrid electric vehicles, manufacturers will be required to identify the number and type of these vehicles and the effect of these credits on their fleet average. The same will be true for credits due to flexible-fuel and alternative-fuel vehicles, although for 2016 and later flexible-fuel credits manufacturers may also have to provide a demonstration of the actual use of the alternative fuel in-use and the resulting calculations of CO_2 values for such vehicles. For air conditioning leakage credits manufacturers will have to include a summary of their use of such credits that will include which air conditioning systems were subject to such credits, information regarding the vehicle models which were equipped with credit-earning air conditioning systems, the production volume of these air conditioning systems, the leakage score of each air conditioning system generating credits, and the resulting calculation of leakage credits. Air conditioning efficiency reporting will be somewhat more complicated given the phase-in of the efficiency test procedure, and reporting will have to detail compliance with the phase-in as well as the test results and the resulting efficiency credits generated. Similar reporting requirements will also apply to the variety of possible off-cycle credit options, where manufacturers will have to report the applicable technology, the amount of credit per unit, the production volume of the technology, and the total credits from that technology.

Although it is the final end-of-year report, when final production numbers are known, that will determine the degree of compliance and the actual values of any credits being generated by

manufacturers, EPA will expect manufacturers to be prepared to discuss their compliance approach and their potential use of the variety of credit options in pre-certification meetings that EPA routinely has with manufacturers. In addition, and in conjunction with a pre-model year report required under the CAFE program, the manufacturer will be required to submit projections of all of the elements described above, plus any projected credit trading transactions (described below).

Finally, to the extent that there are any credit transactions, the manufacturer will have to detail in the end-of-year report documentation on all credit transactions that the manufacturer has engaged in. Information for each transaction will include: the name of the credit provider, the name of the credit recipient, the date the transfer occurred, the quantity of credits transferred, and the model year in which the credits were earned. The final report is due to EPA within 90 days of the end of the model year, or no later than March 31 in the calendar year after the calendar year named for the model year. For example, the final GHG report for the 2012 model year is due no later than March 31, 2013. Failure by the manufacturer to submit the annual report in the specified time period will be considered to be a violation of section 203(a)(1) of the Clean Air Act.

6. Enforcement

As discussed above in Section III.E.5, manufacturers will report to EPA their fleet average and fleet average standard for a given model year (reporting separately for each of the car and truck averaging sets), the credits or deficits generated in the current year, the balance of credit balances or deficits (taking into account banked credits, deficit carry-forward, etc. see Section III.E.5), and whether they were in compliance with the fleet average standard under the terms of the regulations. EPA will review the annual reports, figures, and calculations submitted by the manufacturer to determine any nonconformance.

Each certificate, required prior to introduction into commerce, will be conditioned upon the manufacturer attaining the CO_2 fleet average standard. If a manufacturer fails to meet this condition and has not generated or purchased enough credits to cover the fleet average exceedance following the three year deficit carry-forward (Section III.B.4, then EPA will review the manufacturer's production for the model year in which the deficit originated and designate which vehicles caused the fleet average standard to be exceeded.

EPA proposed that the vehicles that would be identified as nonconforming would come from the most recent model year, and some comments pointed out that this was inconsistent with how the NLEV and Tier 2 programs were structured. EPA agrees with these comments and is finalizing an enforcement structure that is essentially identical to the one in place for existing programs. EPA would designate as nonconforming those vehicles with the highest emission values first, continuing until a number of vehicles equal to the calculated number of non-complying vehicles as determined above is reached. Those vehicles would be considered to be not covered by the certificates of conformity covering those model types. In a test group where only a portion of vehicles would be deemed nonconforming, EPA would determine the actual nonconforming vehicles by counting backwards from the last vehicle produced in that model type. A manufacturer would be subject to penalties and injunctive orders on an individual vehicle basis for sale of vehicles not covered by a certificate. This is the same general mechanism used for the National LEV and Tier 2 corporate average standards.

Section 205 of the CAA authorizes EPA to assess penalties of up to $37,500 per vehicle for violations of the requirements or prohibitions of this rule.[282] This section of the CAA provides that the agency shall take the following penalty factors into consideration in determining the appropriate penalty for any specific case: the gravity of the violation, the economic benefit or savings (if any) resulting from the violation, the size of the violator's business, the violator's history of compliance with this title, action taken to remedy the violation, the effect of the penalty on the violator's ability to continue in business, and such other matters as justice may require.

Manufacturer comments expressed concern about potential enforcement action for violations of the greenhouse gas standards, and the circumstances under which EPA would impose penalties. Manufacturers also suggested that EPA should adopt a penalty structure similar to the one in place under CAFE.

The CAA specifies different civil penalty provisions for noncompliance than EPCA does, and EPA cannot therefore adopt the CAFE penalty structure. However, EPA recognizes that it may be appropriate, should a manufacturer fail to comply with the NHTSA fuel economy standards as well as the CO_2 standard in a case arising out of the same facts and circumstances, to take into account the civil penalties that NHTSA has assessed for violations of the CAFE standards when determining the appropriate penalty amount for violations of the CO_2 emissions standards. This approach is consistent with EPA's broad discretion to consider "such other matters as justice may require," and will allow EPA to exercise its discretion to prevent injustice and ensure that penalties for violations of the CO_2 rule are assessed in a fair and reasonable manner.

The statutory penalty factor that allows EPA to consider "such other matters as justice may require" vests EPA with broad discretion to reduce the penalty when other adjustment factors prove insufficient or inappropriate to achieve justice.[283] The underlying principle of this penalty factor is to operate as a safety mechanism when necessary to prevent injustice.[284]

In other environmental statutes, Congress has specifically required EPA to consider penalties assessed by other government agencies where violations arise from the same set of facts. For instance, section 311(b)(8) of the Clean Water Act, 33 U.S.C. 1321(b)(8) authorizes EPA to consider any other penalty for the same incident when determining the appropriate Clean Water Act penalty. Likewise, section 113(e) of the CAA authorizes EPA to consider "payment by the violator of penalties previously assessed for the same violation" when assessing penalties for certain violations of Title I of the Act.

7. Prohibited Acts in the CAA

Section 203 of the Clean Air Act describes acts that are prohibited by law. This section and associated regulations apply equally to the greenhouse gas standards as to any other regulated emission. Acts that are prohibited by section 203 of the Clean Air Act include the introduction into commerce or the sale of a vehicle without a certificate of conformity, removing or otherwise defeating emission control equipment, the sale or installation of devices designed to defeat emission controls, and other actions. EPA proposed to include in the

[282] 42 U.S.C. 7524(a), Civil Monetary Penalty Inflation Adjustment, 69 FR 7121 (Feb. 13, 2004) and Civil Monetary Penalty Inflation Adjustment Rule, 73 FR 75340 (Dec. 11, 2008).

[283] *In re Spang & Co.,* 6 E.A.D. 226, 249 (EAB 1995).

[284] *B.J. Carney Industries,* 7 E.A.D. 171, 232, n. 82 (EAB 1997).

regulations a new section that details these prohibited acts. Prior regulations, such as the NLEV program, had included such a section, and although there is no burden associated with the regulations or any specific need to repeat what is in the Clean Air Act, EPA believes that including this language in the regulations provides clarity and improves the ease of use and completeness of the regulations. No comments were received on the proposal, and EPA is finalizing the section on prohibited acts (see 40 CFR 86.1854–12).

8. Other Certification Issues

a. Carryover/Carry Across Certification Test Data

EPA's certification program for vehicles allows manufacturers to carry certification test data over and across certification testing from one model year to the next, when no significant changes to models are made. EPA will also apply this policy to CO_2, N_2O and CH_4 certification test data. A manufacturer may also be eligible to use carryover and carry across data to demonstrate CO_2 fleet average compliance if they have done so for CAFE purposes.

b. Compliance Fees

The CAA allows EPA to collect fees to cover the costs of issuing certificates of conformity for the classes of vehicles and engines covered by this rule. On May 11, 2004, EPA updated its fees regulation based on a study of the costs associated with its motor vehicle and engine compliance program (69 FR 51402). At the time that cost study was conducted the current rulemaking was not considered.

At this time the extent of any added costs to EPA as a result of this rule is not known. EPA will assess its compliance testing and other activities associated with the rule and may amend its fees regulations in the future to include any warranted new costs.

c. Small Entity Exemption

EPA is exempting small entities, and these entities (necessarily) would not be subject to the certification requirements of this rule.

As discussed in Section III.B.8, businesses meeting the Small Business Administration (SBA) criterion of a small business as described in 13 CFR 121.201 would not be subject to the GHG requirements, pending future regulatory action. EPA proposed that such entities instead be required to submit a declaration to EPA containing a detailed written description of how that manufacturer qualifies as a small entity under the provisions of 13 CFR 121.201. EPA has reconsidered the need for this additional submission under the regulations and is deleting it as not necessary. We already have information on the limited number of small entities that we expect would receive the benefits of the exemption, and do not need the proposed regulatory requirement to be able to effectively implement this exemption for those parties who in fact meet its terms. Small entities are currently covered by a number of EPA motor vehicle emission regulations, and they routinely submit information and data on an annual basis as part of their compliance responsibilities.

As discussed in detail in Section III.B.6, small volume manufacturers with annual sales volumes of less than 5,000 vehicles will also be deferred from the CO_2 standards, pending future regulatory action. These manufacturers would still be required to meet N_2O and CH_4 standards, however. To qualify for CO_2 standard deferral, manufacturers would need to submit a declaration to EPA, and would also be required to demonstrate due diligence in having attempted to first secure credits from other manufacturers. This declaration would have to be signed by a chief officer of the company, and would have to be made at least 30 days prior to the introduction into commerce of any vehicles for each model year for which the small volume manufacturer status is requested, but not later than December of the calendar year prior to the model year for which deferral is requested. For example, if a manufacturer will be introducing model year 2012 vehicles in October of 2011, then the small volume manufacturer declaration would be due in September, 2011. If 2012 model year vehicles are not planned for introduction until March, 2012, then the declaration would have to be submitted in December, 2011. Such manufacturers are not automatically exempted from other EPA regulations for light-duty vehicles and light-duty trucks; therefore, absent this annual declaration EPA would assume that each manufacturer was not deferred from compliance with the greenhouse gas standards.

d. Onboard Diagnostics (OBD) and CO_2 Regulations

The light-duty on-board diagnostics (OBD) regulations require manufacturers to detect and identify malfunctions in all monitored emission-related powertrain systems or components.[285] Specifically, the OBD system is required to monitor catalysts, oxygen sensors, engine misfire, evaporative system leaks, and any other emission control systems directly intended to control emissions, such as exhaust gas recirculation (EGR), secondary air, and fuel control systems. The monitoring threshold for all of these systems or components is 1.5 times the applicable standards, which typically include NMHC, CO, NO_X, and PM. EPA did not propose that CO_2 emissions would become one of the applicable standards required to be monitored by the OBD system. EPA did not propose CO_2 become an applicable standard for OBD because it was confident that many of the emission-related systems and components currently monitored would effectively catch any malfunctions related to CO_2 emissions. For example, malfunctions resulting from engine misfire, oxygen sensors, the EGR system, the secondary air system, and the fuel control system would all have an impact on CO_2 emissions. Thus, repairs made to any of these systems or components should also result in an improvement in CO_2 emissions. In addition, EPA did not have data on the feasibility or effectiveness of monitoring various emission systems and components for CO_2 emissions and did not believe that it would be prudent to include CO_2 emissions without such information.

EPA did not address whether N_2O or CH_4 emissions should become applicable standards for OBD monitoring in the proposal. Several manufacturers felt that EPA's silence on this issue implied that EPA was proposing that N_2O and CH_4 emissions become applicable OBD standards. They commented that EPA should not include them as part of OBD. They felt that adding N_2O and CH_4 would significantly increase OBD development burden, without significant benefit, since any malfunctions that increase N_2O and CH_4 would likely be caught by current OBD system designs. EPA agrees with the manufacturer's comments on including N_2O and CH_4 as applicable standards. Therefore, at this time, EPA is not requiring CO_2, N_2O, and CH_4 emissions as one of the applicable standards required for the OBD monitoring threshold. EPA plans to evaluate OBD monitoring technology, with regard to monitoring these GHG emissions-related systems and components, and may choose to propose to include CO_2, N_2O, and CH_4 emissions as part of the OBD requirements in a future regulatory action.

[285] 40 CFR 86.1806–04.

e. Applicability of Current High Altitude Provisions to Greenhouse Gases

Vehicles covered by this rule must meet the CO_2, N_2O and CH_4 standard at altitude. The CAA requires emission standards under section 202 for light-duty vehicles and trucks to apply at all altitudes.[286] EPA does not expect vehicle CO_2, CH_4, or N_2O emissions to be significantly different at high altitudes based on vehicle calibrations commonly used at all altitudes. Therefore, EPA will retain its current high altitude regulations so manufacturers will not normally be required to submit vehicle CO_2 test data for high altitude. Instead, they must submit an engineering evaluation indicating that common calibration approaches will be utilized at high altitude. Any deviation in emission control practices employed only at altitude will need to be included in the auxiliary emission control device (AECD) descriptions submitted by manufacturers at certification. In addition, any AECD specific to high altitude will be required to include emissions data to allow EPA evaluate and quantify any emission impact and validity of the AECD.

f. Applicability of Standards to Aftermarket Conversions

With the exception of the small entity and small volume exemptions, EPA's emission standards, including greenhouse gas standards, will continue to apply as stated in the applicability sections of the relevant regulations. The greenhouse gas standards are being incorporated into 40 CFR part 86, subpart S, which includes exhaust and evaporative emission standards for criteria pollutants. Subpart S includes requirements for new light-duty vehicles, light-duty trucks, medium-duty passenger vehicles, Otto-cycle complete heavy-duty vehicles, and some incomplete light-duty trucks. Subpart S is currently specifically applicable to aftermarket conversion systems, aftermarket conversion installers, and aftermarket conversion certifiers, as those terms are defined in 40 CFR 85.502. EPA expects that some aftermarket conversion companies will qualify for and seek the small entity and/or small volume exemption, but those that do not qualify will be required to meet the applicable emission standards, including the greenhouse gas standards.

[286] *See* CAA 206(f).

g. Geographical Location of Greenhouse Gas Fleet Vehicles

One manufacturer commented that the CAFE sales area location defined by Department of Transportation regulations is different than the EPA sales area location defined by the CAA. DOT regulations require CAFE compliance[287] in the 50 states, the District of Columbia, and Puerto Rico. However, EPA emission certification regulations require emission compliance[288] in the 50 states, the District of Columbia, the Puerto Rico, the Virgin Islands, Guam, American Samoa and the Commonwealth of the Northern Mariana Islands.

The comment stated that EPA has the discretion under the CAA to align the sales area location of production vehicles for the greenhouse gas fleet with the sales area location for the CAFE fleet and recommended that EPA amend the definitions in 40 CFR 86.1803 accordingly. This would exclude from greenhouse gas requirements production vehicles that are introduced into commerce in the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana.

Although EPA has tried to harmonize greenhouse gas and CAFE requirements in this rule to the extent possible, EPA believes that the approach suggested in comment would be contrary to the requirements of the Act. EPA does not believe that the Agency has discretion under the CAA to exclude from greenhouse gas requirements production vehicles introduced into commerce in the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. In addition, this change would introduce an undesirable level of complexity into the certification process and result in confusion due to vehicles intended for commerce in separate geographical locations being covered under a single certificate. For these reasons, EPA will retain the proposed greenhouse gas production vehicle sales area location as defined in the CAA.

[287] DOT regulations at 49 CFR 525.4(a)(5) read "The term *customs territory of the United States* is used as defined in 19 U.S.C. 1202." Section 19 U.S.C. 1202 has been replaced by the Harmonized Tariff Schedule of the United States. The Harmonized Tariff Schedule reads in part that "The term 'customs territory of the United States' * * * includes only the States, the District of Columbia, and Puerto Rico."

[288] Section 216 of the Clean Air Act defines the term commerce to mean "(A) commerce between any place in any State and any place outside thereof; and (B) commerce wholly within the District of Columbia."

Section 302(d) of the Clean Air Act reads "The term 'State' means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa and includes the Commonwealth of the Northern Mariana Islands." In addition, 40 CFR 85.1502(14) regarding the importation of motor vehicles and motor vehicle engines defines the United States to include "the States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, and the U.S. Virgin Islands."

9. Miscellaneous Revisions to Existing Regulations

a. Revisions and Additions to Definitions

EPA has amended its definitions of "engine code," "transmission class," and "transmission configuration" in its vehicle certification regulations (part 86) to conform to the definitions for those terms in its fuel economy regulations (part 600). The exact terms in part 86 are used for reporting purposes and are not used for any compliance purpose (*e.g.,* an engine code will not determine which vehicle is selected for emission testing). However, the terms are used for this purpose in part 600 (*e.g.,* engine codes, transmission class, and transmission configurations are all criteria used to determine which vehicles are to be tested for the purposes of establishing corporate average fuel economy). Since the same vehicles tested to determine corporate average fuel economy will also be tested to determine fleet average CO_2, the same definitions will apply. Thus EPA has amended its part 86 definitions of the above terms to conform to the definitions in part 600.

Two provisions have been amended to bring EPA's fuel economy regulations in Part 600 into conformity with the fleet average CO_2 requirement contained in this rulemaking and with NHTSA's reform truck regulations. First, the definition of "footprint" in this rule is also being added to EPA's part 86 and 600 regulations. This definition is based on the definition promulgated by NHTSA at 49 CFR 523.2. Second, EPA is amending its model year CAFE reporting regulations to include the footprint information necessary for EPA to determine the reformed truck standards and the corporate average fuel economy. This same information is included in this rule for fleet average CO_2 and fuel economy compliance.

b. Addition of Ethanol Fuel Economy Calculation Procedures

EPA has amended part 600 to add calculation procedures for determining the carbon-related exhaust emissions and calculating the fuel economy of vehicles operating on ethanol fuel. Manufacturers have been using these procedures as needed, but the regulatory

language—which specifies how to determine the fuel economy of gasoline, diesel, compressed natural gas, and methanol fueled vehicles—has not previously been updated to specify procedures for vehicles operating on ethanol. Under today's rule EPA is requiring use of a carbon balance approach for ethanol-fueled vehicles that is similar to the way carbon-related exhaust emissions are calculated for vehicles operating on other fuels for the purpose of determining fuel economy and for compliance with the fleet average CO_2 standards. The carbon balance formula is similar to the one in place for methanol, except that ethanol and acetaldehyde emissions must also be measured for ethanol-fueled vehicles. The carbon balance equation for determining fuel economy is as follows, where CWF is the carbon weight fraction of the fuel and CWF_{exHC} is the carbon weight fraction of the exhaust hydrocarbons:

$$mpg = (CWF \times SG \times 3781.8)/((CWF_{exHC} \times HC) + (0.429 \times CO) + (0.273 \times CO_2) + (0.375 \times CH_3OH) + (0.400 \times HCHO) + (0.521 \times C_2H_5OH) + (0.545 \times C_2H_4O)).$$

The equation for determining the total carbon-related exhaust emissions for compliance with the CO_2 fleet average standards is the following, where CWF_{exHC} is the carbon weight fraction of the exhaust hydrocarbons:

$$CO_2\text{-eq} = (CWF_{exHC} \times HC) + (0.429 \times CO) + (0.375 \times CH_3OH) + (0.400 \times HCHO) + (0.521 \times C_2H_5OH) + (0.545 \times C_2H_4O) + CO_2.$$

c. Revision of Electric Vehicle Applicability Provisions

In 1980, EPA issued a rule that provided for the inclusion of electric vehicles in the CAFE program.[289] EPA now believes that certain provisions of the regulations should be updated to reflect the current state of motor vehicle emission and fuel economy regulations. In particular, EPA believes that the exemption of electric vehicles in certain cases from fuel economy labeling and CAFE requirements should be reevaluated and revised.

The 1980 rule created an exemption for electric vehicles from fuel economy labeling in the following cases: (1) If the electric vehicles are produced by a company that produces only electric vehicles; and (2) if the electric vehicles are produced by a company that produces fewer than 10,000 vehicles of all kinds worldwide. EPA believes that this exemption language is no longer appropriate and is deleting it from the affected regulations. First, since 1980 many regulatory provisions have been put in place to address the concerns of small manufacturers and enable them to comply with fuel economy and emission programs with reduced burden. EPA believes that all small volume manufacturers should compete on a fair and level regulatory playing field and that there is no longer a need to treat small volume electric vehicles any differently than small volume manufacturers of other types of vehicles. Current regulations contain streamlined certification procedures for small companies, and because electric vehicles emit no direct pollution there is effectively no certification emission testing burden. For example, the greenhouse gas regulations contain a provision allowing the exemption of certain small entities. Meeting the requirements for fuel economy labeling and CAFE will entail a testing, reporting, and labeling burden, but these burdens are not extraordinary and should be applied equally to all small volume manufacturers, regardless of the fuel that moves their vehicles. EPA has been working with existing electric vehicle manufacturers on fuel economy labeling, and EPA believes it is important for the consumer to have impartial, accurate, and useful label information regarding the energy consumption of these vehicles. Second, EPCA does not provide for an exemption of electric vehicles from NHTSA's CAFE program, and NHTSA regulations regarding the applicability of the CAFE program do not provide an exemption for electric vehicles. Third, the blanket exemption for any manufacturer of only electric vehicles assumed at the time that these companies would all be small, but the exemption language inappropriately did not account for size and would allow large manufacturers to be exempt as well. Finally, because of growth expected in the electric vehicle market in the future, EPA believes that the labeling and CAFE regulations need to be designed to more specifically accommodate electric vehicles and to require that consumers be provided with appropriate information regarding these vehicles. For these reasons EPA has revised 40 CFR Part 600 applicability regulations such that these electric vehicle exemptions are deleted starting with the 2012 model year.

d. Miscellaneous Conforming Regulatory Amendments

EPA has made a number of minor amendments to update the regulations as needed or to ensure that the regulations are consistent with changes discussed in this preamble. For example, for consistency with the ethanol fuel economy calculation procedures discussed above, EPA has amended regulations where necessary to require the collection of emissions of ethanol and acetaldehyde. Other changes are made to applicable sections to remove obsolete regulatory requirements such as phase-ins related to EPA's Tier 2 emission standards program, and still other changes are made to better accommodate electric vehicles in EPA emission control regulations. Not all of these minor amendments are noted in this preamble, thus the reader should carefully evaluate regulatory text to ensure a complete understanding of the regulatory changes being promulgated by EPA.

In the process of amending regulations that vary in applicability by model year, EPA has several approaches that can be taken. The first option is to amend an existing section of the regulations. For example, EPA did this in the final regulations with § 86.111–94. In this case EPA chose to directly amend this section—which applies to 1994 and later model years as indicated by the suffix after the hyphen—but ensure that the model year of applicability of the amendments (2015 and later for N_2O measurement) is stated clearly in the regulatory text. A second option is to create a new section with specific applicability to the 2012 and later model years; *i.e.,* a section number with a "12" following the hyphen. This approach typically involves pulling forward all the language from an earlier model year section, then amending as needed (but it could also involve a wholesale revision and replacement with entirely new language). For example, EPA took this approach with § 86.1809–12. Although only paragraphs (d) and (e) contain revisions pertaining to this greenhouse gas rule, the remainder of the section is "pulled forward" from a prior model year section (in this case, § 86.1809–10) for completeness. Thus paragraphs (a) through (c) are unchanged relative to the prior model year section. Readers should therefore be aware that sections that are indicated as taking effect in the 2012 model year may differ in only subtle ways from the prior model year section being superseded. A third approach (not used in this regulation) is to use the "Reserved. For guidance see * * *" technique. For example, in the § 86.1809–12, rather than bring forward the existing language from paragraphs (a) through (c), EPA could have simply put a statement in the regulations

[289] 45 FR 49256, July 24, 1980.

directing the reader to refer back to § 86.1809–10 for those requirements. This method has been used in the past, but is not being used in this regulation.

10. Warranty, Defect Reporting, and Other Emission-Related Components Provisions

As outlined in the proposal, Section 207(a) of the Clean Air Act (CAA) requires manufacturers to provide a defect warranty that warrants a vehicle is designed to comply with emission standards and will be free from defects that may cause noncompliance over the specified warranty period which is 2 years/24,000 miles (whichever is first) or, for major emission control components, 8 years/80,000 miles. The warranty covers parts which must function properly to assure continued compliance with emission standards. The proposal explained that under the greenhouse gas rule, this coverage would include compliance with the proposed CO_2, CH_4, and N_2O standards. The proposal did not discuss the CAA Section 207(b) performance warranty.

EPA proposed to include air conditioning system components under the CAA section 207(a) emission warranty in cases where manufacturers use air conditioning leakage and efficiency credits to comply with the proposed fleet average CO_2 standards. The warranty period of 2 years/24,000 miles would apply. EPA requested comments as to whether any other parts or components should be designated as "emission related parts" and thus subject to warranty and defect reporting provisions under this rule.

The Alliance of Automobile Manufacturers (Alliance), Toyota and the State of New Jersey provided comments. The State of New Jersey supported EPA's proposal to include motor vehicle air conditioning system components under the emission warranty provisions. Both the Alliance and Toyota commented that emission warranty requirements are not appropriate for mobile air conditioners because (1) in-use performance of the air conditioning system at levels comparable to a new vehicle is not needed to achieve the emission levels targeted by EPA and (2) manufacturer general warranties already cover air conditioning systems and are typically longer than the two-year/24,000 mile proposed emissions warranty period.

Regarding direct emissions (refrigerant leakage), the Alliance and Toyota commented that warranty requirements are unnecessary for refrigerants with a global warming potential (GWP) below 150 because the environmental impact is negligible even if refrigerants are released from the system. Regarding indirect emissions (fuel consumed to power the air conditioning system), the Alliance commented that EPA should not require warranty coverage of the air conditioning system because in the vast majority of air conditioning failure modes, the system stops cooling and ceases operation—either because the critical moving parts stop moving or because the system is switched off—thereby actually reducing the indirect CO_2 emissions.

EPA received no comments regarding (1) other parts or components which should be designated as "emission related parts" subject to warranty requirements, (2) defect reporting requirements, or (3) other requirements associated with warranty and defect reporting requirements (*e.g.,* voluntary emission-related recall reporting requirements, performance warranty requirements, voluntary aftermarket parts certification requirements or tampering requirements.

Defect Warranty. EPA's current policy for defect warranty requirements is provided in Section 207 of the Act. There are currently no defect warranty regulations. Congress provided under Section 207(a) and (b) of the CAA that emission-related components shall be covered under the 207(a) defect warranty and the 207(b) performance warranty for the warranty period outlined in section 207(i) of the CAA. For example, section 207(a) reads in part:

"* * * the manufacturer of each new motor vehicle and new motor vehicle engine shall warrant to the ultimate purchaser and each subsequent purchaser that such vehicle or engine is (A) designed, built and equipped so as to conform at the time of sale with applicable regulations under section 202, and (B) free from defects in materials and workmanship which cause such vehicle or engine to fail to conform with applicable regulations for its useful life (as determined under sec. 202(d)). In the case of vehicles and engines manufactured in the model year 1995 and thereafter such warranty shall require that the vehicle or engine is free from any such defects for the warranty period provided under subsection (i)."

Section 207(i) reads in part:

"(i) Warranty Period.—

(1) In General.—For purposes of subsection (a)(1) and subsection (b), the warranty period, effective with respect to new light-duty trucks and new light-duty vehicles and engines, manufactured in model year 1995 and thereafter, shall be the first 2 years or 24,000 miles of use (whichever first occurs), except as provided in paragraph (2). For the purposes of subsection (a)(1) and subsection (b), for other vehicles and engines the warranty period shall be the period established by the Administrator by regulation (promulgated prior to the enactment of the Clean Air Act Amendments of 1990) for such purposes unless the Administrator subsequently modifies such regulation.

(2) In the case of a specified major emission control component, the warranty period for new light-duty trucks and new light-duty vehicles manufactured in the model year 1995 and thereafter for purposes of subsection (a)(1) and subsection (b) shall be 8 years or 80,000 miles of use (whichever first occurs). As used in this paragraph, the term 'specified major emission control component' means only a catalytic converter, an electronic emissions control unit, and an onboard emissions diagnostic device, except that the Administrator may designate any other pollution control device or component as a specified major emission control component if—(A) the device or component was not in general use on vehicles and engines manufactured prior to the model year 1990; and (B) the Administrator determines that the retail cost (exclusive of installation costs) of such device or component exceeds $200 (in 1989 dollars, adjusted for inflation or deflation) as calculated by the Administrator at the time of such determination * * *"

Thus, the CAA provides the basis of the warranty requirements contained in today's final rule, which will cover "emission related parts" necessary to provide compliance with CO_2, CH_4, and N_2O standards. Emission related parts would include those parts, systems, components and software installed for the specific purpose of controlling emissions or those components, systems, or elements of design which must function properly to assure continued vehicle emission compliance, including compliance with CO_2, CH_4, and N_2O standards; (similar to the current definition of "emission related parts" provided in 40 CFR 85.2102(14) for performance warranty requirements). For example, today's action will extend defect warranty requirements to emission-related components on advanced technology vehicles such as cylinder deactivation components or batteries used in hybrid-electric vehicles.

Under today's rule, EPA will extend the defect warranty requirement to emission-related components necessary to meet CO_2, CH_4, and N_2O standards, including emission-related components which are used to obtain optional credits for (1) certification of advanced technology vehicles, (2) credits for reduction of air conditioning refrigerant leakage, (3) credits for improving air conditioning system efficiency, (4) credits for off-cycle CO_2 reducing technologies, and (5) optional early credits for 2009–2011 model year vehicles outlined in the provisions of 40

CFR 86.1867–12 (which are required to be reported to EPA after the 2011 model year).

Regarding the comments received by the Alliance and Toyota, that warranty coverage is not needed for air conditioning components, EPA believes that the Clean Air Act requires warranty coverage on components used to demonstrate compliance with the emission standards, including components used in the optional credit programs for reduction of air conditioning refrigerant leakage and air conditioning efficiency improvements. EPA does not have the discretion to forgo warranty requirements by regulation in today's final rule. Thus, the Agency is adopting defect warranty requirements for air conditioning components as proposed.

Effective date of Warranty for Components used to Obtain Early Credits. Regarding the defect warranty for emission-related components used to obtain optional early credits for 2009–2011 vehicles, the defect warranty should provide coverage for these components at the time the early credits report is submitted to EPA (*e.g.,* no later than 90 days after the end of the 2011 model year). For example, the defect warranty for early credit components does not have to apply retroactively (before the manufacturer declares the credits to EPA). The Agency believes this approach is reasonable, because (1) manufacturer's early credit plans may not be finalized until after vehicles have been produced; (2) manufacturers will be provided satisfactory lead time to provide warranty requirements to customers; and (3) the manufacturer's basic (bumper-to-bumper) warranty for air conditioning and other early credit components are typically longer than the two-year/24,000 mile proposed warranty period which will be applicable to most early credit components.

Performance Warranty. EPA did not propose any changes to the current performance warranty requirements, because the performance warranty preconditions outlined in section 207(b) of the CAA have not been satisfied. For example, section 207(b) of the CAA comes into play if EPA issues performance warranty short test regulations and determines that there are inspection facilities available in the field to determine when vehicles do not comply with greenhouse gas emission standards. Once EPA issues performance warranty short test regulations, then the CAA performance warranty provisions require the manufacturer to pay for emission-related repairs if a vehicle is properly maintained and used, and fails the short test and is required to repair the vehicle. Currently the provisions of 85.2207 and 85.2222 provide performance warranty short test (commonly called an inspection and maintenance or I/M test). The provisions of 85.2207 and 85.2222 provide an I/M test procedure and failure criteria based on an inspection of the onboard diagnostic (OBD) system of the vehicle. The OBD inspection procedure in 85.2222 is currently used in most areas of the country where I/M tests are required. For example, a vehicle fails the OBD test procedure outlined in 85.2222 if the vehicle's MIL is commanded to be "on" during the I/M test procedure.

Although most areas of the country which require I/M testing use the OBD test procedure outlined in 40 CFR 85.2207 and 85.2222, the NPRM did not propose that the OBD system would be required to monitor CO_2, CH_4 or N_2O emission performance, ref 74 FR 49574 and 74 FR 49755. Therefore, the performance warranty preconditions in 201(b) of the CAA are not currently in effect for greenhouse gas CO_2 emissions. The performance warranty continues to apply for criteria pollutants but not for greenhouse emissions.

Defect Reporting and Voluntary Emission-related Recall Reporting Requirements. EPA did not propose any changes to the current defect reporting and voluntary emission-related recall reporting requirements outlined in the provisions of 40 CFR 85.1901–1909. Although EPA requested comments, we did not receive any comments on defect reporting and voluntary emission-related recall reporting requirements. Current regulations require manufacturers to submit a defect report to EPA whenever an emission-related defect exists in 25 or more in-use vehicles or engines of the same model year. The defect report is required to be submitted to EPA within 15 working days of the time the manufacturer becomes aware of a defect that affects 25 or more vehicles. Current regulations require manufacturers to submit to EPA voluntary emission-related recall reports within 15 working days of the date when owner notification begins.

Similar to the performance warranty requirements outlined above, the Agency believes that as proposed, defect reporting and voluntary emission-related recall reporting requirements would apply to emission-related components necessary to meet CO_2, CH_4, and N_2O standards for the useful life of the vehicle, including emission-related components that are used to obtain optional credits for (1) certification of advanced technology vehicles, (2) credits for reduction of air conditioning refrigerant leakage, (3) credits for improving air conditioning system efficiency, and (4) credits for off-cycle CO_2 reducing technologies, and (5) optional early credits for 2009–2011 model year vehicles outlined in the provisions of 40 CFR 86.1867–12 (which are required to be reported to EPA after the 2011 model year). For early credit components, defect reporting requirements and voluntary emission-related recall reporting requirements become effective at the time the early credits report is submitted to EPA (*e.g.,* no later than 90 days after the end of the 2011 model year).

The final rule includes a minor clarification to the provisions of 40 CFR 85.1902 (b) and (d) to clarify that beginning with the 2012 model year, manufacturers are required to report emission-related defects and voluntary emission recalls to EPA, including emission-related defects and voluntary emission recalls related to greenhouse gas emissions (CH_4, N_2O and CO_2).

11. Light Duty Vehicles and Fuel Economy Labeling

American consumers need accurate and meaningful information about the environmental and fuel economy performance of new light duty vehicles. EPA believes it is important that the fuel-economy label affixed to the new vehicles provide consumers with the critical information they need to make smart purchase decisions, especially in light of the expected increase in market share of electric and other advanced technology vehicles. Consumers may need new and different information than today's vehicle labels provide in order to help them understand the energy use and associated cost of owning these electric and advanced technology vehicles.

Therefore, in proposing this greenhouse gas action, EPA sought comment on issues surrounding consumer vehicle labeling in general, and labeling of advanced technology vehicles in particular. EPA specifically asked for input as to whether today's miles per gallon fuel economy metric provides adequate information to consumers.

EPA received considerable public input in response to the request for comment in the proposal. Since the greenhouse gas rule was proposed in September, 2009, EPA has initiated a separate rulemaking to explore in detail the information displayed on the fuel economy label and the methodology for deriving that information. The purpose of the vehicle labeling rulemaking is to ensure that American consumers

continue to have the most accurate, meaningful, and useful information available to them when purchasing new vehicles, and that the information is presented to them in clear and understandable terms.

EPA will consider all vehicle labeling comments received in response to the greenhouse gas proposal in its development of the new labeling rule in coming months. We encourage the interested public to stay engaged and continue to provide input on this issue in the context of the vehicle labeling rulemaking.

F. How will this final rule reduce GHG emissions and their associated effects?

This action is an important step towards curbing steady growth of GHG emissions from cars and light trucks. In the absence of control, GHG emissions worldwide and in the U.S. are projected to continue steady growth. Table III.F–1 shows emissions of CO_2, methane, nitrous oxide and air conditioning refrigerants on a CO_2-equivalent basis for calendar years 2010, 2020, 2030, 2040 and 2050. As shown below, U.S. GHGs are estimated to make up roughly 17 percent of total worldwide emissions in 2010, and the contribution of direct emissions from cars and light-trucks to this U.S. share is growing over time, reaching an estimated 19 percent of U.S. emissions by 2030 in the absence of control. As discussed later in this section, this steady rise in GHG emissions is associated with numerous adverse impacts on human health, food and agriculture, air quality, and water and forestry resources.

TABLE III.F–1—REFERENCE CASE GHG EMISSIONS BY CALENDAR YEAR

[$MMTCO_2eq$]

	2010	2020	2030	2040	2050
All Sectors (Worldwide) [a]	41,016	48,059	52,870	56,940	60,209
All Sectors (U.S. Only) [a]	7,118	7,390	7,765	8,101	8,379
U.S. Cars/Light Truck Only [b]	1,243	1,293	1,449	1,769	2,219

[a] ADAGE model projections, U.S. EPA.[290]
[b] MOVES2010 (2010), OMEGA Model (2020–50) U.S. EPA. See RIA Chapter 5.3 for modeling details.

EPA's GHG rule will result in significant reductions as newer, cleaner vehicles come into the fleet, and the rule is estimated to have a measurable impact on world global temperatures. As discussed in Section I, this GHG rule is part of a joint National Program such that a large majority of the projected benefits would be achieved jointly with NHTSA's CAFE standards, which are described in detail in Section IV. EPA estimates the reductions attributable to the GHG program over time assuming the model year 2016 standards continue indefinitely post-2016,[291] compared to a reference scenario in which the 2011 model year fuel economy standards continue beyond 2011.

Using this approach EPA estimates these standards would cut annual fleetwide car and light truck tailpipe CO_2-eq emissions by 21 percent by 2030, when 90 percent of car and light truck miles will be travelled by vehicles meeting the new standards. Roughly 20 percent of these reductions are due to "upstream" emission reductions from gasoline extraction, production and distribution processes as a result of reduced gasoline demand associated with this rule. Some of the overall emission reductions also come from projected improvements in the efficiency of vehicle air conditioning systems, which will substantially reduce direct emissions of HFCs, one of the most potent greenhouse gases, as well as indirect emissions of tailpipe CO_2 emissions attributable to reduced engine load from air conditioning. In total, EPA estimates that compared to a baseline of indefinite 2011 model year standards, net GHG emission reductions from the program would be 307 million metric tons CO_2-equivalent ($MMTCO_2eq$) annually by 2030, which represents a reduction of 4 percent of total U.S. GHG emissions and 0.6 percent of total worldwide GHG emissions projected in that year. This estimate accounts for all upstream fuel production and distribution emission reductions, vehicle tailpipe emission reductions including air conditioning benefits, as well as increased vehicle miles travelled (VMT) due to the "rebound" effect discussed in Section III.H. EPA estimates this would be the equivalent of removing approximately 50 million cars and light trucks from the road in this timeframe.[292]

EPA projects the total reduction of the program over the full life of model year 2012–2016 vehicles to be about 960 $MMTCO_2eq$, with fuel savings of 78 billion gallons (1.8 billion barrels) of gasoline over the life of these vehicles, assuming that some manufacturers take advantage of low-cost HFC reduction strategies to help meet these standards.

The impacts on global mean temperature and global mean sea level rise resulting from these emission reductions are discussed in Section III.F.3.

1. Impact on GHG Emissions

This action will reduce GHG emissions emitted directly from vehicles due to reduced fuel use and more efficient air conditioning systems. In addition to these "downstream" emissions, reducing CO_2 emissions translates directly to reductions in the emissions associated with the processes involved in getting petroleum to the pump, including the extraction and transportation of crude oil, and the production and distribution of finished gasoline (termed "upstream" emissions). Reductions from tailpipe GHG standards grow over time as the fleet turns over to vehicles subject to the standards, meaning the benefit of the program will continue as long as the oldest vehicles in the fleet are replaced by newer, lower CO_2 emitting vehicles.

EPA is not projecting any reductions in tailpipe CH_4 or N_2O emissions as a result of the emission caps set forth in this rule, which are meant to prevent emission backsliding and to bring diesel vehicles equipped with advanced technology aftertreatment, and other advanced technology vehicles such as lean-burn gasoline vehicles, into

[290] U.S. EPA (2009). "EPA Analysis of the American Clean Energy and Security Act of 2009: H.R. 2454 in the 111th Congress." U.S. Environmental Protection Agency, Washington, DC USA (*http://www.epa.gov/climatechange/economics/economicanalyses.html*). ADAGE model projections of worldwide and U.S. totals include EISA, and are provided for context.

[291] This analysis does not include the EISA requirement for 35 MPG through 2020 or California's Pavley 1 GHG standards. The standards are intended to supersede these requirements, and the baseline case for comparison are the emissions that would result without further action above the currently promulgated fuel economy standards.

[292] Estimated using MOVES2010, the average vehicle in the light duty fleet emitted 5.1 tons of CO_2 during calendar year 2008.

alignment with current gasoline vehicle emissions.[293]

No substantive comments were received on the emissions modeling methods or on the greenhouse gas inventories presented in the proposal. These analyses are updated here to include model revisions and more recent economic analysis, including revised estimates of future vehicle sales, fuel prices, and vehicle miles traveled. The primary source for these data is the AEO 2010 preliminary release.[294] For more details, please see the TSD and RIA Chapter 5.

As detailed in the RIA, EPA estimated calendar year tailpipe CO_2 reductions based on pre- and post-control CO_2 gram per mile levels from EPA's OMEGA model and assumed to continue indefinitely into the future, coupled with VMT projections derived from AEO 2010 Early Release. These estimates reflect the real-world CO_2 emissions reductions projected for the entire U.S. vehicle fleet in a specified calendar year, including the projected effect of air conditioning credits, the TLAAS program and FFV credits. EPA also estimated full lifetime reductions for model years 2012–2016 using pre- and post-control CO_2 levels projected by the OMEGA model, coupled with projected vehicle sales and lifetime mileage estimates. These estimates reflect the real-world CO_2 emissions reductions projected for model years 2012 through 2016 vehicles over their entire life.

This rule allows manufacturers to earn credits for improved vehicle air conditioning efficiency. Since these improvements are relatively low cost, EPA projects that manufacturers will take advantage of this flexibility, leading to reductions from emissions associated with vehicle air conditioning systems. As explained above, these reductions will come from both direct emissions of air conditioning refrigerant over the life of the vehicle and tailpipe CO_2 emissions produced by the increased load of the A/C system on the engine. In particular, EPA estimates that direct emissions of HFCs, one of the most potent greenhouse gases, would be reduced 50 percent from light-duty vehicles when the fleet has turned over to more efficient vehicles. The fuel savings derived from lower tailpipe CO_2 would also lead to reductions in upstream emissions. Our estimated reductions from the A/C credits program are based on our analysis of how manufacturers are expected to take advantage of this credit opportunity in complying with the CO_2 fleetwide average tailpipe standards.

Upstream emission reductions associated with the production and distribution of fuel were estimated using emission factors from DOE's GREET1.8 model, with some modifications as detailed in Chapter 5 of the RIA. These estimates include both international and domestic emission reductions, since reductions in foreign exports of finished gasoline and/or crude would make up a significant share of the fuel savings resulting from the GHG standards. Thus, significant portions of the upstream GHG emission reductions will occur outside of the U.S.; a breakdown of projected international versus domestic reductions is included in the RIA.

a. Calendar Year Reductions for Future Years

Table III.F.1–1 shows reductions estimated from these GHG standards assuming a pre-control case of 2011 MY standards continuing indefinitely beyond 2011, and a post-control case in which 2016 MY GHG standards continue indefinitely beyond 2016.[295] These reductions are broken down by upstream and downstream components, including air conditioning improvements, and also account for the offset from a 10 percent VMT "rebound" effect as discussed in Section III.H. Including the reductions from upstream emissions, total reductions are estimated to reach 307 $MMTCO_2eq$ annually by 2030 (a 21 percent reduction in U.S. car and light truck emissions), and grow to over 500 $MMTCO_2eq$ in 2050 as cleaner vehicles continue to come into the fleet (a 23 percent reduction in U.S. car and light truck emissions).

TABLE III.F.1–1—PROJECTED GHG REDUCTIONS

[$MMTCO_2eq$ per year]

	Calendar year			
	2020	2030	2040	2050
Net Reduction *	156.4	307.0	401.5	505.9
Net CO_2	*139.1*	*273.3*	*360.4*	*458.7*
Net other GHG	*17.3*	*33.7*	*41.1*	*47.2*
Downstream Reduction	125.2	245.7	320.7	403.0
CO_2 (excluding A/C)	*101.2*	*199.5*	*263.2*	*335.1*
A/C—indirect CO_2	*10.6*	*20.2*	*26.5*	*33.8*
A/C—direct HFCs	*13.3*	*26.0*	*30.9*	*34.2*
CH_4 (rebound effect)	*0.0*	*0.0*	*0.0*	*0.0*
N_2O (rebound effect)	*0.0*	*−0.1*	*−0.1*	*−0.1*
Upstream Reduction	31.2	61.3	80.8	102.9
CO_2	*27.2*	*53.5*	*70.6*	*89.9*
CH_4	*3.9*	*7.6*	*10.0*	*12.7*
N_4O	*0.1*	*0.3*	*0.3*	*0.4*
Percent reduction relative to U.S. reference (cars + light trucks)	12.1%	21.2%	22.7%	22.8%
Percent reduction relative to U.S. reference (all sectors)	2.1%	4.0%	5.0%	6.0%
Percent reduction relative to worldwide reference	0.3%	0.6%	0.7%	0.8%

* Includes impacts of 10% VMT rebound rate presented in Table III.F.1–3.

[293] EPA is adopting a compliance option whereby manufacturers can comply with a CO_2 equivalent standard in lieu of meeting the CH_4 and N_2O standards. This should have no effect on the estimated GHG reductions attributable to the rule since a condition of meeting that alternative standard is that the fleetwide CO_2 target remains in place.

[294] Energy Information Administration. Annual Energy Outlook 2010 Early Release. *http://www.eia.doe.gov/oiaf/aeo/.*

[295] Legally, the 2011 CAFE standards only apply to the 2011 model year and no standards apply to future model years. However, we do not believe that it would be appropriate to assume that no CAFE standards would apply beyond the 2011 model year when projecting the impacts of this rule.

b. Lifetime Reductions for 2012–2016 Model Years

EPA also analyzed the emission reductions over the full life of the 2012–2016 model year cars and trucks affected by this program.[296] These results, including both upstream and downstream GHG contributions, are presented in Table III.F.1–2, showing lifetime reductions of about 960 $MMTCO_2eq$, with fuel savings of 78 billion gallons (1.8 billion barrels) of gasoline.

TABLE III.F.1–2—PROJECTED NET GHG REDUCTIONS

[$MMTCO_2eq$ per year]

Model year	Lifetime GHG reduction (MMT CO_2 EQ)	Lifetime Fuel savings (billion gallons)
2012	88.9	7.3
2013	130.2	10.5
2014	174.2	13.9
2015	244.2	19.5
2016	324.6	26.5
Total Program Benefit	962.0	77.7

c. Impacts of VMT Rebound Effect

As noted above and discussed more fully in Section III.H., the effect of fuel cost on VMT ("rebound") was accounted for in our assessment of economic and environmental impacts of this rule. A 10 percent rebound case was used for this analysis, meaning that VMT for affected model years is modeled as increasing by 10 percent as much as the increase in fuel economy; *i.e.,* a 10 percent increase in fuel economy would yield a 1.0 percent increase in VMT. Results are shown in Table III.F.1–3; using the 10 percent rebound rate results in an overall emission increase of 25.0 $MMTCO_2eq$ annually in 2030 (this increase is accounted for in the reductions presented in Tables III.F.1–1 and III.F.1–2). Our estimated changes in CH_4 or N_2O emissions as a result of these vehicle GHG standards are attributed solely to this rebound effect.

TABLE III.F.1–3—GHG IMPACT OF 10% VMT REBOUND [a]

[$MMTCO_2eq$ per year]

	2020	2030	2040	2050
Total GHG Increase	13.0	25.0	32.9	41.9
Tailpipe & Indirect A/C CO_2	*10.2*	*19.6*	*25.8*	*32.8*
Upstream GHGs [b]	*2.8*	*5.4*	*7.1*	*9.1*
Tailpipe CH_4	*0.0*	*0.0*	*0.0*	*0.0*
Tailpipe N_2O	*0.0*	*0.1*	*0.1*	*0.1*

[a] These impacts are included in the reductions shown in Table III.F.1–1 and III.F.1–2.

[b] Upstream rebound impact calculated as upstream total CO_2 effect times ratio of downstream tailpipe rebound CO_2 effect to downstream tailpipe total CO_2 effect.

d. Analysis of Alternatives

EPA analyzed two alternative scenarios, including 4% and 6% annual increases in GHG emission standards. In addition to this annual increase, EPA assumed that manufacturers would use air conditioning improvements in identical penetrations as in the primary scenario. Under these assumptions, EPA expects achieved fleetwide average emission levels of 253 g/mile CO_2eq (4%), and 230 g/mile CO_2eq (6%) in 2016.

As in the primary scenario, EPA assumed that the fleet complied with the standards. For full details on modeling assumptions, please refer to RIA Chapter 5. EPA's assessment of these alternative standards, including our response to public comments, is discussed in Section III.D.

TABLE III.F.1–4—CALENDAR YEAR IMPACTS OF ALTERNATIVE SCENARIOS

	Scenario	Calendar year			
		CY 2020	CY 2030	CY 2040	CY 2050
Total GHG Reductions (MMT CO_2 eq)	Primary	−156.4	−307.0	−401.5	−505.8
	4%	−141.9	−286.2	−375.4	−472.9
	6%	−202.6	−403.4	−529.3	−668.7
Fuel Savings (Billion Gallons Gasoline Equivalent)	Primary	−12.6	−24.7	−32.6	−41.5
	4%	−11.3	−22.9	−30.3	−38.6
	6%	−16.7	−33.2	−43.9	−55.9

[296] As detailed in the RIA Chapter 5 and TSD Chapter 4, for this analysis the full life of the vehicle is represented by average lifetime mileages for cars (195,000 miles) and trucks (226,000 miles) averaged over calendar years 2012 through 2030, a function of how far vehicles drive per year and scrappage rates.

TABLE III.F.1–5—MODEL YEAR IMPACTS OF ALTERNATIVE SCENARIOS

	Scenario	Model year lifetime					
		MY 2012	MY 2013	MY 2014	MY 2015	MY 2016	Total
Total GHG Reductions (MMT CO_2 eq)	Primary	−88.8	−130.2	−174.2	−244.2	−324.6	−962.0
	4%	−39.9	−96.6	−155.4	−226.5	−303.6	−822.0
	6%	−61.7	−146.5	−237.0	−332.2	−427.6	−1,204.9
Fuel Savings (Billion Gallons Gasoline Equivalent).	Primary	−7.3	−10.5	−13.9	−19.5	−26.5	−77.7
	4%	−2.9	−7.1	−12.2	−18.0	−24.6	−64.8
	6%	−4.9	−12.0	−19.4	−27.3	−35.6	−99.1

2. Overview of Climate Change Impacts From GHG Emissions

Once emitted, GHGs that are the subject of this regulation can remain in the atmosphere for decades to centuries, meaning that (1) their concentrations become well-mixed throughout the global atmosphere regardless of emission origin, and (2) their effects on climate are long lasting. GHG emissions come mainly from the combustion of fossil fuels (coal, oil, and gas), with additional contributions from the clearing of forests and agricultural activities. The transportation sector represents a significant portion, 28%, of U.S. GHG emissions.[297]

This section provides a summary of observed and projected changes in GHG emissions and associated climate change impacts. The source document for the section below is the Technical Support Document (TSD)[298] for EPA's Endangerment and Cause or Contribute Findings Under the Clean Air Act.[299] Below is the Executive Summary of the TSD which provides technical support for the endangerment and cause or contribute analyses concerning GHG emissions under section 202(a) of the Clean Air Act. The TSD reviews observed and projected changes in climate based on current and projected atmospheric GHG concentrations and emissions, as well as the related impacts and risks from climate change that are projected in the absence of GHG mitigation actions, including this action and other U.S. and global actions. The TSD was updated and revised based on expert technical review and public comment as part of EPA's rulemaking process for the final Endangerment Findings. The key findings synthesized here and the information throughout the TSD are primarily drawn from the assessment reports of the Intergovernmental Panel on Climate Change (IPCC), the U.S. Climate Change Science Program (CCSP), the U.S. Global Change Research Program (USGCRP), and the National Research Council (NRC).[300]

a. Observed Trends in Greenhouse Gas Emissions and Concentrations

The primary long-lived GHGs directly emitted by human activities include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Greenhouse gases have a warming effect by trapping heat in the atmosphere that would otherwise escape to space. In 2007, U.S. GHG emissions were 7,150 teragrams[301] of CO_2 equivalent[302] ($TgCO_2eq$). The dominant gas emitted is CO_2, mostly from fossil fuel combustion. Methane is the second largest component of U.S. emissions, followed by N_2O and the fluorinated gases (HFCs, PFCs, and SF_6). Electricity generation is the largest emitting sector (34% of total U.S. GHG emissions), followed by transportation (28%) and industry (19%).

Transportation sources under Section 202(a)[303] of the Clean Air Act (passenger cars, light duty trucks, other trucks and buses, motorcycles, and passenger cooling) emitted 1,649 $TgCO_2eq$ in 2007, representing 23% of total U.S. GHG emissions. U.S. transportation sources under Section 202(a) made up 4.3% of total global GHG emissions in 2005,[304] which, in addition to the United States as a whole, ranked only behind total GHG emissions from China, Russia, and India but ahead of Japan, Brazil, Germany, and the rest of the world's countries. In 2005, total U.S. GHG emissions were responsible for 18% of global emissions, ranking only behind China, which was responsible for 19% of global GHG emissions. The scope of this action focuses on GHG emissions under Section 202(a) from passenger cars and light duty trucks source categories (see Section III.F.1).

The global atmospheric CO_2 concentration has increased about 38% from pre-industrial levels to 2009, and almost all of the increase is due to anthropogenic emissions. The global atmospheric concentration of CH_4 has increased by 149% since pre-industrial levels (through 2007); and the N_2O concentration has increased by 23% (through 2007). The observed concentration increase in these gases can also be attributed primarily to anthropogenic emissions. The industrial fluorinated gases, HFCs, PFCs, and SF_6, have relatively low atmospheric concentrations but the total radiative forcing due to these gases is increasing rapidly; these gases are almost entirely anthropogenic in origin.

Historic data show that current atmospheric concentrations of the two most important directly emitted, long-lived GHGs (CO_2 and CH_4) are well above the natural range of atmospheric concentrations compared to at least the last 650,000 years. Atmospheric GHG concentrations have been increasing because anthropogenic emissions have been outpacing the rate at which GHGs are removed from the atmosphere by

[297] U.S. EPA (2009) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2007.* EPA–430–R–09–004, Washington, DC.

[298] "Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act." Docket: EPA–HQ–OAR–2009–0472–11292.

[299] *See* 74 FR 66496 (Dec. 15, 2009).

[300] For a complete list of core references from IPCC, USGCRP/CCSP, NRC and others relied upon for development of the TSD for EPA's Endangerment and Cause or Contribute Findings *see* section 1(b), specifically, Table 1.1 of the TSD.

[301] One teragram (Tg) = 1 million metric tons. 1 metric ton = 1,000 kilograms = 1.102 short tons = 2,205 pounds.

[302] Long-lived GHGs are compared and summed together on a CO_2-equivalent basis by multiplying each gas by its global warming potential (GWP), as estimated by IPCC. In accordance with United Nations Framework Convention on Climate Change (UNFCCC) reporting procedures, the U.S. quantifies GHG emissions using the 100-year timeframe values for GWPs established in the IPCC Second Assessment Report.

[303] Source categories under Section 202(a) of the Clean Air Act are a subset of source categories considered in the transportation sector and do not include emissions from non-highway sources such as boats, rail, aircraft, agricultural equipment, construction/mining equipment, and other off-road equipment.

[304] More recent emission data are available for the United States and other individual countries, but 2005 is the most recent year for which data for all countries and all gases are available.

natural processes over timescales of decades to centuries.

b. Observed Effects Associated With Global Elevated Concentrations of GHGs

Current ambient air concentrations of CO_2 and other GHGs remain well below published exposure thresholds for any direct adverse health effects, such as respiratory or toxic effects.

The global average net effect of the increase in atmospheric GHG concentrations, plus other human activities (*e.g.,* land-use change and aerosol emissions), on the global energy balance since 1750 has been one of warming. This total net heating effect, referred to as forcing, is estimated to be +1.6 (+0.6 to +2.4) watts per square meter (W/m^2), with much of the range surrounding this estimate due to uncertainties about the cooling and warming effects of aerosols. However, as aerosol forcing has more regional variability than the well-mixed, long-lived GHGs, the global average might not capture some regional effects. The combined radiative forcing due to the cumulative (*i.e.,* 1750 to 2005) increase in atmospheric concentrations of CO_2, CH_4, and N_2O is estimated to be +2.30 (+2.07 to +2.53) W/m^2. The rate of increase in positive radiative forcing due to these three GHGs during the industrial era is very likely to have been unprecedented in more than 10,000 years.

Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. Global mean surface temperatures have risen by 1.3 ± 0.32 °F (0.74 °C ± 0.18 °C) over the last 100 years. Eight of the 10 warmest years on record have occurred since 2001. Global mean surface temperature was higher during the last few decades of the 20th century than during any comparable period during the preceding four centuries.

Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations. Climate model simulations suggest natural forcing alone (*i.e.,* changes in solar irradiance) cannot explain the observed warming.

U.S. temperatures also warmed during the 20th and into the 21st century; temperatures are now approximately 1.3 °F (0.7 °C) warmer than at the start of the 20th century, with an increased rate of warming over the past 30 years. Both the IPCC [305] and the CCSP reports attributed recent North American warming to elevated GHG concentrations. In the CCSP (2008) report,[306] the authors find that for North America, "more than half of this warming [for the period 1951–2006] is likely the result of human-caused greenhouse gas forcing of climate change."

Observations show that changes are occurring in the amount, intensity, frequency and type of precipitation. Over the contiguous United States, total annual precipitation increased by 6.1% from 1901 to 2008. It is likely that there have been increases in the number of heavy precipitation events within many land regions, even in those where there has been a reduction in total precipitation amount, consistent with a warming climate.

There is strong evidence that global sea level gradually rose in the 20th century and is currently rising at an increased rate. It is not clear whether the increasing rate of sea level rise is a reflection of short-term variability or an increase in the longer-term trend. Nearly all of the Atlantic Ocean shows sea level rise during the last 50 years with the rate of rise reaching a maximum (over 2 millimeters [mm] per year) in a band along the U.S. east coast running east-northeast.

Satellite data since 1979 show that annual average Arctic sea ice extent has shrunk by 4.1% per decade. The size and speed of recent Arctic summer sea ice loss is highly anomalous relative to the previous few thousands of years.

Widespread changes in extreme temperatures have been observed in the last 50 years across all world regions, including the United States. Cold days, cold nights, and frost have become less frequent, while hot days, hot nights, and heat waves have become more frequent.

Observational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases. However, directly attributing specific regional changes in climate to emissions of GHGs from human activities is difficult, especially for precipitation.

Ocean CO_2 uptake has lowered the average ocean pH (increased acidity) level by approximately 0.1 since 1750. Consequences for marine ecosystems can include reduced calcification by shell-forming organisms, and in the longer term, the dissolution of carbonate sediments.

Observations show that climate change is currently affecting U.S. physical and biological systems in significant ways. The consistency of these observed changes in physical and biological systems and the observed significant warming likely cannot be explained entirely due to natural variability or other confounding non-climate factors.

c. Projections of Future Climate Change With Continued Increases in Elevated GHG Concentrations

Most future scenarios that assume no explicit GHG mitigation actions (beyond those already enacted) project increasing global GHG emissions over the century, with climbing GHG concentrations. Carbon dioxide is expected to remain the dominant anthropogenic GHG over the course of the 21st century. The radiative forcing associated with the non-CO_2 GHGs is still significant and increasing over time.

Future warming over the course of the 21st century, even under scenarios of low-emission growth, is very likely to be greater than observed warming over the past century. According to climate model simulations summarized by the IPCC,[307] through about 2030, the global warming rate is affected little by the choice of different future emissions scenarios. By the end of the 21st century, projected average global warming (compared to average temperature around 1990) varies significantly depending on the emission scenario and climate sensitivity assumptions, ranging from 3.2 to 7.2 °F (1.8 to 4.0 °C), with an uncertainty range of 2.0 to 11.5 °F (1.1 to 6.4 °C).

All of the United States is very likely to warm during this century, and most areas of the United States are expected to warm by more than the global

[305] Hegerl, G.C. et al. (2007) Understanding and Attributing Climate Change. In: *Climate Change 2007: The Physical Science Basis.* Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[306] CCSP (2008) *Reanalysis of Historical Climate Data for Key Atmospheric Features: Implications for Attribution of Causes of Observed Change.* A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research [Randall Dole, Martin Hoerling, and Siegfried Schubert (eds.)]. National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC, 156 pp.

[307] Meehl, G.A. *et al.* (2007) Global Climate Projections. In: *Climate Change 2007: The Physical Science Basis.* Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

average. The largest warming is projected to occur in winter over northern parts of Alaska. In western, central and eastern regions of North America, the projected warming has less seasonal variation and is not as large, especially near the coast, consistent with less warming over the oceans.

It is very likely that heat waves will become more intense, more frequent, and longer lasting in a future warm climate, whereas cold episodes are projected to decrease significantly.

Increases in the amount of precipitation are very likely in higher latitudes, while decreases are likely in most subtropical latitudes and the southwestern United States, continuing observed patterns. The mid-continental area is expected to experience drying during summer, indicating a greater risk of drought.

Intensity of precipitation events is projected to increase in the United States and other regions of the world. More intense precipitation is expected to increase the risk of flooding and result in greater runoff and erosion that has the potential for adverse water quality effects.

It is likely that hurricanes will become more intense, with stronger peak winds and more heavy precipitation associated with ongoing increases of tropical sea surface temperatures. Frequency changes in hurricanes are currently too uncertain for confident projections.

By the end of the century, global average sea level is projected by IPCC [308] to rise between 7.1 and 23 inches (18 and 59 centimeter [cm]), relative to around 1990, in the absence of increased dynamic ice sheet loss. Recent rapid changes at the edges of the Greenland and West Antarctic ice sheets show acceleration of flow and thinning. While an understanding of these ice sheet processes is incomplete, their inclusion in models would likely lead to increased sea level projections for the end of the 21st century.

Sea ice extent is projected to shrink in the Arctic under all IPCC emissions scenarios.

d. Projected Risks and Impacts Associated With Future Climate Change

Risk to society, ecosystems, and many natural Earth processes increase with increases in both the rate and magnitude of climate change. Climate warming may increase the possibility of large, abrupt regional or global climatic events (*e.g.,* disintegration of the Greenland Ice Sheet or collapse of the West Antarctic Ice Sheet). The partial deglaciation of Greenland (and possibly West Antarctica) could be triggered by a sustained temperature increase of 2 to 7 °F (1 to 4 °C) above 1990 levels. Such warming would cause a 13 to 20 feet (4 to 6 meter) rise in sea level, which would occur over a time period of centuries to millennia.

The CCSP [309] reports that climate change has the potential to accentuate the disparities already evident in the American health care system, as many of the expected health effects are likely to fall disproportionately on the poor, the elderly, the disabled, and the uninsured. The IPCC [310] states with very high confidence that climate change impacts on human health in U.S. cities will be compounded by population growth and an aging population.

Severe heat waves are projected to intensify in magnitude and duration over the portions of the United States where these events already occur, with potential increases in mortality and morbidity, especially among the elderly, young, and frail.

Some reduction in the risk of death related to extreme cold is expected. It is not clear whether reduced mortality from cold will be greater or less than increased heat-related mortality in the United States due to climate change.

Increases in regional ozone pollution relative to ozone levels without climate change are expected due to higher temperatures and weaker circulation in the United States and other world cities relative to air quality levels without climate change. Climate change is expected to increase regional ozone pollution, with associated risks in respiratory illnesses and premature death. In addition to human health effects, tropospheric ozone has significant adverse effects on crop yields, pasture and forest growth, and species composition. The directional effect of climate change on ambient particulate matter levels remains uncertain.

Within settlements experiencing climate change, certain parts of the population may be especially vulnerable; these include the poor, the elderly, those already in poor health, the disabled, those living alone, and/or indigenous populations dependent on one or a few resources. Thus, the potential impacts of climate change raise environmental justice issues.

The CCSP [311] concludes that, with increased CO_2 and temperature, the life cycle of grain and oilseed crops will likely progress more rapidly. But, as temperature rises, these crops will increasingly begin to experience failure, especially if climate variability increases and precipitation lessens or becomes more variable. Furthermore, the marketable yield of many horticultural crops (*e.g.,* tomatoes, onions, fruits) is very likely to be more sensitive to climate change than grain and oilseed crops.

Higher temperatures will very likely reduce livestock production during the summer season in some areas, but these losses will very likely be partially offset by warmer temperatures during the winter season.

Cold-water fisheries will likely be negatively affected; warm-water fisheries will generally benefit; and the results for cool-water fisheries will be mixed, with gains in the northern and losses in the southern portions of ranges.

Climate change has very likely increased the size and number of forest fires, insect outbreaks, and tree mortality in the interior West, the Southwest, and Alaska, and will continue to do so. Over North America, forest growth and productivity have been observed to increase since the middle of the 20th century, in part due to observed climate change. Rising CO_2 will very likely increase photosynthesis for forests, but the increased photosynthesis will likely only increase wood production in young forests on fertile soils. The combined effects of expected increased temperature, CO_2, nitrogen deposition, ozone, and forest

[308] IPCC (2007) Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis.* Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[309] Ebi, K.L., J. Balbus, P.L. Kinney, E. Lipp, D. Mills, M.S. O'Neill, and M. Wilson (2008) Effects of Global Change on Human Health. In: *Analyses of the effects of global change on human health and welfare and human systems.* A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. [Gamble, J.L. (ed.), K.L. Ebi, F.G. Sussman, T.J. Wilbanks, (Authors)]. U.S. Environmental Protection Agency, Washington, DC, USA, pp. 2–1 to 2–78.

[310] Field, C.B. et al. (2007) North America. In: *Climate Change 2007: Impacts, Adaptation and Vulnerability.* Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[311] Backlund, P., A. Janetos, D.S. Schimel, J. Hatfield, M.G. Ryan, S.R. Archer, and D. Lettenmaier (2008) Executive Summary. In: *The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States.* A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. Washington, DC., USA, 362 pp.

disturbance on soil processes and soil carbon storage remain unclear.

Coastal communities and habitats will be increasingly stressed by climate change impacts interacting with development and pollution. Sea level is rising along much of the U.S. coast, and the rate of change will very likely increase in the future, exacerbating the impacts of progressive inundation, storm-surge flooding, and shoreline erosion. Storm impacts are likely to be more severe, especially along the Gulf and Atlantic coasts. Salt marshes, other coastal habitats, and dependent species are threatened by sea level rise, fixed structures blocking landward migration, and changes in vegetation. Population growth and rising value of infrastructure in coastal areas increases vulnerability to climate variability and future climate change.

Climate change will likely further constrain already overallocated water resources in some regions of the United States, increasing competition among agricultural, municipal, industrial, and ecological uses. Although water management practices in the United States are generally advanced, particularly in the West, the reliance on past conditions as the basis for current and future planning may no longer be appropriate, as climate change increasingly creates conditions well outside of historical observations. Rising temperatures will diminish snowpack and increase evaporation, affecting seasonal availability of water. In the Great Lakes and major river systems, lower water levels are likely to exacerbate challenges relating to water quality, navigation, recreation, hydropower generation, water transfers, and binational relationships. Decreased water supply and lower water levels are likely to exacerbate challenges relating to aquatic navigation in the United States.

Higher water temperatures, increased precipitation intensity, and longer periods of low flows will exacerbate many forms of water pollution, potentially making attainment of water quality goals more difficult. As waters become warmer, the aquatic life they now support will be replaced by other species better adapted to warmer water. In the long term, warmer water and changing flow may result in deterioration of aquatic ecosystems.

Ocean acidification is projected to continue, resulting in the reduced biological production of marine calcifiers, including corals.

Climate change is likely to affect U.S. energy use and energy production and physical and institutional infrastructures. It will also likely interact with and possibly exacerbate ongoing environmental change and environmental pressures in settlements, particularly in Alaska where indigenous communities are facing major environmental and cultural impacts. The U.S. energy sector, which relies heavily on water for hydropower and cooling capacity, may be adversely impacted by changes to water supply and quality in reservoirs and other water bodies. Water infrastructure, including drinking water and wastewater treatment plants, and sewer and stormwater management systems, will be at greater risk of flooding, sea level rise and storm surge, low flows, and other factors that could impair performance.

Disturbances such as wildfires and insect outbreaks are increasing in the United States and are likely to intensify in a warmer future with warmer winters, drier soils, and longer growing seasons. Although recent climate trends have increased vegetation growth, continuing increases in disturbances are likely to limit carbon storage, facilitate invasive species, and disrupt ecosystem services.

Over the 21st century, changes in climate will cause species to shift north and to higher elevations and fundamentally rearrange U.S. ecosystems. Differential capacities for range shifts and constraints from development, habitat fragmentation, invasive species, and broken ecological connections will alter ecosystem structure, function, and services.

Climate change impacts will vary in nature and magnitude across different regions of the United States.

- Sustained high summer temperatures, heat waves, and declining air quality are projected in the Northeast,[312] Southeast,[313] Southwest,[314] and Midwest.[315] Projected climate change would continue to cause loss of sea ice, glacier retreat, permafrost thawing, and coastal erosion in Alaska.
- Reduced snowpack, earlier spring snowmelt, and increased likelihood of seasonal summer droughts are projected in the Northeast, Northwest,[316] and Alaska. More severe, sustained droughts and water scarcity are projected in the Southeast, Great Plains,[317] and Southwest.
- The Southeast, Midwest, and Northwest in particular are expected to be impacted by an increased frequency of heavy downpours and greater flood risk.
- Ecosystems of the Southeast, Midwest, Great Plains, Southwest, Northwest, and Alaska are expected to experience altered distribution of native species (including local extinctions), more frequent and intense wildfires, and an increase in insect pest outbreaks and invasive species.
- Sea level rise is expected to increase storm surge height and strength, flooding, erosion, and wetland loss along the coasts, particularly in the Northeast, Southeast, and islands.
- Warmer water temperatures and ocean acidification are expected to degrade important aquatic resources of islands and coasts such as coral reefs and fisheries.
- A longer growing season, low levels of warming, and fertilization effects of carbon dioxide may benefit certain crop species and forests, particularly in the Northeast and Alaska. Projected summer rainfall increases in the Pacific islands may augment limited freshwater supplies. Cold-related mortality is projected to decrease, especially in the Southeast. In the Midwest in particular, heating oil demand and snow-related traffic accidents are expected to decrease.

Climate change impacts in certain regions of the world may exacerbate problems that raise humanitarian, trade, and national security issues for the United States. The IPCC[318] identifies the most vulnerable world regions as the Arctic, because of the effects of high rates of projected warming on natural systems; Africa, especially the sub-Saharan region, because of current low adaptive capacity as well as climate change; small islands, due to high exposure of population and infrastructure to risk of sea level rise

[312] Northeast includes West Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine.

[313] Southeast includes Kentucky, Virginia, Arkansas, Tennessee, North Carolina, South Carolina, southeast Texas, Louisiana, Mississippi, Alabama, Georgia, and Florida.

[314] Southwest includes California, Nevada, Utah, western Colorado, Arizona, New Mexico (except the extreme eastern section), and southwest Texas.

[315] The Midwest includes Minnesota, Wisconsin, Michigan, Iowa, Illinois, Indiana, Ohio, and Missouri.

[316] The Northwest includes Washington, Idaho, western Montana, and Oregon.

[317] The Great Plains includes central and eastern Montana, North Dakota, South Dakota, Wyoming, Nebraska, eastern Colorado, Nebraska, Kansas, extreme eastern New Mexico, central Texas, and Oklahoma.

[318] Parry, M.L. *et al.* (2007) Technical Summary. In: *Climate Change 2007: Impacts, Adaptation and Vulnerability.* Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden, and C.E. Hanson (eds.)], Cambridge University Press, Cambridge, United Kingdom, pp. 23–78.

and increased storm surge; and Asian mega-deltas, such as the Ganges-Brahmaputra and the Zhujiang, due to large populations and high exposure to sea level rise, storm surge and river flooding. Climate change has been described as a potential threat multiplier with regard to national security issues.

3. Changes in Global Climate Indicators Associated With the Rule's GHG Emissions Reductions

EPA examined [319] the reductions in CO_2 and other GHGs associated with this action and analyzed the projected effects on global mean surface temperature and sea level, two common indicators of climate change. The analysis projects that this action will reduce climate warming and sea level rise. Although the projected reductions are small in overall magnitude by themselves, they are quantifiable and would contribute to reducing climate change risks. A commenter agreed that the modeling results showed small, but quantifiable, reductions in the global atmospheric CO_2 concentration, as well as a reduction in projected global mean surface temperature and sea level rise, from implementation of this action, across all climate sensitivities. As such, the commenter encourages the agencies to move forward with this action while continuing to develop additional, more stringent vehicle standards beyond 2016.

Another commenter indicated that the projected changes in climate impacts resulting from this action are small and therefore not meaningful. EPA disagrees with this view as the reductions may be small in overall magnitude, but in the global climate change context, they are quantifiable showing a clear directional signal across a range of climate sensitivities.[320] [321] EPA therefore determines that the projected reductions in atmospheric CO_2, global mean temperature and sea level rise are meaningful in the context of this rule. EPA addresses this point further in the Response to Comments document. For the final rule, EPA provides an additional climate change impact analysis for projected changes in ocean pH in the context of this action. In addition, EPA updated the modeling analysis based on the revised GHG emission reductions provided in Section III.F.1; however, the change in modeling results was very small in magnitude. Based on the reanalysis the results for projected atmospheric CO_2 concentrations are estimated to be reduced by an average of 2.9 ppm (previously 3.0 ppm), global mean temperature is estimated to be reduced by 0.006 to 0.015 °C by 2100 (previously 0.007 to 0.016 °C) and sea-level rise is projected to be reduced by approximately 0.06–0.14cm by 2100 (previously 0.06–0.15cm).

a. Estimated Projected Reductions in Atmospheric CO_2 Concentration, Global Mean Surface Temperatures Sea Level Rise and Ocean pH

EPA estimated changes in the atmospheric CO_2 concentration, global mean surface temperature and sea level to 2100 resulting from the emissions reductions in this action using the Model for the Assessment of Greenhouse Gas Induced Climate Change (MAGICC, version 5.3). This widely-used, peer reviewed modeling tool was also used to project temperature and sea level rise under different emissions scenarios in the Third and Fourth Assessments of the Intergovernmental Panel on Climate Change (IPCC).

GHG emissions reductions from Section III.F.1 were applied as net reductions to a peer reviewed global reference case (or baseline) emissions scenario to generate an emissions scenario specific to this action. For the scenario related to this action, all emissions reductions were assumed to begin in 2012, with zero emissions change in 2011 (from the reference case) followed by emissions linearly increasing to equal the value supplied in Section III.F.1 for 2020 and then continuing to 2100. Details about the reference case scenario and how the emissions reductions were applied to generate the scenario can be found in the RIA Chapter 7.

Changes in atmospheric CO_2 concentration, temperature, and sea-level for both the reference case and the emissions scenarios associated with this action were computed using MAGICC. To compute the reductions in the atmospheric CO_2 concentrations as well as in temperature and sea level resulting from this action, the output from the scenario associated with this final rule was subtracted from an existing Global Change Assessment Model (GCAM, formerly MiniCAM) reference emission scenario. To capture some key uncertainties in the climate system with the MAGICC model, changes in temperature and sea-level rise were projected across the most current IPCC range for climate sensitivities which ranges from 1.5 °C to 6.0 °C (representing the 90% confidence interval).[322] This wide range reflects the uncertainty in this measure of how much the global mean temperature would rise if the concentration of carbon dioxide in the atmosphere were to double. Details about this modeling analysis can be found in the RIA Chapter 7.4.

The results of this modeling, summarized in Table III.F.3–1, show small, but quantifiable, reductions in atmospheric CO_2 concentrations, projected global mean surface temperature and sea level resulting from this action, across all climate sensitivities. As a result of the emission reductions from this action, the atmospheric CO_2 concentration is projected to be reduced by an average of 2.9 parts per million (ppm), the global mean temperature is projected to be reduced by approximately 0.006–0.015°C by 2100, and global mean sea level rise is projected to be reduced by approximately 0.06–0.14cm by 2100. The reductions are small relative to the IPCC's 2100 "best estimates" for global mean temperature increases (1.8–4.0 °C) and sea level rise (0.20–0.59m) for all global GHG emissions sources for a range of emissions scenarios. EPA used a peer reviewed model, the MAGICC model, to do this analysis. This analysis is specific to this rule and therefore does not come from previously published work. Further discussion of EPA's modeling analysis is found in the final RIA.

[319] Using the Model for the Assessment of Greenhouse Gas Induced Climate Change (MAGICC, *http://www.cgd.ucar.edu/cas/wigley/magicc/*), EPA estimated the effects of this action's greenhouse gas emissions reductions on global mean temperature and sea level. Please refer to Chapter 7.4 of the RIA for additional information.

[320] The National Research Council (NRC) 2001 study, *Climate Change Science: An Analysis of Some Key Questions,* defines climate sensitivity as the sensitivity of the climate system to a forcing is commonly expressed in terms of the global mean temperature change that would be expected after a time sufficiently long enough for both the atmosphere and ocean to come to equilibrium with the change in climate forcing.

[321] To capture some of the uncertainty in the climate system, the changes in atmospheric CO_2, projected temperatures and sea level were estimated across the most current Intergovernmental Panel on Climate Change (IPCC) range of climate sensitivities, 1.5 °C to 6.0 °C.

[322] In IPCC reports, equilibrium climate sensitivity refers to the equilibrium change in the annual mean global surface temperature following a doubling of the atmospheric equivalent carbon dioxide concentration. The IPCC states that climate sensitivity is "likely" to be in the range of 2 °C to 4.5 °C, "very unlikely" to be less than 1.5 °C, and "values substantially higher than 4.5 °C cannot be excluded." IPCC WGI, 2007, *Climate Change 2007—The Physical Science Basis,* Contribution of Working Group I to the Fourth Assessment Report of the IPCC, *http://www.ipcc.ch/.*

TABLE III.F.3–1—EFFECT OF GHG EMISSIONS REDUCTIONS ON PROJECTED CHANGES IN GLOBAL CLIMATE FOR THE FINAL VEHICLES RULEMAKING

[For climate sensitivities ranging from 1.5–6 °C]

Measure	Units	Year	Projected change
Atmospheric CO_2 Concentration	ppm	2100	−2.7–3.1
Global Mean Surface Temperature	°C	2100	−0.006–0.015
Sea Level Rise	Cm	2100	−0.06–0.14
Ocean pH	pH units	2100	0.0014

As a substantial portion of CO_2 emitted into the atmosphere is not removed by natural processes for millennia, each unit of CO_2 not emitted into the atmosphere avoids essentially permanent climate change on centennial time scales. Though the magnitude of the avoided climate change projected here is small, these reductions would represent a reduction in the adverse risks associated with climate change (though these risks were not formally estimated for this action) across all climate sensitivities.

The IPCC [323] has noted that ocean acidification due to the direct effects of elevated CO_2 concentrations will impair a wide range of planktonic and other marine organisms that use aragonite to make their shells or skeletons. EPA used the Program CO2SYS,[324] version 1.05 to estimate projected changes in tropical ocean pH based on the atmospheric CO_2 concentration reductions resulting from this action and other specified input conditions (*e.g.,* sea surface temperature characteristic of tropical waters). The program performs calculations relating parameters of the carbon dioxide (CO_2) system in seawater. EPA used the program to calculate ocean pH as a function of atmospheric CO_2, among other specified input conditions. Based on the projected atmospheric CO_2 concentration reductions (average of 2.9 ppm by 2100) that would result from this rule, the program calculates an increase in ocean pH of about 0.0014 pH units in 2100. Thus, this analysis indicates the projected decrease in atmospheric CO_2 concentrations from today's rule would result in an increase in ocean pH.

EPA's analysis of the rule's effect on global climate conditions is intended to quantify these potential reductions using the best available science. While EPA's modeling results of the effect of this rule alone show small differences in climate effects (CO_2 concentration, temperature, sea-level rise, ocean pH), when expressed in terms of global climate endpoints and global GHG emissions, they yield results that are repeatable and consistent within the modeling frameworks used.

G. How will the standards impact non-GHG emissions and their associated effects?

In addition to reducing the emissions of greenhouse gases, this rule will influence the emissions of "criteria" air pollutants and air toxics (*i.e.,* hazardous air pollutants). The criteria air pollutants include carbon monoxide (CO), fine particulate matter (PM2.5), sulfur dioxide (SO_X) and the ozone precursors hydrocarbons (VOC) and oxides of nitrogen (NO_X); the air toxics include benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and acrolein. Our estimates of these non-GHG emission impacts from the GHG program are shown by pollutant in Table III.G–1 and Table III.G–2 in total, and broken down by the two drivers of these changes: (a) "Upstream" emission reductions due to decreased extraction, production and distribution of motor gasoline; and (b) "downstream" emission increases, reflecting the effects of VMT rebound (discussed in Sections III.F and III.H) and the effects of our assumptions about ethanol-blended fuel (E10), as discussed below. Total program impacts on criteria and toxics emissions are discussed below, followed by individual discussions of the upstream and downstream impacts. Those are followed by discussions of the effects on air quality, health, and other environmental concerns.

As in the proposal, for this analysis we attribute decreased fuel consumption from this program to gasoline only, while assuming no effect on volumes of ethanol and other renewable fuels because they are mandated under the Renewable Fuel Standard (RFS2). However, because this rule does not assume RFS2 volumes of ethanol in the baseline, the result is a greater projected market share of E10 in the control case.[325] In fact, the GHG standards will not be affecting the market share of E10, because EPA's analysis for the RFS2 rule predicts 100% E10 penetration by 2014.[326]

The amount of E10 affects downstream non-GHG emissions. In the proposal, EPA stated these same fuel assumptions and qualitatively noted that there were likely unquantified impacts on non-GHG emissions between the two cases. In DRIA Chapter 5, EPA indicated its plans to quantify these impacts in the air quality modeling and in the final rule inventories. Upstream emission impacts depend only on fuel volumes, so the impacts presented here reflect only the reduced gasoline consumption.

The inventories presented in this rulemaking include an analysis of these fuel effects which was conducted using EPA's Motor Vehicle Emission Simulator (MOVES2010). The most notable impact, although still relatively slight, is a 2.2 percent increase in 2030 in national acetaldehyde emissions over the baseline scenario. It should be noted that these emission impacts are not due to the new GHG vehicle standards. These impacts are instead a consequence of the assumed ethanol volumes. This program does not mandate an increase in E10, nor any particular fuel blend. The emission impact of this shift was also modeled in the RFS2 rule.

As shown in Table III.G–1, EPA estimates that this program would result in reductions of NO_X, VOC, PM and

[323] Fischlin, A. *et al.* (2007) Ecosystems, their Properties, Goods, and Services. In: Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[324] Lewis, E., and D. W. R. Wallace. 1998. Program Developed for CO_2 System Calculations. ORNL/CDIAC–105. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tennessee.

[325] When this rule's analysis was initiated, the RFS2 rule was not yet final. Therefore, it assumes the ethanol volumes in Annual Energy Outlook 2007 (U.S. Energy Information Administration, Annual Energy Outlook 2007, Transportation Demand Sector Supplemental Table. *http://www.eia.doe.gov/oiaf/archive/aeo07/supplement/index.html*)

[326] EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332. *See* also 75 FR 14670, March 26, 2010.

SO_X, but would increase CO emissions. For NO_X, VOC, and PM we estimate net reductions because the emissions reductions from upstream sources are larger than the emission increases due to downstream sources. In the case of CO, we estimate slight emission increases, because there are relatively small reductions in upstream emissions, and thus the projected downstream emission increases are greater than the projected emission decreases due to reduced fuel production. For SO_X, downstream emissions are roughly proportional to fuel consumption, therefore a decrease is seen in both upstream and downstream sources.

For all criteria pollutants the overall impact of the program would be relatively small compared to total U.S. inventories across all sectors. In 2030, EPA estimates the program would reduce total NO_X, PM and SO_X inventories by 0.1 to 0.8 percent and reduce the VOC inventory by 1.0 percent, while increasing the total national CO inventory by 0.6 percent.

As shown in Table III.G–2, EPA estimates that the GHG program would result in small changes for air toxic emissions compared to total U.S. inventories across all sectors. In 2030, EPA estimates the program would reduce total benzene and 1,3 butadiene emissions by 0.1 to 0.3 percent. Total acrolein and formaldehyde emissions would increase by 0.1 percent. Acetaldehyde emissions would increase by 2.2 percent.

One commenter requested that EPA present emission inventories for additional air toxics. EPA is presenting inventories for certain air toxic emissions which were identified as key national and regional-scale cancer and noncancer risk drivers in past National Air Toxics Assessments (NATA). For additional details, please refer to the Response to Comments document.[327]

Other factors which may impact non-GHG emissions, but are not estimated in this analysis, include:

- Vehicle technologies used to reduce tailpipe CO_2 emissions; because the regulatory standards for non-GHG emissions are the primary driver for these emissions, EPA expects the impact of this program to be negligible on non-GHG emission rates per mile.
- The potential for increased market penetration of diesel vehicles; because these vehicles would be held to the same certification and in-use standards for criteria pollutants as their gasoline counterparts, EPA expects their impact to be negligible on criteria pollutants and other non-GHG emissions. EPA does not project increased penetration of diesels as necessary to meet the GHG standards.
- Early introduction of electric vehicles and plug-in hybrid electric vehicles, which would reduce criteria emissions in cases where those vehicles are able to be certified to lower certification standards. This would also likely reduce gaseous air toxics.
- Reduced refueling emissions due to less frequent refueling events and reduced annual refueling volumes resulting from the GHG standards.
- Increased hot soak evaporative emissions due to the likely increase in number of trips associated with VMT rebound modeled in this rule.

TABLE III.G–1—ANNUAL CRITERIA EMISSION IMPACTS OF PROGRAM

[Short tons]

	Total impacts		*Upstream impacts*		*Downstream impacts*	
	2020	2030	*2020*	*2030*	*2020*	*2030*
VOC	−60,187	−115,542	*−64,506*	*−126,749*	*4,318*	*11,207*
% of total inventory	−0.51%	−1.01%	*−0.55%*	*−1.11%*	*0.04%*	*0.01%*
CO	3,992	170,675	*−6,165*	*−12,113*	*10,156*	*182,788*
% of total inventory	0.01%	0.56%	*−0.02%*	*−0.04%*	*0.01%*	*0.6%*
NO_X	−5,881	−21,763	*−19,291*	*−37,905*	*13,410*	*16,143*
% of total inventory	−0.02	−0.07%	*−0.06%*	*−0.12%*	*0.04%*	*0.05%*
$PM_{2.5}$	−2,398	−4,564	*−2,629*	*−5,165*	*231.0*	*602.3*
% of total inventory	−0.03%	−0.05%	*−0.03%*	*−0.06%*	*0.00%*	*0.01%*
SO_X	−13,832	−27,443	*−11,804*	*−23,194*	*−2,027*	*−4,249*
% of total inventory	−0.41%	−0.82%	*−0.35%*	*−0.69%*	*−0.06%*	*−0.13%*

TABLE III.G–2—ANNUAL AIR TOXIC EMISSION IMPACTS OF PROGRAM

[Short tons]

	Total impacts		Upstream impacts		Downstream impacts	
	2020	2030	2020	2030	2020	2030
1,3-Butadiene	−95	−21	−1.5	−3.0	−93.6	−18.1
% of total inventory	−0.38%	−0.10%	−0.01%	−0.01%	−0.37%	−0.09%
Acetaldehyde	760	668	−6.8	−13.4	766.9	681.5
% of total inventory	2.26%	2.18%	−0.02%	−0.04%	2.28%	2.22%
Acrolein	1	5	−0.9	−1.8	1.7	6.5
% of total inventory	0.01%	0.07%	−0.01%	−0.03%	0.03%	0.10%
Benzene	−890	−523	−139.6	−274.3	−750.0	−248.3
% of total inventory	−0.48%	−0.29%	−0.08%	−0.15%	−0.40%	−0.14%
Formaldehyde	−49	15	−51.4	−101.0	2.1	116.3
% of total inventory	−0.06%	0.02%	−0.06%	−0.12%	0.00%	0.14%

[327] U.S. EPA. National Air Toxics Assessment. 2002, 1999, and 1996. Available at: *http://www.epa.gov/nata/*.

1. Upstream Impacts of Program

No substantive comments were received on the upstream inventory modeling used in the proposal. The rulemaking inventories were updated with the revised estimates of fuel savings as detailed in Section III.F.

Reducing tailpipe CO_2 emissions from light-duty cars and trucks through tailpipe standards and improved A/C efficiency will result in reduced fuel demand and reductions in the emissions associated with all of the processes involved in getting petroleum to the pump. These upstream emission impacts on criteria pollutants are summarized in Table III.G–1. The upstream reductions grow over time as the fleet turns over to cleaner CO_2 vehicles, so that by 2030 VOC would decrease by 127,000 tons, NO_X by 38,000 tons, and $PM_{2.5}$ by 5,000 tons. Table III.G–2 shows the corresponding impacts on upstream air toxic emissions in 2030. Formaldehyde decreases by 101 tons, benzene by 274 tons, acetaldehyde by 13 tons, acrolein by 2 tons, and 1,3-butadiene by 3 tons.

To determine these impacts, EPA estimated the impact of reduced petroleum volumes on the extraction and transportation of crude oil as well as the production and distribution of finished gasoline. For the purpose of assessing domestic-only emission reductions it was necessary to estimate the fraction of fuel savings attributable to domestic finished gasoline, and of this gasoline what fraction is produced from domestic crude. For this analysis EPA estimated that 50 percent of fuel savings is attributable to domestic finished gasoline and that 90 percent of this gasoline originated from imported crude. Emission factors for most upstream emission sources are based on the GREET1.8 model, developed by DOE's Argonne National Laboratory,[328] but in some cases the GREET values were modified or updated by EPA to be consistent with the National Emission Inventory (NEI).[329] The primary updates for this analysis were to incorporate newer information on gasoline distribution emissions for VOC from the NEI, which were significantly higher than GREET estimates; and the incorporation of upstream emission factors for the air toxics estimated in this analysis: benzene, 1,3-butadiene, acetaldehyde, acrolein, and formaldehyde. The development of these emission factors is detailed in RIA Chapter 5.

2. Downstream Impacts of Program

No substantive comments were received on the emission modeling or emission inventories presented in this section. However, two changes in modeling differentiate the analysis presented here from that presented in the proposal. Economic inputs such as fuel prices and vehicle sales were updated from AEO 2009 to AEO 2010 Early Release, and as described above, the effects of ethanol volume assumptions were explicitly modeled. Thus, the primary differences in non-GHG emissions between the proposed rule and final rule are attributed more to these changes in analytic inputs, and less to changes in the GHG standards program.

Downstream emission impacts attributable to this program are due to the VMT rebound effect and the ethanol volume assumptions. As discussed in more detail in Section III.H, the effect of fuel cost on VMT ("rebound") was accounted for in our assessment of economic and environmental impacts of this rule. A 10 percent rebound case was used for this analysis, meaning that VMT for affected model years is modeled as increasing by 10 percent as much as the increase in fuel economy; *i.e.,* a 10 percent increase in fuel economy would yield approximately a 1 percent increase in VMT.

As detailed in the introduction to this section, fuel composition also has effects on vehicle emissions and particularly air toxics. The relationship between fuel composition and emission impacts used in MOVES2010 and applied in this analysis match those developed for the recent Renewable Fuels Standard (RFS2) requirement, and are extensively documented in the RFS2 RIA and supporting documents.[330]

Downstream emission impacts of the rebound effect are summarized in Table III.G–1 for criteria pollutants and precursors and Table III.G–2 for air toxics. The emission impacts from the rebound effect and the change in fuel supply grow over time as the fleet turns over to cleaner CO_2 vehicles, so that by 2030 VOC would increase by 11,000 tons, NO_X by 16,000 tons, and $PM_{2.5}$ by 600 tons. Table III.G–2 shows the corresponding impacts on air toxic emissions. These impacts in 2030 include 18 fewer tons of 1,3-butadiene, 668 additional tons of acetaldehyde, 248 fewer tons of benzene, 116 additional tons of formaldehyde, and 6.5 additional tons of acrolein.

For this analysis, MOVES2010 was used to estimate base VOC, CO, NO_X, PM and air toxics emissions for both control and reference cases. Rebound emissions from light duty cars and trucks were then calculated using the OMEGA model post-processor and added to the control case. A more complete discussion of the inputs, methodology, and results is contained in RIA Chapter 5.

3. Health Effects of Non-GHG Pollutants

In this section we discuss health effects associated with exposure to some of the criteria and air toxics impacted by the vehicle standards; PM, ozone, NO_X and SO_X, CO and air toxics. No substantive comments were received on the health effects of non-GHG pollutants.

a. Particulate Matter

i. Background

Particulate matter is a generic term for a broad class of chemically and physically diverse substances. It can be principally characterized as discrete particles that exist in the condensed (liquid or solid) phase spanning several orders of magnitude in size. Since 1987, EPA has delineated that subset of inhalable particles small enough to penetrate to the thoracic region (including the tracheobronchial and alveolar regions) of the respiratory tract (referred to as thoracic particles). Current NAAQS use $PM_{2.5}$ as the indicator for fine particles (with $PM_{2.5}$ referring to particles with a nominal mean aerodynamic diameter less than or equal to 2.5 μm), and use PM_{10} as the indicator for purposes of regulating the coarse fraction of PM_{10} (referred to as thoracic coarse particles or coarse-fraction particles; generally including particles with a nominal mean aerodynamic diameter greater than 2.5 μm and less than or equal to 10 μm, or $PM_{10-2.5}$). Ultrafine particles are a subset of fine particles, generally less than 100 nanometers (0.1 μm) in aerodynamic diameter.

Fine particles are produced primarily by combustion processes and by transformations of gaseous emissions (*e.g.,* SO_X, NO_X and VOC) in the atmosphere. The chemical and physical properties of $PM_{2.5}$ may vary greatly with time, region, meteorology, and source category. Thus, $PM_{2.5}$ may include a complex mixture of different pollutants including sulfates, nitrates, organic compounds, elemental carbon

[328] Greenhouse Gas, Regulated Emissions, and Energy Use in Transportation model (GREET), U.S. Department of Energy, Argonne National Laboratory, *http://www.transportation.anl.gov/modeling_simulation/GREET/.*

[329] U.S. EPA. 2002 National Emissions Inventory (NEI) Data and Documentation, *http://www.epa.gov/ttn/chief/net/2002inventory.html.*

[330] EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332. *See* also 75 FR 14670, March 26, 2010.

and metal compounds. These particles can remain in the atmosphere for days to weeks and travel hundreds to thousands of kilometers.

ii. Health Effects of PM

Scientific studies show ambient PM is associated with a series of adverse health effects. These health effects are discussed in detail in EPA's Integrated Science Assessment for Particulate Matter (ISA).[331] Further discussion of health effects associated with PM can also be found in the RIA for this rule. The ISA summarizes evidence associated with $PM_{2.5}$, $PM_{10-2.5}$, and ultrafine particles (UFPs).

The ISA concludes that health effects associated with short-term exposures (hours to days) to ambient $PM_{2.5}$ include non-fatal cardiovascular effects, mortality, and respiratory effects, such as exacerbation of asthma symptoms in children and hospital admissions and emergency department visits for chronic obstructive pulmonary disease (COPD) and respiratory infections.[332] The ISA notes that long-term exposure to $PM_{2.5}$ (months to years) is associated with the development/progression of cardiovascular disease, premature mortality, and respiratory effects, including reduced lung function growth, increased respiratory symptoms, and asthma development.[333] The ISA concludes that that the currently available scientific evidence from epidemiologic, controlled human exposure studies, and toxicological studies supports that a causal association exists between short- and long-term exposures to $PM_{2.5}$ and cardiovascular effects and mortality. Furthermore, the ISA concludes that the collective evidence supports likely causal associations between short- and long-term $PM_{2.5}$ exposures and respiratory effects. The ISA also concludes that the evidence is suggestive of a causal association for reproductive and developmental effects and cancer, mutagenicity, and genotoxicity and long-term exposure to $PM_{2.5}$.[334]

For $PM_{10-2.5}$, the ISA concludes that the current evidence is suggestive of a causal relationship between short-term exposures and cardiovascular effects, such as hospitalization for ischemic heart disease. There is also suggestive evidence of a causal relationship between short-term $PM_{10-2.5}$ exposure and mortality and respiratory effects. Data are inadequate to draw conclusions regarding the health effects associated with long-term exposure to $PM_{10-2.5}$.[335]

For UFPs, the ISA concludes that there is suggestive evidence of a causal relationship between short-term exposures and cardiovascular effects, such as changes in heart rhythm and blood vessel function. It also concludes that there is suggestive evidence of association between short-term exposure to UFPs and respiratory effects. Data are inadequate to draw conclusions regarding the health effects associated with long-term exposure to UFP's.[336]

b. Ozone

i. Background

Ground-level ozone pollution is typically formed by the reaction of VOC and NO_X in the lower atmosphere in the presence of heat and sunlight. These pollutants, often referred to as ozone precursors, are emitted by many types of pollution sources, such as highway and nonroad motor vehicles and engines, power plants, chemical plants, refineries, makers of consumer and commercial products, industrial facilities, and smaller area sources.

The science of ozone formation, transport, and accumulation is complex.[337] Ground-level ozone is produced and destroyed in a cyclical set of chemical reactions, many of which are sensitive to temperature and sunlight. When ambient temperatures and sunlight levels remain high for several days and the air is relatively stagnant, ozone and its precursors can build up and result in more ozone than typically occurs on a single high-temperature day. Ozone can be transported hundreds of miles downwind from precursor emissions, resulting in elevated ozone levels even in areas with low local VOC or NO_X emissions.

ii. Health Effects of Ozone

The health and welfare effects of ozone are well documented and are assessed in EPA's 2006 Air Quality Criteria Document (ozone AQCD) and 2007 Staff Paper.[338] [339] Ozone can irritate the respiratory system, causing coughing, throat irritation, and/or uncomfortable sensation in the chest. Ozone can reduce lung function and make it more difficult to breathe deeply; breathing may also become more rapid and shallow than normal, thereby limiting a person's activity. Ozone can also aggravate asthma, leading to more asthma attacks that require medical attention and/or the use of additional medication. In addition, there is suggestive evidence of a contribution of ozone to cardiovascular-related morbidity and highly suggestive evidence that short-term ozone exposure directly or indirectly contributes to non-accidental and cardiopulmonary-related mortality, but additional research is needed to clarify the underlying mechanisms causing these effects. In a recent report on the estimation of ozone-related premature mortality published by the National Research Council (NRC), a panel of experts and reviewers concluded that short-term exposure to ambient ozone is likely to contribute to premature deaths and that ozone-related mortality should be included in estimates of the health benefits of reducing ozone exposure.[340] Animal toxicological evidence indicates that with repeated exposure, ozone can inflame and damage the lining of the lungs, which may lead to permanent changes in lung tissue and irreversible reductions in lung function. People who are more susceptible to effects associated with exposure to ozone can include children, the elderly, and individuals with respiratory disease such as asthma. Those with greater exposures to ozone, for instance due to

[331] U.S. EPA (2009) Integrated Science Assessment for Particulate Matter. EPA 600/R–08/139F, Docket EPA–HQ–OAR–2009–0472–11295.

[332] U.S. EPA (2009). Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–08/139F, 2009. Section 2.3.1.1.

[333] U.S. EPA (2009). Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–08/139F, 2009. page 2–12, Sections 7.3.1.1 and 7.3.2.1.

[334] U.S. EPA (2009). Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–08/139F, 2009. Section 2.3.2.

[335] U.S. EPA (2009). Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–08/139F, 2009. Section 2.3.4, Table 2–6.

[336] U.S. EPA (2009). Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–08/139F, 2009. Section 2.3.5, Table 2–6.

[337] U.S. EPA (2006). Air Quality Criteria for Ozone and Related Photochemical Oxidants (Final). EPA/600/R–05/004aF–cF. Washington, DC: U.S. EPA. Docket EPA–HQ–OAR–2009–0472–0099 through –0101.

[338] U.S. EPA. (2006). Air Quality Criteria for Ozone and Related Photochemical Oxidants (Final). EPA/600/R–05/004aF–cF. Washington, DC: U.S. EPA.

[339] U.S. EPA (2007). Review of the National Ambient Air Quality Standards for Ozone: Policy Assessment of Scientific and Technical Information, OAQPS Staff Paper. EPA–452/R–07–003. Washington, DC, U.S. EPA. Docket EPA–HQ–OAR–2009–0472–0105 through –0106.

[340] National Research Council (NRC), 2008. *Estimating Mortality Risk Reduction and Economic Benefits from Controlling Ozone Air Pollution.* The National Academies Press: Washington, DC Docket EPA–HQ–OAR–2009–0472–0322.

time spent outdoors (*e.g.,* children and outdoor workers), are of particular concern.

The 2006 ozone AQCD also examined relevant new scientific information that has emerged in the past decade, including the impact of ozone exposure on such health effects as changes in lung structure and biochemistry, inflammation of the lungs, exacerbation and causation of asthma, respiratory illness-related school absence, hospital admissions and premature mortality. Animal toxicological studies have suggested potential interactions between ozone and PM with increased responses observed to mixtures of the two pollutants compared to either ozone or PM alone. The respiratory morbidity observed in animal studies along with the evidence from epidemiologic studies supports a causal relationship between acute ambient ozone exposures and increased respiratory-related emergency room visits and hospitalizations in the warm season. In addition, there is suggestive evidence of a contribution of ozone to cardiovascular-related morbidity and non-accidental and cardiopulmonary mortality.

c. NO_X and SO_X

i. Background

Nitrogen dioxide (NO_2) is a member of the NO_X family of gases. Most NO_2 is formed in the air through the oxidation of nitric oxide (NO) emitted when fuel is burned at a high temperature. SO_2, a member of the sulfur oxide (SO_X) family of gases, is formed from burning fuels containing sulfur (*e.g.,* coal or oil derived), extracting gasoline from oil, or extracting metals from ore.

SO_2 and NO_2 can dissolve in water vapor and further oxidize to form sulfuric and nitric acid which react with ammonia to form sulfates and nitrates, both of which are important components of ambient PM. The health effects of ambient PM are discussed in Section III.G.3.a of this preamble. NO_X along with non-methane hydrocarbon (NMHC) are the two major precursors of ozone. The health effects of ozone are covered in Section III.G.3.b.

ii. Health Effects of NO_2

Information on the health effects of NO_2 can be found in the EPA Integrated Science Assessment (ISA) for Nitrogen Oxides.[341] The EPA has concluded that the findings of epidemiologic, controlled human exposure, and animal toxicological studies provide evidence that is sufficient to infer a likely causal relationship between respiratory effects and short-term NO_2 exposure. The ISA concludes that the strongest evidence for such a relationship comes from epidemiologic studies of respiratory effects including symptoms, emergency department visits, and hospital admissions. The ISA also draws two broad conclusions regarding airway responsiveness following NO_2 exposure. First, the ISA concludes that NO_2 exposure may enhance the sensitivity to allergen-induced decrements in lung function and increase the allergen-induced airway inflammatory response following 30-minute exposures of asthmatics to NO_2 concentrations as low as 0.26 ppm. In addition, small but significant increases in non-specific airway hyperresponsiveness were reported following 1-hour exposures of asthmatics to 0.1 ppm NO_2. Second, exposure to NO_2 has been found to enhance the inherent responsiveness of the airway to subsequent nonspecific challenges in controlled human exposure studies of asthmatic subjects. Enhanced airway responsiveness could have important clinical implications for asthmatics since transient increases in airway responsiveness following NO_2 exposure have the potential to increase symptoms and worsen asthma control. Together, the epidemiologic and experimental data sets form a plausible, consistent, and coherent description of a relationship between NO_2 exposures and an array of adverse health effects that range from the onset of respiratory symptoms to hospital admission.

Although the weight of evidence supporting a causal relationship is somewhat less certain than that associated with respiratory morbidity, NO_2 has also been linked to other health endpoints. These include all-cause (nonaccidental) mortality, hospital admissions or emergency department visits for cardiovascular disease, and decrements in lung function growth associated with chronic exposure.

iii. Health Effects of SO_2

Information on the health effects of SO_2 can be found in the EPA Integrated Science Assessment for Sulfur Oxides.[342] SO_2 has long been known to cause adverse respiratory health effects, particularly among individuals with asthma. Other potentially sensitive groups include children and the elderly. During periods of elevated ventilation, asthmatics may experience symptomatic bronchoconstriction within minutes of exposure. Following an extensive evaluation of health evidence from epidemiologic and laboratory studies, the EPA has concluded that there is a causal relationship between respiratory health effects and short-term exposure to SO_2. Separately, based on an evaluation of the epidemiologic evidence of associations between short-term exposure to SO_2 and mortality, the EPA has concluded that the overall evidence is suggestive of a causal relationship between short-term exposure to SO_2 and mortality.

d. Carbon Monoxide

Information on the health effects of carbon monoxide (CO) can be found in the EPA Integrated Science Assessment (ISA) for Carbon Monoxide.[343] The ISA concludes that ambient concentrations of CO are associated with a number of adverse health effects.[344] This section provides a summary of the health effects associated with exposure to ambient concentrations of CO.[345]

Human clinical studies of subjects with coronary artery disease show a decrease in the time to onset of exercise-induced angina (chest pain) and electrocardiogram changes following CO exposure. In addition, epidemiologic studies show associations between short-term CO exposure and cardiovascular morbidity, particularly increased emergency room visits and hospital admissions for coronary heart disease (including ischemic heart disease, myocardial infarction, and angina). Some epidemiologic evidence is also available for increased hospital admissions and emergency room visits for congestive heart failure and cardiovascular disease as a whole. The ISA concludes that a causal relationship is likely between short-term exposures to CO and cardiovascular morbidity. It also concludes that available data are inadequate to conclude that a causal

[341] U.S. EPA (2008). *Integrated Science Assessment for Oxides of Nitrogen—Health Criteria (Final Report).* EPA/600/R–08/071. Washington, DC: U.S.EPA. Docket EPA–HQ–OAR–2009–0472–0350.

[342] U.S. EPA. (2008). *Integrated Science Assessment (ISA) for Sulfur Oxides—Health Criteria (Final Report).* EPA/600/R–08/047F. Washington, DC: U.S. Environmental Protection Agency. Docket EPA–HQ–OAR–2009–0472–0335.

[343] U.S. EPA, 2010. Integrated Science Assessment for Carbon Monoxide (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–09/019F, 2010. *http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=218686.*

[344] The ISA evaluates the health evidence associated with different health effects, assigning one of five "weight of evidence" determination: causal relationship, likely to be a causal relationship, suggestive of a causal relationship, inadequate to infer a causal relationship, and not likely to be a causal relationship. For definitions of these levels of evidence, please refer to Section 1.6 of the ISA.

[345] Personal exposure includes contributions from many sources, and in many different environments. Total personal exposure to CO includes both ambient and nonambient components; and both components may contribute to adverse health effects.

relationship exists between long-term exposures to CO and cardiovascular morbidity.

Animal studies show various neurological effects with in-utero CO exposure. Controlled human exposure studies report inconsistent neural and behavioral effects following low-level CO exposures. The ISA concludes the evidence is suggestive of a causal relationship with both short- and long-term exposure to CO and central nervous system effects.

A number of epidemiologic and animal toxicological studies cited in the ISA have evaluated associations between preterm birth and cardiac birth defects and CO exposure. The epidemiologic studies provide limited evidence of a CO-induced effect on pre-term births and birth defects, with weak evidence for a decrease in birth weight. Animal toxicological studies have found associations between perinatal CO exposure and decrements in birth weight, as well as other developmental outcomes. The ISA concludes these studies are suggestive of a causal relationship between long-term exposures to CO and developmental effects and birth outcomes.

Epidemiologic studies provide evidence of effects on respiratory morbidity such as changes in pulmonary function, respiratory symptoms, and hospital admissions associated with ambient CO concentrations. A limited number of epidemiologic studies considered copollutants such as ozone, SO_2, and PM in two-pollutant models and found that CO risk estimates were generally robust, although this limited evidence makes it difficult to disentangle effects attributed to CO itself from those of the larger complex air pollution mixture. Controlled human exposure studies have not extensively evaluated the effect of CO on respiratory morbidity. Animal studies at levels of 50–100 ppm CO show preliminary evidence of altered pulmonary vascular remodeling and oxidative injury. The ISA concludes that the evidence is suggestive of a causal relationship between short-term CO exposure and respiratory morbidity, and inadequate to conclude that a causal relationship exists between long-term exposure and respiratory morbidity.

Finally, the ISA concludes that the epidemiologic evidence is suggestive of a causal relationship between short-term exposures to CO and mortality. Epidemiologic studies provide evidence of an association between short-term exposure to CO and mortality, but limited evidence is available to evaluate cause-specific mortality outcomes associated with CO exposure. In addition, the attenuation of CO risk estimates which was often observed in copollutant models contributes to the uncertainty as to whether CO is acting alone or as an indicator for other combustion-related pollutants. The ISA also concludes that there is not likely to be a causal relationship between relevant long-term exposures to CO and mortality.

e. Air Toxics

Motor vehicle emissions contribute to ambient levels of air toxics known or suspected as human or animal carcinogens, or that have noncancer health effects. The population experiences an elevated risk of cancer and other noncancer health effects from exposure to the class of pollutants known collectively as "air toxics".[346] These compounds include, but are not limited to, benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, polycyclic organic matter (POM), and naphthalene. These compounds, except acetaldehyde, were identified as national or regional risk drivers in the 2002 National-scale Air Toxics Assessment (NATA) and have significant inventory contributions from mobile sources.[347] Emissions and ambient concentrations of compounds are discussed in the RIA chapters on emission inventories and air quality (Chapters 5 and 7, respectively).

i. Benzene

The EPA's IRIS database lists benzene as a known human carcinogen (causing leukemia) by all routes of exposure, and concludes that exposure is associated with additional health effects, including genetic changes in both humans and animals and increased proliferation of bone marrow cells in mice.[348] [349] [350] EPA states in its IRIS database that data indicate a causal relationship between benzene exposure and acute lymphocytic leukemia and suggest a relationship between benzene exposure and chronic non-lymphocytic leukemia and chronic lymphocytic leukemia. The International Agency for Research on Carcinogens (IARC) has determined that benzene is a human carcinogen and the U.S. Department of Health and Human Services (DHHS) has characterized benzene as a known human carcinogen.[351] [352]

A number of adverse noncancer health effects including blood disorders, such as preleukemia and aplastic anemia, have also been associated with long-term exposure to benzene.[353] [354] The most sensitive noncancer effect observed in humans, based on current data, is the depression of the absolute lymphocyte count in blood.[355] [356] In addition, recent work, including studies sponsored by the Health Effects Institute (HEI), provides evidence that biochemical responses are occurring at lower levels of benzene exposure than previously known.[357] [358] [359] [360] EPA's

[346] U.S. EPA. 2002 National-Scale Air Toxics Assessment. *http://www.epa.gov/ttn/atw/nata12002/risksum.html.* Docket EPA–HQ–OAR–2009–0472–11322.

[347] U.S. EPA. 2009. National-Scale Air Toxics Assessment for 2002. *http://www.epa.gov/ttn/atw/nata2002/.* Docket EPA–HQ–OAR–2009–0472–11321.

[348] U.S. EPA. 2000. Integrated Risk Information System File for Benzene. This material is available electronically at *http://www.epa.gov/iris/subst/0276.htm.* Docket EPA–HQ–OAR–2009–0472–1659.

[349] International Agency for Research on Cancer (IARC). 1982. Monographs on the evaluation of carcinogenic risk of chemicals to humans, Volume 29. Some industrial chemicals and dyestuffs, World Health Organization, Lyon, France, p. 345–389. Docket EPA–HQ–OAR–2009–0472–0366.

[350] Irons, R.D.; Stillman, W.S.; Colagiovanni, D.B.; Henry, V.A. 1992. Synergistic action of the benzene metabolite hydroquinone on myelopoietic stimulating activity of granulocyte/macrophage colony-stimulating factor in vitro, Proc. Natl. Acad. Sci. 89:3691–3695. Docket EPA–HQ–OAR–2009–0472–0370.

[351] International Agency for Research on Cancer (IARC). 1982. Monographs on the evaluation of carcinogenic risk of chemicals to humans, Volume 29. Some industrial chemicals and dyestuffs, World Health Organization, Lyon, France. Docket EPA–HQ–OAR–2009–0472–0366.

[352] U.S. Department of Health and Human Services National Toxicology Program 11th Report on Carcinogens available at: *http://ntp.niehs.nih.gov/go/16183.*

[353] Aksoy, M. (1989). Hematotoxicity and carcinogenicity of benzene. Environ. Health Perspect. 82: 193–197. Docket EPA–HQ–OAR–2009–0472–0368.

[354] Goldstein, B.D. (1988). Benzene toxicity. Occupational medicine. State of the Art Reviews. 3: 541–554. Docket EPA–HQ–OAR–2009–0472–0325.

[355] Rothman, N., G.L. Li, M. Dosemeci, W.E. Bechtold, G.E. Marti, Y.Z. Wang, M. Linet, L.Q. Xi, W. Lu, M.T. Smith, N. Titenko-Holland, L.P. Zhang, W. Blot, S.N. Yin, and R.B. Hayes (1996) Hematotoxicity among Chinese workers heavily exposed to benzene. Am. J. Ind. Med. 29: 236–246. Docket EPA–HQ–OAR–2009–0472–0326.

[356] U.S. EPA (2002) Toxicological Review of Benzene (Noncancer Effects). Environmental Protection Agency, Integrated Risk Information System (IRIS), Research and Development, National Center for Environmental Assessment, Washington DC. This material is available electronically at *http://www.epa.gov/iris/subst/0276.htm.* Docket EPA–HQ–OAR–2009–0472–0327.

[357] Qu, O.; Shore, R.; Li, G.; Jin, X.; Chen, C.L.; Cohen, B.; Melikian, A.; Eastmond, D.; Rappaport, S.; Li, H.; Rupa, D.; Suramaya, R.; Songnian, W.; Huifant, Y.; Meng, M.; Winnik, M.; Kwok, E.; Li, Y.; Mu, R.; Xu, B.; Zhang, X.; Li, K. (2003) HEI Report 115, Validation & Evaluation of Biomarkers in Workers Exposed to Benzene in China. Docket EPA–HQ–OAR–2009–0472–0328.

[358] Qu, Q., R. Shore, G. Li, X. Jin, L.C. Chen, B. Cohen, *et al.* (2002) Hematological changes among Chinese workers with a broad range of benzene exposures. Am. J. Industr. Med. 42: 275–285. Docket EPA–HQ–OAR–2009–0472–0329.

[359] Lan, Qing, Zhang, L., Li, G., Vermeulen, R., et al. (2004) Hematotoxically in Workers Exposed to

Continued

IRIS program has not yet evaluated these new data.

ii. 1,3-Butadiene

EPA has characterized 1,3-butadiene as carcinogenic to humans by inhalation.[361] [362] The IARC has determined that 1,3-butadiene is a human carcinogen and the U.S. DHHS has characterized 1,3-butadiene as a known human carcinogen.[363] [364] There are numerous studies consistently demonstrating that 1,3-butadiene is metabolized into genotoxic metabolites by experimental animals and humans. The specific mechanisms of 1,3-butadiene-induced carcinogenesis are unknown; however, the scientific evidence strongly suggests that the carcinogenic effects are mediated by genotoxic metabolites. Animal data suggest that females may be more sensitive than males for cancer effects associated with 1,3-butadiene exposure; there are insufficient data in humans from which to draw conclusions about sensitive subpopulations. 1,3-butadiene also causes a variety of reproductive and developmental effects in mice; no human data on these effects are available. The most sensitive effect was ovarian atrophy observed in a lifetime bioassay of female mice.[365]

iii. Formaldehyde

Since 1987, EPA has classified formaldehyde as a probable human carcinogen based on evidence in humans and in rats, mice, hamsters, and monkeys.[366] EPA is currently reviewing recently published epidemiological data. For instance, research conducted by the National Cancer Institute (NCI) found an increased risk of nasopharyngeal cancer and lymphohematopoietic malignancies such as leukemia among workers exposed to formaldehyde.[367] [368] In an analysis of the lymphohematopoietic cancer mortality from an extended follow-up of these workers, NCI confirmed an association between lymphohematopoietic cancer risk and peak exposures.[369] A recent National Institute of Occupational Safety and Health (NIOSH) study of garment workers also found increased risk of death due to leukemia among workers exposed to formaldehyde.[370] Extended follow-up of a cohort of British chemical workers did not find evidence of an increase in nasopharyngeal or lymphohematopoietic cancers, but a continuing statistically significant excess in lung cancers was reported.[371] Recently, the IARC re-classified formaldehyde as a human carcinogen (Group 1).[372]

Formaldehyde exposure also causes a range of noncancer health effects, including irritation of the eyes (burning and watering of the eyes), nose and throat. Effects from repeated exposure in humans include respiratory tract irritation, chronic bronchitis and nasal epithelial lesions such as metaplasia and loss of cilia. Animal studies suggest that formaldehyde may also cause airway inflammation—including eosinophil infiltration into the airways. There are several studies that suggest that formaldehyde may increase the risk of asthma—particularly in the young.[373] [374]

iv. Acetaldehyde

Acetaldehyde is classified in EPA's IRIS database as a probable human carcinogen, based on nasal tumors in rats, and is considered toxic by the inhalation, oral, and intravenous routes.[375] Acetaldehyde is reasonably anticipated to be a human carcinogen by the U.S. DHHS in the 11th Report on Carcinogens and is classified as possibly carcinogenic to humans (Group 2B) by the IARC.[376] [377] EPA is currently conducting a reassessment of cancer risk from inhalation exposure to acetaldehyde.

The primary noncancer effects of exposure to acetaldehyde vapors include irritation of the eyes, skin, and respiratory tract.[378] In short-term (4 week) rat studies, degeneration of olfactory epithelium was observed at various concentration levels of

Low Levels of Benzene. Science 306: 1774–1776. Docket EPA–HQ–OAR–2009–0472–0330.

[360] Turtletaub, K.W. and Mani, C. (2003) Benzene metabolism in rodents at doses relevant to human exposure from Urban Air. Research Reports Health Effect Inst. Report No.113. Docket EPA–HQ–OAR–2009–0472–0385.

[361] U.S. EPA (2002) Health Assessment of 1,3-Butadiene. Office of Research and Development, National Center for Environmental Assessment, Washington Office, Washington, DC. Report No. EPA600–P–98–001F. This document is available electronically at *http://www.epa.gov/iris/supdocs/buta-sup.pdf.* Docket EPA–HQ–OAR–2009–0472–0386.

[362] U.S. EPA (2002) Full IRIS Summary for 1,3-butadiene (CASRN 106–99–0). Environmental Protection Agency, Integrated Risk Information System (IRIS), Research and Development, National Center for Environmental Assessment, Washington, DC. *http://www.epa.gov/iris/subst/0139.htm.* Docket EPA–HQ–OAR–2009–0472–1660

[363] International Agency for Research on Cancer (IARC) (1999) Monographs on the evaluation of carcinogenic risk of chemicals to humans, Volume 71, Re-evaluation of some organic chemicals, hydrazine and hydrogen peroxide and Volume 97 (in preparation), World Health Organization, Lyon, France. Docket EPA–HQ–OAR–2009–0472–0387.

[364] U.S. Department of Health and Human Services (2005) National Toxicology Program 11th Report on Carcinogens available at: *ntp.niehs.nih.gov/index.cfm?objectid=32BA9724-F1F6-975E-7FCE50709CB4C932.*

[365] Bevan, C.; Stadler, J.C.; Elliot, G.S.; *et al.* (1996) Subchronic toxicity of 4-vinylcyclohexene in rats and mice by inhalation. Fundam. Appl. Toxicol. 32:1–10. Docket EPA–HQ–OAR–2009–0472–0388.

[366] U.S. EPA (1987) Assessment of Health Risks to Garment Workers and Certain Home Residents from Exposure to Formaldehyde, Office of Pesticides and Toxic Substances, April 1987. Docket EPA–HQ–OAR–2009–0472–0389.

[367] Hauptmann, M.; Lubin, J.H.; Stewart, P.A.; Hayes, R.B.; Blair, A. 2003. Mortality from lymphohematopoetic malignancies among workers in formaldehyde industries. Journal of the National Cancer Institute 95: 1615–1623. Docket EPA–HQ–OAR–2009–0472–0336.

[368] Hauptmann, M..; Lubin, J.H.; Stewart, P.A.; Hayes, R.B.; Blair, A. 2004. Mortality from solid cancers among workers in formaldehyde industries. American Journal of Epidemiology 159: 1117–1130. Docket EPA–HQ–OAR–2009–0472–0337.

[369] Beane Freeman, L.E.; Blair, A.; Lubin, J.H.; Stewart, P.A.; Hayes, R.B.; Hoover, R.N.; Hauptmann, M. 2009. Mortality from lymphohematopoietic malignancies among workers in formaldehyde industries: The National Cancer Institute cohort. J. National Cancer Inst. 101: 751–761. Docket EPA–HQ–OAR–2009–0472–0338.

[370] Pinkerton, L.E. 2004. Mortality among a cohort of garment workers exposed to formaldehyde: an update. Occup. Environ. Med. 61: 193–200. Docket EPA–HQ–OAR–2009–0472–0339.

[371] Coggon, D, EC Harris, J Poole, KT Palmer. 2003. Extended follow-up of a cohort of British chemical workers exposed to formaldehyde. J National Cancer Inst. 95:1608–1615. Docket EPA–HQ–OAR–2009–0472–0340.

[372] International Agency for Research on Cancer (IARC). 2006. Formaldehyde, 2-Butoxyethanol and 1-tert-Butoxypropan-2-ol. Volume 88. (in preparation), World Health Organization, Lyon, France. Docket EPA–HQ–OAR–2009–0472–1164.

[373] Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for Formaldehyde. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service. *http://www.atsdr.cdc.gov/toxprofiles/tp111.html* Docket EPA–HQ–OAR–2009–0472–1191.

[374] WHO (2002) Concise International Chemical Assessment Document 40: Formaldehyde. Published under the joint sponsorship of the United Nations Environment Programme, the International Labour Organization, and the World Health Organization, and produced within the framework of the Inter-Organization Programme for the Sound Management of Chemicals. Geneva. Docket EPA–HQ–OAR–2009–0472–1199.

[375] U.S. EPA. 1991. Integrated Risk Information System File of Acetaldehyde. Research and Development, National Center for Environmental Assessment, Washington, DC. This material is available electronically at *http://www.epa.gov/iris/subst/0290.htm.* Docket EPA–HQ–OAR–2009–0472–0390.

[376] U.S. Department of Health and Human Services National Toxicology Program 11th Report on Carcinogens available at: *ntp.niehs.nih.gov/index.cfm?objectid=32BA9724-F1F6-975E-7FCE50709CB4C932.*

[377] International Agency for Research on Cancer (IARC). 1999. Re-evaluation of some organic chemicals, hydrazine, and hydrogen peroxide. IARC Monographs on the Evaluation of Carcinogenic Risk of Chemical to Humans, Vol 71. Lyon, France. Docket EPA–HQ–OAR–2009–0472–0387.

[378] U.S. EPA. 1991. Integrated Risk Information System File of Acetaldehyde. This material is available electronically at *http://www.epa.gov/iris/subst/0290.htm.*

acetaldehyde exposure.[379] [380] Data from these studies were used by EPA to develop an inhalation reference concentration. Some asthmatics have been shown to be a sensitive subpopulation to decrements in functional expiratory volume (FEV1 test) and bronchoconstriction upon acetaldehyde inhalation.[381] The agency is currently conducting a reassessment of the health hazards from inhalation exposure to acetaldehyde.

v. Acrolein

Acrolein is extremely acrid and irritating to humans when inhaled, with acute exposure resulting in upper respiratory tract irritation, mucus hypersecretion and congestion. The intense irritancy of this carbonyl has been demonstrated during controlled tests in human subjects, who suffer intolerable eye and nasal mucosal sensory reactions within minutes of exposure.[382] These data and additional studies regarding acute effects of human exposure to acrolein are summarized in EPA's 2003 IRIS Human Health Assessment for acrolein.[383] Evidence available from studies in humans indicate that levels as low as 0.09 ppm (0.21 mg/m^3) for five minutes may elicit subjective complaints of eye irritation with increasing concentrations leading to more extensive eye, nose and respiratory symptoms.[384] Lesions to the lungs and upper respiratory tract of rats, rabbits, and hamsters have been observed after subchronic exposure to acrolein.[385] Acute exposure effects in animal studies report bronchial hyper-responsiveness.[386] In a recent study, the acute respiratory irritant effects of exposure to 1.1 ppm acrolein were more pronounced in mice with allergic airway disease by comparison to non-diseased mice which also showed decreases in respiratory rate.[387] Based on these animal data and demonstration of similar effects in humans (*e.g.,* reduction in respiratory rate), individuals with compromised respiratory function (*e.g.,* emphysema, asthma) are expected to be at increased risk of developing adverse responses to strong respiratory irritants such as acrolein.

EPA determined in 2003 that the human carcinogenic potential of acrolein could not be determined because the available data were inadequate. No information was available on the carcinogenic effects of acrolein in humans and the animal data provided inadequate evidence of carcinogenicity.[388] The IARC determined in 1995 that acrolein was not classifiable as to its carcinogenicity in humans.[389]

vi. Polycyclic Organic Matter (POM)

POM is generally defined as a large class of organic compounds which have multiple benzene rings and a boiling point greater than 100 degrees Celsius. Many of the compounds included in the class of compounds known as POM are classified by EPA as probable human carcinogens based on animal data. One of these compounds, naphthalene, is discussed separately below. Polycyclic aromatic hydrocarbons (PAHs) are a subset of POM that contain only hydrogen and carbon atoms. A number of PAHs are known or suspected carcinogens. Recent studies have found that maternal exposures to PAHs (a subclass of POM) in a population of pregnant women were associated with several adverse birth outcomes, including low birth weight and reduced length at birth, as well as impaired cognitive development at age three.[390] [391] EPA has not yet evaluated these recent studies.

vii. Naphthalene

Naphthalene is found in small quantities in gasoline and diesel fuels. Naphthalene emissions have been measured in larger quantities in both gasoline and diesel exhaust compared with evaporative emissions from mobile sources, indicating it is primarily a product of combustion. EPA released an external review draft of a reassessment of the inhalation carcinogenicity of naphthalene based on a number of recent animal carcinogenicity studies.[392] The draft reassessment completed external peer review.[393] Based on external peer review comments received, additional analyses are being undertaken. This external review draft does not represent official agency opinion and was released solely for the purposes of external peer review and public comment. The National Toxicology Program listed naphthalene as "reasonably anticipated to be a human carcinogen" in 2004 on the basis of bioassays reporting clear evidence of carcinogenicity in rats and some evidence of carcinogenicity in mice.[394] California EPA has released a new risk assessment for naphthalene, and the

[379] Appleman, L. M., R. A. Woutersen, V. J. Feron, R. N. Hooftman, and W. R. F. Notten. 1986. Effects of the variable versus fixed exposure levels on the toxicity of acetaldehyde in rats. *J. Appl. Toxicol.* 6: 331–336.

[380] Appleman, L.M., R.A. Woutersen, and V.J. Feron. 1982. Inhalation toxicity of acetaldehyde in rats. I. Acute and subacute studies. *Toxicology.* 23: 293–297. Docket EPA–HQ–OAR–2009–0472–0392.

[381] Myou, S.; Fujimura, M.; Nishi K.; Ohka, T.; and Matsuda, T. 1993. Aerosolized acetaldehyde induces histamine-mediated bronchoconstriction in asthmatics. *Am. Rev. Respir.Dis.*148(4 Pt 1): 940–3. Docket EPA–HQ–OAR–2009–0472–0408.

[382] Sim VM, Pattle RE. Effect of possible smog irritants on human subjects JAMA165: 1980–2010, 1957. Docket EPA–HQ–OAR–2009–0472–0395.

[383] U.S. EPA (U.S. Environmental Protection Agency). (2003) Toxicological review of acrolein in support of summary information on Integrated Risk Information System (IRIS) National Center for Environmental Assessment, Washington, DC. EPA/635/R–03/003. Available online at: *http://www.epa.gov/ncea/iris.*

[384] Weber-Tschopp, A; Fischer, T; Gierer, R; *et al.* (1977) Experimentelle reizwirkungen von Acrolein auf den Menschen. Int Arch Occup Environ Hlth 40(2):117–130. In German Docket EPA–HQ–OAR–2009–0472–0394.

[385] Integrated Risk Information System File of Acrolein. Office of Research and Development, National Center for Environmental Assessment, Washington, DC. This material is available at *http://www.epa.gov/iris/subst/0364.htm.* Docket EPA–HQ–OAR–2009–0472–0391.

[386] U.S. EPA (U.S. Environmental Protection Agency). (2003) Toxicological review of acrolein in support of summary information on Integrated Risk Information System (IRIS) National Center for Environmental Assessment, Washington, DC. EPA/635/R–03/003. Available online at: *http://www.epa.gov/ncea/iris.*

[387] Morris JB, Symanowicz PT, Olsen JE, *et al.* 2003. Immediate sensory nerve-mediated respiratory responses to irritants in healthy and allergic airway-diseased mice. J Appl Physiol 94(4):1563–1571. Docket EPA–HQ–OAR–2009–0472–0396.

[388] U.S. EPA 2003. Integrated Risk Information System File of Acrolein. Research and Development, National Center for Environmental Assessment, Washington, DC. This material is available at *http://www.epa.gov/iris/subst/0364.htm.*

[389] International Agency for Research on Cancer (IARC). 1995. Monographs on the evaluation of carcinogenic risk of chemicals to humans, Volume 63. Dry cleaning, some chlorinated solvents and other industrial chemicals, World Health Organization, Lyon, France. Docket EPA–HQ–OAR–2009–0472–0393.

[390] Perera, F.P.; Rauh, V.; Tsai, W–Y.; *et al.* (2002) Effect of transplacental exposure to environmental pollutants on birth outcomes in a multiethnic population. *Environ Health Perspect.* 111: 201–205. Docket EPA–HQ–OAR–2009–0472–0372.

[391] Perera, F.P.; Rauh, V.; Whyatt, R.M.; Tsai, W.Y.; Tang, D.; Diaz, D.; Hoepner, L.; Barr, D.; Tu, Y.H.; Camann, D.; Kinney, P. (2006) Effect of prenatal exposure to airborne polycyclic aromatic hydrocarbons on neurodevelopment in the first 3 years of life among inner-city children. Environ Health Perspect 114: 1287–1292. Docket EPA–HQ–OAR–2009–0472–0373.

[392] U.S. EPA 2004. Toxicological Review of Naphthalene (Reassessment of the Inhalation Cancer Risk), Environmental Protection Agency, Integrated Risk Information System, Research and Development, National Center for Environmental Assessment, Washington, DC. This material is available electronically at *http://www.epa.gov/iris/subst/0436.htm.* Docket EPA–HQ–OAR–2009–0472–0272.

[393] Oak Ridge Institute for Science and Education. (2004). External Peer Review for the IRIS Reassessment of the Inhalation Carcinogenicity of Naphthalene. August 2004. *http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=84403.* Docket EPA–HQ–OAR–2009–0472–0273.

[394] National Toxicology Program (NTP). (2004). 11th Report on Carcinogens. Public Health Service, U.S. Department of Health and Human Services, Research Triangle Park, NC. Available from: *http://ntp-server.niehs.nih.gov.*

IARC has reevaluated naphthalene and re-classified it as Group 2B: possibly carcinogenic to humans.[395] Naphthalene also causes a number of chronic non-cancer effects in animals, including abnormal cell changes and growth in respiratory and nasal tissues.[396]

viii. Other Air Toxics

In addition to the compounds described above, other compounds in gaseous hydrocarbon and PM emissions from vehicles will be affected by this final rule. Mobile source air toxic compounds that would potentially be impacted include ethylbenzene, propionaldehyde, toluene, and xylene. Information regarding the health effects of these compounds can be found in EPA's IRIS database.[397]

f. Exposure and Health Effects Associated With Traffic

Populations who live, work, or attend school near major roads experience elevated exposure concentrations to a wide range of air pollutants, as well as higher risks for a number of adverse health effects. While the previous sections of this preamble have focused on the health effects associated with individual criteria pollutants or air toxics, this section discusses the mixture of different exposures near major roadways, rather than the effects of any single pollutant. As such, this section emphasizes traffic-related air pollution, in general, as the relevant indicator of exposure rather than any particular pollutant.

Concentrations of many traffic-generated air pollutants are elevated for up to 300–500 meters downwind of roads with high traffic volumes.[398] Numerous sources on roads contribute to elevated roadside concentrations, including exhaust and evaporative emissions, and resuspension of road dust and tire and brake wear. Concentrations of several criteria and hazardous air pollutants are elevated near major roads. Furthermore, different semi-volatile organic compounds and chemical components of particulate matter, including elemental carbon, organic material, and trace metals, have been reported at higher concentrations near major roads.

Populations near major roads experience greater risk of certain adverse health effects. The Health Effects Institute published a report on the health effects of traffic-related air pollution.[399] It concluded that evidence is "sufficient to infer the presence of a causal association" between traffic exposure and exacerbation of childhood asthma symptoms. The HEI report also concludes that the evidence is either "sufficient" or "suggestive but not sufficient" for a causal association between traffic exposure and new childhood asthma cases. A review of asthma studies by Salam et al. (2008) reaches similar conclusions.[400] The HEI report also concludes that there is "suggestive" evidence for pulmonary function deficits associated with traffic exposure, but concluded that there is "inadequate and insufficient" evidence for causal associations with respiratory health care utilization, adult-onset asthma, COPD symptoms, and allergy. A review by Holguin (2008) notes that the effects of traffic on asthma may be modified by nutrition status, medication use, and genetic factors.[401]

The HEI report also concludes that evidence is "suggestive" of a causal association between traffic exposure and all-cause and cardiovascular mortality. There is also evidence of an association between traffic-related air pollutants and cardiovascular effects such as changes in heart rhythm, heart attack, and cardiovascular disease. The HEI report characterizes this evidence as "suggestive" of a causal association, and an independent epidemiological literature review by Adar and Kaufman (2007) concludes that there is "consistent evidence" linking traffic-related pollution and adverse cardiovascular health outcomes.[402]

Some studies have reported associations between traffic exposure and other health effects, such as birth outcomes (*e.g.,* low birth weight) and childhood cancer. The HEI report concludes that there is currently "inadequate and insufficient" evidence for a causal association between these effects and traffic exposure. A review by Raaschou-Nielsen and Reynolds (2006) concluded that evidence of an association between childhood cancer and traffic-related air pollutants is weak, but noted the inability to draw firm conclusions based on limited evidence.[403]

There is a large population in the U.S. living in close proximity of major roads. According to the Census Bureau's American Housing Survey for 2007, approximately 20 million residences in the U.S., 15.6% of all homes, are located within 300 feet (91 m) of a highway with 4+ lanes, a railroad, or an airport.[404] Therefore, at current population of approximately 309 million, assuming that population and housing similarly distributed, there are over 48 million people in the U.S. living near such sources. The HEI report also notes that in two North American cities, Los Angeles and Toronto, over 40% of each city's population live within 500 meters of a highway or 100 meters of a major road. It also notes that about 33% of each city's population resides within 50 meters of major roads. Together, the evidence suggests that a large U.S. population lives in areas with elevated traffic-related air pollution.

People living near roads are often socioeconomically disadvantaged. According to the 2007 American Housing Survey, a renter-occupied property is over twice as likely as an owner-occupied property to be located near a highway with 4+ lanes, railroad or airport. In the same survey, the median household income of rental housing occupants was less than half that of owner-occupants ($28,921/$59,886). Numerous studies in individual urban areas report higher levels of traffic-related air pollutants in areas with high minority or poor populations.[405 406 407]

[395] International Agency for Research on Cancer (IARC). (2002). Monographs on the Evaluation of the Carcinogenic Risk of Chemicals for Humans. Vol. 82. Lyon, France. Docket EPA–HQ–OAR–2009–0472–0274.

[396] U.S. EPA. 1998. Toxicological Review of Naphthalene, Environmental Protection Agency, Integrated Risk Information System, Research and Development, National Center for Environmental Assessment, Washington, DC. This material is available electronically at *http://www.epa.gov/iris/subst/0436.htm.*

[397] U.S. EPA Integrated Risk Information System (IRIS) database is available at: *http://www.epa.gov/iris.*

[398] Zhou, Y.; Levy, J.I. (2007) Factors influencing the spatial extent of mobile source air pollution impacts: a meta-analysis. BMC Public Health 7: 89. doi:10.1186/1471–2458–7–89.

[399] HEI Panel on the Health Effects of Air Pollution. (2010) Traffic-related air pollution: a critical review of the literature on emissions, exposure, and health effects. [Online at *http://www.healtheffects.org*].

[400] Salam, M.T.; Islam, T.; Gilliland, F.D. (2008) Recent evidence for adverse effects of residential proximity to traffic sources on asthma. Current Opin Pulm Med 14: 3–8.

[401] Holguin, F. (2008) Traffic, outdoor air pollution, and asthma. Immunol Allergy Clinics North Am 28: 577–588.

[402] Adar, S.D.; Kaufman, J.D. (2007) Cardiovascular disease and air pollutants: evaluating and improving epidemiological data implicating traffic exposure. Inhal Toxicol 19: 135–149.

[403] Raaschou-Nielsen, O.; Reynolds, P. (2006) Air pollution and childhood cancer: A review of the epidemiological literature. Int J Cancer 118: 2920–2929.

[404] U.S. Census Bureau (2008) American Housing Survey for the United States in 2007. Series H–150 (National Data), Table 1A–6. [Accessed at *http://www.census.gov/hhes/www/housing/ahs/ahs07/ahs07.html* on January 22, 2009]

[405] Lena, T.S.; Ochieng, V.; Carter, M.; Holguín-Veras, J.; Kinney, P.L. (2002) Elemental carbon and $PM_{2.5}$ levels in an urban community heavily impacted by truck traffic. Environ Health Perspect 110: 1009–1015.

[406] Wier, M.; Sciammas, C.; Seto, E.; Bhatia, R.; Rivard, T. (2009) Health, traffic, and environmental

Students may also be exposed in situations where schools are located near major roads. In a study of nine metropolitan areas across the U.S., Appatova et al. (2008) found that on average greater than 33% of schools were located within 400 m of an Interstate, U.S., or State highway, while 12% were located within 100 m.[408] The study also found that among the metropolitan areas studied, schools in the Eastern U.S. were more often sited near major roadways than schools in the Western U.S.

Demographic studies of students in schools near major roadways suggest that this population is more likely than the general student population to be of non-white race or Hispanic ethnicity, and more often live in low socioeconomic status locations.[409] [410] [411] There is some inconsistency in the evidence, which may be due to different local development patterns and measures of traffic and geographic scale used in the studies.[408]

4. Environmental Effects of Non-GHG Pollutants

In this section we discuss some of the environmental effects of PM and its precursors such as visibility impairment, atmospheric deposition, and materials damage and soiling, as well as environmental effects associated with the presence of ozone in the ambient air, such as impacts on plants, including trees, agronomic crops and urban ornamentals, and environmental effects associated with air toxics. No substantive comments were received on the environmental effects of non-GHG pollutants.

a. Visibility

Visibility can be defined as the degree to which the atmosphere is transparent to visible light.[412] Visibility impairment is caused by light scattering and absorption by suspended particles and gases. Visibility is important because it has direct significance to people's enjoyment of daily activities in all parts of the country. Individuals value good visibility for the well-being it provides them directly, where they live and work, and in places where they enjoy recreational opportunities. Visibility is also highly valued in significant natural areas, such as national parks and wilderness areas, and special emphasis is given to protecting visibility in these areas. For more information on visibility see the final 2009 PM ISA.[413]

EPA is pursuing a two-part strategy to address visibility. First, EPA has concluded that $PM_{2.5}$ causes adverse effects on visibility in various locations, depending on PM concentrations and factors such as chemical composition and average relative humidity, and has set secondary $PM_{2.5}$ standards.[414] The secondary $PM_{2.5}$ standards act in conjunction with the regional haze program. The regional haze rule (64 FR 35714) was put in place in July 1999 to protect the visibility in mandatory class I Federal areas. There are 156 national parks, forests and wilderness areas categorized as mandatory class I Federal areas (62 FR 38680–81, July 18, 1997).[415] Visibility can be said to be impaired in both $PM_{2.5}$ nonattainment areas and mandatory class I Federal areas.

b. Plant and Ecosystem Effects of Ozone

Elevated ozone levels contribute to environmental effects, with impacts to plants and ecosystems being of most concern. Ozone can produce both acute and chronic injury in sensitive species depending on the concentration level and the duration of the exposure. Ozone effects also tend to accumulate over the growing season of the plant, so that even low concentrations experienced for a longer duration have the potential to create chronic stress on vegetation. Ozone damage to plants includes visible injury to leaves and impaired photosynthesis, both of which can lead to reduced plant growth and reproduction, resulting in reduced crop yields, forestry production, and use of sensitive ornamentals in landscaping. In addition, the impairment of photosynthesis, the process by which the plant makes carbohydrates (its source of energy and food), can lead to a subsequent reduction in root growth and carbohydrate storage below ground, resulting in other, more subtle plant and ecosystems impacts.

These latter impacts include increased susceptibility of plants to insect attack, disease, harsh weather, interspecies competition and overall decreased plant vigor. The adverse effects of ozone on forest and other natural vegetation can potentially lead to species shifts and loss from the affected ecosystems, resulting in a loss or reduction in associated ecosystem goods and services. Lastly, visible ozone injury to leaves can result in a loss of aesthetic value in areas of special scenic significance like national parks and wilderness areas. The final 2006 Ozone Air Quality Criteria Document presents more detailed information on ozone effects on vegetation and ecosystems.

c. Atmospheric Deposition

Wet and dry deposition of ambient particulate matter delivers a complex mixture of metals (*e.g.,* mercury, zinc, lead, nickel, aluminum, cadmium), organic compounds (*e.g.,* POM, dioxins, furans) and inorganic compounds (*e.g.,* nitrate, sulfate) to terrestrial and aquatic ecosystems. The chemical form of the compounds deposited depends on a variety of factors including ambient conditions (*e.g.,* temperature, humidity, oxidant levels) and the sources of the material. Chemical and physical transformations of the compounds occur in the atmosphere as well as the media onto which they deposit. These transformations in turn influence the fate, bioavailability and potential toxicity of these compounds. Atmospheric deposition has been identified as a key component of the environmental and human health hazard posed by several pollutants including mercury, dioxin and PCBs.[416]

Adverse impacts on water quality can occur when atmospheric contaminants deposit to the water surface or when

justice: collaborative research and community action in San Francisco, California. Am J Public Health 99: S499–S504.

[407] Forkenbrock, D.J. and L.A. Schweitzer, *Environmental Justice and Transportation Investment Policy.* Iowa City: University of Iowa, 1997.

[408] Appatova, A.S.; Ryan, P.H.; LeMasters, G.K.; Grinshpun, S.A. (2008) Proximal exposure of public schools and students to major roadways: a nationwide U.S. survey. J Environ Plan Mgmt

[409] Green, R.S.; Smorodinsky, S.; Kim, J.J.; McLaughlin, R.; Ostro, B. (2004) Proximity of California public schools to busy roads. Environ Health Perspect 112: 61–66.

[410] Houston, D.; Ong, P.; Wu, J.; Winer, A. (2006) Proximity of licensed child care facilities to near-roadway vehicle pollution. Am J Public Health 96: 1611–1617.

[411] Wu, Y.; Batterman, S. (2006) Proximity of schools in Detroit, Michigan to automobile and truck traffic. J Exposure Sci Environ Epidemiol 16: 457–470.

[412] National Research Council, 1993. Protecting Visibility in National Parks and Wilderness Areas. National Academy of Sciences Committee on Haze in National Parks and Wilderness Areas. National Academy Press, Washington, DC. Docket EPA–HQ–OAR–2005–0161. This book can be viewed on the National Academy Press Web site at *http://www.nap.edu/books/0309048443/html/.*

[413] U.S. EPA (2009). Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–08/139F, 2009. Docket EPA–HQ–OAR–2009–0472–11295.

[414] The existing annual primary and secondary $PM_{2.5}$ standards have been remanded and are being addressed in the currently ongoing PM NAAQS review.

[415] These areas are defined in CAA section 162 as those national parks exceeding 6,000 acres, wilderness areas and memorial parks exceeding 5,000 acres, and all international parks which were in existence on August 7, 1977.

[416] U.S. EPA (2000) Deposition of Air Pollutants to the Great Waters: Third Report to Congress. Office of Air Quality Planning and Standards. EPA–453/R–00–0005. Docket EPA–HQ–OAR–2009–0472–0091.

material deposited on the land enters a waterbody through runoff. Potential impacts of atmospheric deposition to waterbodies include those related to both nutrient and toxic inputs. Adverse effects to human health and welfare can occur from the addition of excess nitrogen via atmospheric deposition. The nitrogen-nutrient enrichment contributes to toxic algae blooms and zones of depleted oxygen, which can lead to fish kills, frequently in coastal waters. Deposition of heavy metals or other toxics may lead to the human ingestion of contaminated fish, impairment of drinking water, damage to the marine ecology, and limits to recreational uses. Several studies have been conducted in U.S. coastal waters and in the Great Lakes Region in which the role of ambient PM deposition and runoff is investigated.[417] [418] [419] [420] [421]

Atmospheric deposition of nitrogen and sulfur contributes to acidification, altering biogeochemistry and affecting animal and plant life in terrestrial and aquatic ecosystems across the U.S. The sensitivity of terrestrial and aquatic ecosystems to acidification from nitrogen and sulfur deposition is predominantly governed by geology. Prolonged exposure to excess nitrogen and sulfur deposition in sensitive areas acidifies lakes, rivers and soils. Increased acidity in surface waters creates inhospitable conditions for biota and affects the abundance and nutritional value of preferred prey species, threatening biodiversity and ecosystem function. Over time, acidifying deposition also removes essential nutrients from forest soils, depleting the capacity of soils to neutralize future acid loadings and negatively affecting forest sustainability. Major effects include a decline in sensitive forest tree species, such as red spruce (*Picea rubens*) and sugar maple (*Acer saccharum*), and a loss of biodiversity of fishes, zooplankton, and macro invertebrates.

In addition to the role nitrogen deposition plays in acidification, nitrogen deposition also leads to nutrient enrichment and altered biogeochemical cycling. In aquatic systems increased nitrogen can alter species assemblages and cause eutrophication. In terrestrial systems nitrogen loading can lead to loss of nitrogen sensitive lichen species, decreased biodiversity of grasslands, meadows and other sensitive habitats, and increased potential for invasive species. For a broader explanation of the topics treated here, refer to the description in Section 7.1.2 of the RIA.

Adverse impacts on soil chemistry and plant life have been observed for areas heavily influenced by atmospheric deposition of nutrients, metals and acid species, resulting in species shifts, loss of biodiversity, forest decline and damage to forest productivity. Potential impacts also include adverse effects to human health through ingestion of contaminated vegetation or livestock (as in the case for dioxin deposition), reduction in crop yield, and limited use of land due to contamination.

Atmospheric deposition of pollutants can reduce the aesthetic appeal of buildings and culturally important articles through soiling, and can contribute directly (or in conjunction with other pollutants) to structural damage by means of corrosion or erosion. Atmospheric deposition may affect materials principally by promoting and accelerating the corrosion of metals, by degrading paints, and by deteriorating building materials such as concrete and limestone. Particles contribute to these effects because of their electrolytic, hygroscopic, and acidic properties, and their ability to adsorb corrosive gases (principally sulfur dioxide).

d. Environmental Effects of Air Toxics

Fuel combustion emissions contribute to ambient levels of pollutants that contribute to adverse effects on vegetation. Volatile organic compounds (VOCs), some of which are considered air toxics, have long been suspected to play a role in vegetation damage.[422] In laboratory experiments, a wide range of tolerance to VOCs has been observed.[423] Decreases in harvested seed pod weight have been reported for the more sensitive plants, and some studies have reported effects on seed germination, flowering and fruit ripening. Effects of individual VOCs or their role in conjunction with other stressors (*e.g.,* acidification, drought, temperature extremes) have not been well studied. In a recent study of a mixture of VOCs including ethanol and toluene on herbaceous plants, significant effects on seed production, leaf water content and photosynthetic efficiency were reported for some plant species.[424]

Research suggests an adverse impact of vehicle exhaust on plants, which has in some cases been attributed to aromatic compounds and in other cases to nitrogen oxides.[425] [426] [427] The impacts of VOCs on plant reproduction may have long-term implications for biodiversity and survival of native species near major roadways. Most of the studies of the impacts of VOCs on vegetation have focused on short-term exposure and few studies have focused on long-term effects of VOCs on vegetation and the potential for metabolites of these compounds to affect herbivores or insects.

5. Air Quality Impacts of Non-GHG Pollutants

Air quality modeling was performed to assess the impact of the vehicle standards on criteria and air toxic pollutants. In this section, we present information on current modeled levels of pollution as well as projections for 2030, with respect to ambient $PM_{2.5}$, ozone, selected air toxics, visibility levels and nitrogen and sulfur deposition. The air quality modeling results indicate that the GHG standards have relatively small but measureable impacts on ambient concentrations of these pollutants. The results are discussed in more detail below and in Section 7.2 of the RIA. No substantive

[417] U.S. EPA (2004) National Coastal Condition Report II. Office of Research and Development/ Office of Water. EPA–620/R–03/002. Docket EPA–HQ–OAR–2009–0472–0089.

[418] Gao, Y., E.D. Nelson, M.P. Field, et al. 2002. Characterization of atmospheric trace elements on $PM_{2.5}$ particulate matter over the New York-New Jersey harbor estuary. *Atmos. Environ.* 36: 1077–1086. Docket EPA–HQ–OAR–2009–0472–11297.

[419] Kim, G., N. Hussain, J.R. Scudlark, and T.M. Church. 2000. Factors influencing the atmospheric depositional fluxes of stable Pb, 210Pb, and 7Be into Chesapeake Bay. *J. Atmos. Chem.* 36: 65–79. Docket EPA–HQ–OAR–2009–0472–11299.

[420] Lu, R., R.P. Turco, K. Stolzenbach, *et al.* 2003. Dry deposition of airborne trace metals on the Los Angeles Basin and adjacent coastal waters. *J. Geophys. Res.* 108(D2, 4074): AAC 11–1 to 11–24. Docket EPA–HQ–OAR–2009–0472–11296.

[421] Marvin, C.H., M.N. Charlton, E.J. Reiner, et al. 2002. Surficial sediment contamination in Lakes Erie and Ontario: A comparative analysis. *J. Great Lakes Res.* 28(3): 437–450. Docket EPA–HQ–OAR–2009–0472–11300.

[422] U.S. EPA. 1991. Effects of organic chemicals in the atmosphere on terrestrial plants. EPA/600/3–91/001. Docket EPA–HQ–OAR–2009–0472–0401.

[423] Cape JN, ID Leith, J Binnie, J Content, M Donkin, M Skewes, DN Price AR Brown, AD Sharpe. 2003. Effects of VOCs on herbaceous plants in an open-top chamber experiment. Environ. Pollut. 124:341–343. Docket EPA–HQ–OAR–2009–0472–0357.

[424] Cape JN, ID Leith, J Binnie, J Content, M Donkin, M Skewes, DN Price AR Brown, AD Sharpe. 2003. Effects of VOCs on herbaceous plants in an open-top chamber experiment. Environ. Pollut. 124:341–343. Docket EPA–HQ–OAR–2009–0472–0357.

[425] Viskari E–L. 2000. Epicuticular wax of Norway spruce needles as indicator of traffic pollutant deposition. Water, Air, and Soil Pollut. 121:327–337. Docket EPA–HQ–OAR–2009–0472–1128.

[426] Ugrekhelidze D, F Korte, G Kvesitadze. 1997. Uptake and transformation of benzene and toluene by plant leaves. Ecotox. Environ. Safety 37:24–29. Docket EPA–HQ–OAR–2009–0472–1142.

[427] Kammerbauer H, H Selinger, R Rommelt, A Ziegler-Jons, D Knoppik, B Hock. 1987. Toxic components of motor vehicle emissions for the spruce Picea abies. Environ. Pollut. 48:235–243. Docket EPA–HQ–OAR–2009–0472–0358.

comments were received on our plans for non-GHG air quality modeling that were detailed in the proposal for this rule.

We used the Community Multi-scale Air Quality (CMAQ) photochemical model, version 4.7.1, for our analysis. This version of CMAQ includes a number of improvements to previous versions of the model. These improvements are discussed in Section 7.2 of the RIA.

a. Particulate Matter

i. Current Levels

$PM_{2.5}$ concentrations exceeding the level of the $PM_{2.5}$ NAAQS occur in many parts of the country. In 2005, EPA designated 39 nonattainment areas for the 1997 $PM_{2.5}$ NAAQS (70 FR 943, January 5, 2005). These areas are composed of 208 full or partial counties with a total population exceeding 88 million. The 1997 $PM_{2.5}$ NAAQS was revised in 2006 and the 2006 24-hour $PM_{2.5}$ NAAQS became effective on December 18, 2006. On October 8, 2009, the EPA issued final nonattainment area designations for the 2006 24-hour $PM_{2.5}$ NAAQS (74 FR 58688, November 13, 2009). These designations include 31 areas composed of 120 full or partial counties with a population of over 70 million. In total, there are 54 $PM_{2.5}$ nonattainment areas composed of 243 counties with a population of almost 102 million people.

ii. Projected Levels Without This Rule

States with $PM_{2.5}$ nonattainment areas are required to take action to bring those areas into compliance in the future. Areas designated as not attaining the 1997 $PM_{2.5}$ NAAQS will need to attain the 1997 standards in the 2010 to 2015 time frame, and then maintain them thereafter. The 2006 24-hour $PM_{2.5}$ nonattainment areas will be required to attain the 2006 24-hour $PM_{2.5}$ NAAQS in the 2014 to 2019 time frame and then be required to maintain the 2006 24-hour $PM_{2.5}$ NAAQS thereafter. The vehicle standards finalized in this action become effective in 2012 and therefore may be useful to states in attaining or maintaining the $PM_{2.5}$ NAAQS.

EPA has already adopted many emission control programs that are expected to reduce ambient $PM_{2.5}$ levels and which will assist in reducing the number of areas that fail to achieve the $PM_{2.5}$ NAAQS. Even so, our air quality modeling projects that in 2030, with all current controls but excluding the impacts of the vehicle standards adopted here, at least 9 counties with a population of almost 28 million may not attain the 1997 annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ and 26 counties with a population of over 41 million may not attain the 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. These numbers do not account for those areas that are close to (*e.g.,* within 10 percent of) the $PM_{2.5}$ standards. These areas, although not violating the standards, will also benefit from any reductions in $PM_{2.5}$ ensuring long-term maintenance of the $PM_{2.5}$ NAAQS.

iii. Projected Levels With This Rule

Air quality modeling performed for this final rule shows that in 2030 the majority of the modeled counties will see decreases of less than 0.05 $\mu g/m^3$ in their annual $PM_{2.5}$ design values. The decreases in annual $PM_{2.5}$ design values that we see in some counties are likely due to emission reductions related to lower gasoline production at existing oil refineries; reductions in direct $PM_{2.5}$ emissions and $PM_{2.5}$ precursor emissions (NO_X and SO_X) contribute to reductions in ambient concentrations of both direct $PM_{2.5}$ and secondarily-formed $PM_{2.5}$. The maximum projected decrease in an annual $PM_{2.5}$ design value is 0.07 $\mu g/m^3$ in Harris County, TX. There are also a few counties that are projected to see increases of no more than 0.01 $\mu g/m^3$ in their annual $PM_{2.5}$ design values. These small increases in annual $PM_{2.5}$ design values are likely related to downstream emission increases. On a population-weighted basis, the average modeled 2030 annual $PM_{2.5}$ design value is projected to decrease by 0.01 $\mu g/m^3$ due to this final rule. Those counties that are projected to be above the annual $PM_{2.5}$ standard in 2030 will see slightly larger population-weighted decreases of 0.03 $\mu g/m^3$ in their design values due to this final rule.

In addition to looking at annual $PM_{2.5}$ design values, we also modeled the impact of the standards on 24-hour $PM_{2.5}$ design values. Air quality modeling performed for this final rule shows that in 2030 the majority of the modeled counties will see changes of between -0.05 $\mu g/m^3$ and +0.05 $\mu g/m^3$ in their 24-hour $PM_{2.5}$ design values. The decreases in 24-hour $PM_{2.5}$ design values that we see in some counties are likely due to emission reductions related to lower gasoline production at existing oil refineries; reductions in direct $PM_{2.5}$ emissions and $PM_{2.5}$ precursor emissions (NO_X and SO_X) contribute to reductions in ambient concentrations of both direct $PM_{2.5}$ and secondarily-formed $PM_{2.5}$. The maximum projected decrease in a 24-hour $PM_{2.5}$ design value is 0.21 $\mu g/m^3$ in Harris County, TX. There are also some counties that are projected to see increases of less than 0.05 $\mu g/m^3$ in their 24-hour $PM_{2.5}$ design values. These small increases in 24-hour $PM_{2.5}$ design values are likely related to downstream emission increases. On a population-weighted basis, the average modeled 2030 24-hour $PM_{2.5}$ design value is projected to decrease by 0.01 $\mu g/m^3$ due to this final rule. Those counties that are projected to be above the 24-hour $PM_{2.5}$ standard in 2030 will see slightly larger population-weighted decreases of 0.05 $\mu g/m^3$ in their design values due to this final rule.

b. Ozone

i. Current Levels

8-hour ozone concentrations exceeding the level of the ozone NAAQS occur in many parts of the country. In 2008, the EPA amended the ozone NAAQS (73 FR 16436, March 27, 2008). The final 2008 ozone NAAQS rule set forth revisions to the previous 1997 NAAQS for ozone to provide increased protection of public health and welfare. EPA recently proposed to reconsider the 2008 ozone NAAQS (75 FR 2938, January 19, 2010). Because of the uncertainty the reconsideration proposal creates regarding the continued applicability of the 2008 ozone NAAQS, EPA has used its authority to extend by 1 year the deadline for promulgating designations for those NAAQS (75 FR 2936, January 19, 2010). The new deadline is March 12, 2011. EPA intends to complete the reconsideration by August 31, 2010. If EPA establishes new ozone NAAQS as a result of the reconsideration, they would replace the 2008 ozone NAAQS and requirements to designate areas and implement the 2008 NAAQS would no longer apply.

As of January 6, 2010 there are 51 areas designated as nonattainment for the 1997 8-hour ozone NAAQS, comprising 266 full or partial counties with a total population of over 122 million people. These numbers do not include the people living in areas where there is a future risk of failing to maintain or attain the 1997 8-hour ozone NAAQS. The numbers above likely underestimate the number of counties that are not meeting the ozone NAAQS because the nonattainment areas associated with the more stringent 2008 8-hour ozone NAAQS have not yet been designated. Table III.G.5–1 provides an estimate, based on 2005–07 air quality data, of the counties with design values greater than the 2008 8-hour ozone NAAQS of 0.075 ppm.

TABLE III.G.5–1—COUNTIES WITH DESIGN VALUES GREATER THAN THE OZONE NAAQS

	Number of counties	Population [a]
1997 Ozone Standard: Counties within the 54 areas currently designated as nonattainment (as of 1/6/10)	266	122,343,799
2008 Ozone Standard: Additional counties that would not meet the 2008 NAAQS (based on 2006–2008 air quality data) [b]	156	36,678,478
Total	422	159,022,277

NOTES:
[a] Population numbers are from 2000 census data.
[b] Area designations for the 2008 ozone NAAQS have not yet been made. Nonattainment for the 2008 Ozone NAAQS would be based on three years of air quality data from later years. Also, the county numbers in this row include only the counties with monitors violating the 2008 Ozone NAAQS. The numbers in this table may be an underestimate of the number of counties and populations that will eventually be included in areas with multiple counties designated nonattainment.

ii. Projected Levels Without This Rule

States with 8-hour ozone nonattainment areas are required to take action to bring those areas into compliance in the future. Based on the final rule designating and classifying 8-hour ozone nonattainment areas for the 1997 standard (69 FR 23951, April 30, 2004), most 8-hour ozone nonattainment areas will be required to attain the ozone NAAQS in the 2007 to 2013 time frame and then maintain the NAAQS thereafter. As noted, EPA is reconsidering the 2008 ozone NAAQS. If EPA promulgates different ozone NAAQS in 2010 as a result of the reconsideration, these standards would replace the 2008 ozone NAAQS and there would no longer be a requirement to designate areas for the 2008 NAAQS. EPA would designate nonattainment areas for a potential new 2010 primary ozone NAAQS in 2011. The attainment dates for areas designated nonattainment for a potential new 2010 primary ozone NAAQS are likely to be in the 2014 to 2031 timeframe, depending on the severity of the problem.[428]

EPA has already adopted many emission control programs that are expected to reduce ambient ozone levels and assist in reducing the number of areas that fail to achieve the ozone NAAQS. Even so, our air quality modeling projects that in 2030, with all current controls but excluding the impacts of the vehicle standards, up to 16 counties with a population of almost 35 million may not attain the 2008 ozone standard of 0.075 ppm (75 ppb). These numbers do not account for those areas that are close to (*e.g.,* within 10 percent of) the 2008 ozone standard. These areas, although not violating the standards, will also be impacted by changes in ozone as they work to ensure long-term maintenance of the ozone NAAQS.

iii. Projected Levels With This Rule

We do not expect this rule to have a meaningful impact on ozone concentrations, given the small magnitude of the ozone impacts and the fact that much of the impact is due to ethanol assumptions that are independent of this rule. Our modeling projects increases in ozone design value concentrations in many areas of the country and decreases in ozone design value concentrations in a few areas. However, the increases in ozone design values are not due to the standards finalized in this rule, but are related to our assumptions about the volume of ethanol that will be blended into gasoline. The ethanol volumes will be occurring as a result of the recent Renewable Fuel Standards (RFS2) rule.[429]

The ethanol volume assumptions are discussed in the introduction to Section III.G of this preamble. We attribute decreased fuel consumption and production from this program to gasoline only, while assuming constant ethanol volumes in our reference and control cases. Holding ethanol volumes constant while decreasing gasoline volumes increases the market share of 10% ethanol (E10) in the control case. However, the increased E10 market share is projected to occur regardless of this rule; in the RFS2 analysis we project 100% E10 by 2014. The air quality impacts of this effect are included in our analyses for the recent RFS2 rule. As the RFS2 analyses indicate, increasing usage of E10 fuels (when compared with E0 fuels) can increase NO_X emissions and thereby increase ozone concentrations, especially in NO_X-limited areas where relatively small amounts of NO_X enable ozone to form rapidly.[430]

The majority of the ozone design value increases are less than 0.1 ppb. The maximum projected increase in an 8-hour ozone design value is 0.25 ppb in Richland County, South Carolina. As mentioned above there are some areas which see decreases in their ozone design values. The decreases in ambient ozone concentration are likely due to projected upstream emissions decreases in NO_X and VOCs from reduced gasoline production. The maximum decrease projected in an 8-hour ozone design value is 0.22 ppb in Riverside County, California. On a population-weighted basis, the average modeled 8-hour ozone design values are projected to increase by 0.01 ppb in 2030 and the design values for those counties that are projected to be above the 2008 ozone standard in 2030 will see population-weighted decreases of 0.10 ppb.

c. Air Toxics

i. Current Levels

The majority of Americans continue to be exposed to ambient concentrations of air toxics at levels which have the potential to cause adverse health effects.[431] The levels of air toxics to which people are exposed vary depending on where people live and work and the kinds of activities in which they engage, as discussed in detail in U.S. EPA's most recent Mobile Source Air Toxics Rule.[432] According to the National Air Toxic Assessment

[428] U.S. EPA 2010, Fact Sheet Revisions to Ozone Standards. *http://www.epa.gov/groundlevelozone/pdfs/fs20100106std.pdf.*

[429] EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006, February 2010. Docket EPA–HQ–OAR–2009–0472–11332. *See also* 75 FR 14670, March 26, 2010.

[430] Sections 3.4.2.1.2 and 3.4.3.3 of the Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis, EPA–420–R–10–006, February 2010. Docket EPA–HQ–OAR–2009–0472–11332.

[431] U.S. EPA (2009) 2002 National-Scale Air Toxics Assessment. *http://www.epa.gov/ttn/atw/nata2002/.* Docket EPA–HQ–OAR–2009–0472–11321.

[432] U.S. Environmental Protection Agency (2007). Control of Hazardous Air Pollutants from Mobile Sources; Final Rule. 72 FR 8434, February 26, 2007. Docket EPA–HQ–OAR–2009–0472–0271, 0271.1 and 0271.2.

(NATA) for 2002,[433] mobile sources were responsible for 47 percent of outdoor toxic emissions, over 50 percent of the cancer risk, and over 80 percent of the noncancer hazard. Benzene is the largest contributor to cancer risk of all 124 pollutants quantitatively assessed in the 2002 NATA and mobile sources were responsible for 59 percent of benzene emissions in 2002. Over the years, EPA has implemented a number of mobile source and fuel controls resulting in VOC reductions, which also reduce benzene and other air toxic emissions.

ii. Projected Levels

Our modeling indicates that the GHG standards have relatively little impact on national average ambient concentrations of the modeled air toxics. Additional detail on the air toxics results can be found in Section 7.2.2.3 of the RIA.

d. Nitrogen and Sulfur Deposition

i. Current Levels

Over the past two decades, the EPA has undertaken numerous efforts to reduce nitrogen and sulfur deposition across the U.S. Analyses of long-term monitoring data for the U.S. show that deposition of both nitrogen and sulfur compounds has decreased over the last 17 years although many areas continue to be negatively impacted by deposition. Deposition of inorganic nitrogen and sulfur species routinely measured in the U.S. between 2004 and 2006 were as high as 9.6 kilograms of nitrogen per hectare per year (kg N/ha/yr) and 21.3 kilograms of sulfur per hectare per year (kg S/ha/yr). The data show that reductions were more substantial for sulfur compounds than for nitrogen compounds. These numbers are generated by the U.S. national monitoring network and they likely underestimate nitrogen deposition because neither ammonia nor organic nitrogen is measured. In the eastern U.S., where data are most abundant, total sulfur deposition decreased by about 44% between 1990 and 2007, while total nitrogen deposition decreased by 25% over the same time frame.[434]

ii. Projected Levels

Our air quality modeling does not show substantial overall nationwide impacts on the annual total sulfur and nitrogen deposition occurring across the U.S. as a result of the vehicle standards required by this rule. For sulfur deposition the vehicle standards will result in annual percent decreases of 0.5% to more than 2% in locations with refineries as a result of the lower output from refineries due to less gasoline usage. These locations include the Texas and Louisiana portions of the Gulf Coast; the Washington DC area; Chicago, IL; portions of Oklahoma and northern Texas; Bismarck, North Dakota; Billings, Montana; Casper, Wyoming; Salt Lake City, Utah; Seattle, Washington; and San Francisco, Los Angeles, and San Luis Obispo, California. The remainder of the country will see only minimal changes in sulfur deposition, ranging from decreases of less than 0.5% to increases of less than 0.5%. For a map of 2030 sulfur deposition impacts and additional information on these impacts, *see* Section 7.2.2.5 of the RIA. The impacts of the vehicle standards on nitrogen deposition are minimal, ranging from decreases of up to 0.5% to increases of up to 0.5%.

e. Visibility

i. Current Levels

As mentioned in Section III.G.5.a, millions of people live in nonattainment areas for the $PM_{2.5}$ NAAQS. These populations, as well as large numbers of individuals who travel to these areas, are likely to experience visibility impairment. In addition, while visibility trends have improved in mandatory class I Federal areas, the most recent data show that these areas continue to suffer from visibility impairment. In summary, visibility impairment is experienced throughout the U.S., in multi-State regions, urban areas, and remote mandatory class I Federal areas.

ii. Projected Levels

Air quality modeling conducted for this final rule was used to project visibility conditions in 138 mandatory class I Federal areas across the U.S. in 2030. The results show that all the modeled areas will continue to have annual average deciview levels above background in 2030.[435] The results also indicate that the majority of the modeled mandatory class I Federal areas will see no change in their visibility, but some mandatory class I Federal areas will see improvements in visibility due to the vehicle standards and a few mandatory class I Federal areas will see visibility decreases. The average visibility at all modeled mandatory class I Federal areas on the 20% worst days is projected to improve by 0.002 deciviews, or 0.01%, in 2030. Section 7.2.2.6.2 of the RIA contains more detail on the visibility portion of the air quality modeling.

H. What are the estimated cost, economic, and other impacts of the program?

In this section, EPA presents the costs and impacts of EPA's GHG program. It is important to note that NHTSA's CAFE standards and EPA's GHG standards will both be in effect, and each will lead to average fuel economy increases and CO_2 emissions reductions. The two agencies' standards comprise the National Program, and this discussion of costs and benefits of EPA's GHG standard does not change the fact that both the CAFE and GHG standards, jointly, are the source of the benefits and costs of the National Program. These costs and benefits are appropriately analyzed separately by each agency and should not be added together.

This section outlines the basis for assessing the benefits and costs of the GHG standards and provides estimates of these costs and benefits. Some of these effects are private, meaning that they affect consumers and producers directly in their sales, purchases, and use of vehicles. These private effects include the upfront costs of the technology, fuel savings, and the benefits of additional driving and reduced refueling. Other costs and benefits affect people outside the markets for vehicles and their use; these effects are termed external, because they affect people in ways other than the effect on the market for and use of new vehicles and are generally not taken into account by the purchaser of the vehicle. The external effects include the climate impacts, the effects on non-GHG pollutants, energy security impacts, and the effects on traffic, accidents, and noise due to additional driving. The sum of the private and external benefits and costs is the net social benefits of the program. There is some debate about the

[433] U.S. EPA (2009) 2002 National-Scale Air Toxics Assessment. *http://www.epa.gov/ttn/atw/nata2002/*. Docket EPA–HQ–OAR–2009–0472–11321.

[434] U.S. EPA. U.S. EPA's 2008 Report on the Environment (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–07/045F (NTIS PB2008–112484). Docket EPA–HQ–OAR–2009–0472–11298. Updated data available online at: *http://cfpub.epa.gov/eroe/index.cfm?fuseaction=detail.viewInd&ch=46&subtop=341&lv=list.listByChapter&r=201744.*

[435] The level of visibility impairment in an area is based on the light-extinction coefficient and a unitless visibility index, called a "deciview", which is used in the valuation of visibility. The deciview metric provides a scale for perceived visual changes over the entire range of conditions, from clear to hazy. Under many scenic conditions, the average person can generally perceive a change of one deciview. The higher the deciview value, the worse the visibility. Thus, an improvement in visibility is a decrease in deciview value.

role of private benefits in assessing the benefits and costs of the program: If consumers optimize their purchases of fuel economy, with full information and perfect foresight, in perfectly efficient markets, it is possible that they have already considered these benefits in their vehicle purchase decisions. If so, then no net private benefits would result from the program, because consumers would already buy vehicles with the amount of fuel economy that is optimal for them; requiring additional fuel economy would alter both the purchase prices of new cars and their lifetime streams of operating costs in ways that will inevitably reduce consumers' well-being. If these conditions do not hold, then the private benefits and costs would both count toward the program's benefits. Section III.H.1 discusses this issue more fully.

The net benefits of EPA's final program consist of the effects of the program on:

- The vehicle program costs (costs of complying with the vehicle CO_2 standards, taking into account FFV credits through 2015, the temporary lead-time alternative allowance standard program (TLAASP), full car/truck trading, and the A/C credit program, and other flexibilities built into the final program),
- Fuel savings associated with reduced fuel usage resulting from the program,
- Greenhouse gas emissions,
- Other pollutants,
- Noise, congestion, accidents,
- Energy security impacts,
- Reduced refueling events
- Increased driving due to the "rebound" effect.

EPA also presents the cost-effectiveness of the standards.

The total monetized benefits (excluding fuel savings) under the program are projected to be $17.5 to $41.8 billion in 2030, using a 3 percent discount rate applied to the valuation of $PM_{2.5}$-related premature mortality and depending on the value used for the social cost of carbon. The total monetized benefits (excluding fuel savings) under the program are projected to be $17.4 to $41.7 billion in 2030, using a 7 percent discount rate applied to the valuation of $PM_{2.5}$-related premature mortality and depending on the value used for the social cost of carbon. These benefits are summarized below in Table III.H.10–2. The costs of the program in 2030 are estimated to be approximately $15.8 billion for new vehicle technology less $79.8 billion in savings realized by consumers through fewer fuel expenditures (calculated using pre-tax fuel prices). These costs are summarized below in Table III.H.10–1. The estimates developed here use as a baseline for comparison the fuel economy associated with MY 2011 vehicles. To the extent that greater fuel economy improvements than those assumed to occur under the baseline may have occurred due to market forces alone (absent the rule), the analysis overestimates private and social net benefits.

EPA has undertaken an analysis of the economy-wide impacts of the GHG tailpipe standards as an exploratory exercise that EPA believes could provide additional insights into the potential impacts of the program.[436] These results were not a factor regarding the appropriateness of the GHG tailpipe standards. It is important to note that the results of this modeling exercise are dependent on the assumptions associated with how producers will make fuel economy improvements and how consumers will respond to increases in higher vehicle costs and improved vehicle fuel economy as a result of the program. Section III.H.1 discusses the underlying distinctions and implications of the role of consumer response in economic impacts.

Further information on these and other aspects of the economic impacts of our rule are summarized in the following sections and are presented in more detail in the RIA for this rulemaking.

1. Conceptual Framework for Evaluating Consumer Impacts

For this rule, EPA projects significant private gains to consumers in three major areas: (1) Reductions in spending on fuel, (2) time saved due to less refueling, and (3) welfare gains from additional driving that results from the rebound effect. In combination, these private savings, mostly from fuel savings, appear to outweigh by a large margin the costs of the program, even without accounting for externalities.

Admittedly, these findings pose an economic conundrum. On the one hand, consumers are expected to gain significantly from the rules, as the increased cost of fuel efficient cars appears to be far smaller than the fuel savings. Yet these technologies are readily available; financially savvy consumers could have sought vehicles with improved fuel efficiency, and auto makers seeking those customers could have offered them. Assuming full information, perfect foresight, perfect competition, and financially rational consumers and producers, standard economic theory suggests that normal market operations would have provided the private net gains to consumers, and the only benefits of the rule would be due to external benefits. If our analysis projects net private benefits that consumers have not realized in this perfectly functioning market, then increased fuel economy should be accompanied by a corresponding loss in consumer welfare. This calculation assumes that consumers accurately predict and act on all the benefits they will get from a new vehicle, and that producers market products providing those benefits. The existence of large private net benefits from this rule, then, suggests either that the assumptions noted above do not hold, or that EPA's analysis has missed some factor(s) tied to improved fuel economy that reduce(s) consumer welfare.

With respect to the latter, EPA believes the costs of the technologies developed for this rule take into account the cost needed to ensure that all vehicle qualities (including performance, reliability, and size) stay constant, except for fuel economy and vehicle price. As a result, there would need to be some other changed qualities that would reduce the benefits consumers receive from their vehicles. Changing circumstances (*e.g.,* increased demand for horsepower in response to a drop in fuel prices), and any changes in vehicle attributes that manufacturers elect to make may result in additional private impacts to vehicle buyers from requiring increased fuel economy. Most comments generally supported the cost estimates and the maintenance of vehicle quality, though two comments expressed concern over unspecified losses to vehicle quality. Even if there is some such unidentified loss (which, given existing evidence and modeling capabilities, is very difficult to quantify), EPA believes that under realistic assumptions, the private gains from the rule, together with the social gains (in the form of reduction of externalities), will continue to substantially outweigh the costs.

The central conundrum has been referred to as the Energy Paradox in this setting (and in several others).[437] In short, the problem is that consumers appear not to purchase products that are in their economic self-interest. There are

[436] *See* Memorandum to Docket, "Economy-Wide Impacts of Proposed Greenhouse Gas Tailpipe Standards," March 4, 2010. Docket EPA–HQ–OAR–2009–0472.

[437] Jaffe, A.B., and Stavins, R.N. (1994). The Energy Paradox and the Diffusion of Conservation Technology. Resource and Energy Economics, 16(2), 91–122. Docket EPA–HQ–OAR–2009–0472–11415.

strong theoretical reasons why this might be so:[438]

- Consumers might be myopic and hence undervalue the long-term.
- Consumers might lack information or a full appreciation of information even when it is presented.
- Consumers might be especially averse to the short-term losses associated with the higher prices of energy efficient products relative to the uncertain future fuel savings, even if the expected present value of those fuel savings exceeds the cost (the behavioral phenomenon of "loss aversion")
- Even if consumers have relevant knowledge, the benefits of energy-efficient vehicles might not be sufficiently salient to them at the time of purchase, and the lack of salience might lead consumers to neglect an attribute that it would be in their economic interest to consider.
- In the case of vehicle fuel efficiency, and perhaps as a result of one or more of the foregoing factors, consumers may have relatively few choices to purchase vehicles with greater fuel economy once other characteristics, such as vehicle class, are chosen.[439]

A great deal of work in behavioral economics identifies and elaborates factors of this sort, which help account for the Energy Paradox.[440] This point holds in the context of fuel savings (the main focus here), but it applies equally to the other private benefits, including reductions in refueling time and additional driving.[441] For example, it might well be questioned whether significant reductions in refueling time, and corresponding private savings, are fully internalized when consumers are making purchasing decisions.

Considerable research findings indicate that the Energy Paradox is real and significant but the literature has not reached a consensus about the reasons for its existence. Several researchers have found evidence suggesting that consumers do not give full or appropriate weight to fuel economy in purchasing decisions. For example, Sanstad and Howarth[442] argue that consumers optimize behavior without full information by resorting to imprecise but convenient rules of thumb. Some studies find that a substantial portion of this undervaluation can be explained by inaccurate assessments of energy savings, or by uncertainty and irreversibility of energy investments due to fluctuations in energy prices.[443] For a number of reasons, consumers may undervalue future energy savings due to routine mistakes in how they evaluate these trade-offs. For instance, the calculation of fuel savings is complex, and consumers may not make it correctly.[444] The attribute of fuel economy may be insufficiently salient, leading to a situation in which consumers pay less than $1 for an expected $1 benefit in terms of discounted gasoline costs.[445] Larrick and Soll (2008) find that consumers do not understand how to translate changes in miles-per-gallon into fuel savings (a concern that EPA is continuing to attempt to address).[446] In addition, future fuel price (a major component of fuel savings) is highly uncertain. Consumer fuel savings also vary across individuals, who travel different amounts and have different driving styles. Cost calculations based on the average do not distinguish between those that may gain or lose as a result of the policy.[447] Studies regularly show that fuel economy plays a role in consumers' vehicle purchases, but modeling that role is still in development, and there is no consensus that most consumers make fully informed tradeoffs.[448]

Some studies find that a substantial portion of the Energy Paradox can be explained in models of consumer behavior. For instance, one set of studies finds that accounting for uncertainty in fuel savings over time due to unanticipated changes in fuel prices goes a long way toward explaining this paradox. In this case, consumers give up some uncertain future fuel savings to avoid higher upfront costs.

A recent review commissioned by EPA supports the finding of great variability, by looking at one key parameter: The role of fuel economy in consumers' vehicle purchase decisions.[449] The review finds no

[438] For an overview, *see id.*

[439] For instance, the range of fuel economy (combined city and highway) available among all listed 2010 6-cylinder minivans is 18 to 20 miles per gallon. With a manual-transmission 4-cylinder minivan, it is possible to get 24 mpg. *See http://www.fueleconomy.gov,* which is jointly maintained by the U.S. Department of Energy and the EPA. For recent but unpublished evidence, see Allcott, Hunt, and Nathan Wozny, "Gasoline Prices, Fuel Economy, and the Energy Paradox" (2010), available at *http://web.mit.edu/allcott/www/Allcott%20and%20Wozny%202010%20-%20Gasoline%20Prices,%20Fuel%20Economy,%20and%20the%20Energy%20Paradox.pdf.*

[440] Jaffe, A.B., and Stavins, R.N. (1994). The Energy Paradox and the Diffusion of Conservation Technology. Resource and Energy Economics, 16(2), 91–122. Docket EPA–HQ–OAR–2009–0472–11415. *See* also Allcott and Wozny, supra note.

[441] For example, it might be maintained that, at the time of purchase, consumers take full account of the time spent refueling potentially saved by fuel-efficient cars, but it might also be questioned whether they have adequate information to do so, or whether that factor is sufficiently salient to play the proper role in purchasing decisions.

[442] Sanstad, A., and R. Howarth (1994). "'Normal' Markets, Market Imperfections, and Energy Efficiency." Energy Policy 22(10): 811–818 (Docket EPA–HQ–OAR–2009–0472–11416).

[443] Greene, D., J. German, and M. Delucchi (2009). "Fuel Economy: The Case for Market Failure" in Reducing Climate Impacts in the Transportation Sector, Sperling, D., and J. Cannon, eds. Springer Science (Docket EPA–HQ–OAR–2009–0472–11538); Dasgupta, S., S. Siddarth, and J. Silva-Risso (2007). "To Lease or to Buy? A Structural Model of a Consumer's Vehicle and Contract Choice Decisions." Journal of Marketing Research 44: 490–502 (Docket EPA–HQ–OAR–2009–0472–11539); Metcalf, G., and D. Rosenthal (1995). "The 'New' View of Investment Decisions and Public Policy Analysis: An Application to Green Lights and Cold Refrigerators," Journal of Policy Analysis and Management 14: 517–531 (Docket EPA–HQ–OAR–2009–0472–11540); Hassett, K., and G. Metcalf (1995), "Energy Tax Credits and Residential Conservation Investment: Evidence from Panel Data," *Journal of Public Economics* 57: 201–217 (Docket EPA–HQ–OAR–2009–0472–11543); Metcalf, G., and K. Hassett (1999), "Measuring the Energy Savings from Home Improvement Investments: Evidence from Monthly Billing Data," *The Review of Economics and Statistics* 81(3): 516–528 (Docket EPA–HQ–OAR–2009–0472–0051); van Soest D., and E. Bulte (2001), "Does the Energy-Efficiency Paradox Exist? Technological Progress and Uncertainty." *Environmental and Resource Economics* 18: 101–12 (Docket EPA–HQ–OAR–2009–0472–11542).

[444] Turrentine, T. and K. Kurani (2007). "Car Buyers and Fuel Economy?" Energy Policy 35: 1213–1223 (Docket EPA–HQ–OAR–2009–0472); Larrick, R.P., and J.B. Soll (2008). "The MPG illusion." *Science* 320: 1593–1594 (Docket EPA–HQ–OAR–2009–0472–0041).

[445] Allcott, Hunt, and Nathan Wozny, "Gasoline Prices, Fuel Economy, and the Energy Paradox" (2010), available at *http://web.mit.edu/allcott/www/Allcott%20and%20Wozny%202010%20-%20Gasoline%20Prices,%20Fuel%20Economy,%20and%20the%20Energy%20Paradox.pdf* (Docket EPA–HQ–OAR–2009–0472–11554).

[446] Sanstad, A., and R. Howarth (1994). "'Normal' Markets, Market Imperfections, and Energy Efficiency." Energy Policy 22(10): 811–818 (Docket EPA–HQ–OAR–2009–0472–11415); Larrick, R. P., and J.B. Soll (2008). "The MPG illusion." *Science* 320: 1593–1594 (Docket EPA–HQ–OAR–2009–0472–0043).

[447] Hausman J., Joskow P. (1982). "Evaluating the Costs and Benefits of Appliance Efficiency Standards." *American Economic Review* 72: 220–25 (Docket EPA–HQ–OAR–2009–0472–11541).

[448] *E.g.,* Goldberg, Pinelopi Koujianou, "Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry," *Econometrica* 63(4) (July 1995): 891–951 (Docket EPA–HQ–OAR–2009–0472–0021); Goldberg, Pinelopi Koujianou, "The Effects of the Corporate Average Fuel Efficiency Standards in the U.S.," *Journal of Industrial Economics* 46(1) (March 1998): 1–33 (Docket EPA–HQ–OAR–2009–0472–0017); Busse, Meghan R., Christopher R. Knittel, and Florian Zettelmeyer (2009). "Pain at the Pump: How Gasoline Prices Affect Automobile Purchasing in New and Used Markets," Working paper (accessed 6/30/09), available at *http://www.econ.ucdavis.edu/faculty/knittel/papers/gaspaper_latest.pdf.* (Docket EPA–HQ–OAR–2009–0472–0044).

[449] Greene, David L. "How Consumers Value Fuel Economy: A Literature Review." EPA Report EPA–420–R–10–008, March 2010 (Docket EPA–HQ–OAR–2009–0472–11575).

consensus on the role of fuel economy in consumer purchase decisions. Of 27 studies, significant numbers of them find that consumers undervalue, overvalue, or value approximately correctly the fuel savings that they will receive from improved fuel economy. The variation in the value of fuel economy in these studies is so high that it appears to be inappropriate to identify one central estimate from the literature. Thus, estimating consumer response to higher vehicle fuel economy is still unsettled science.

If there is a difference between fuel savings and consumers' willingness to pay for fuel savings, the next question is, which is the appropriate measure of consumer benefit? Fuel savings measure the actual monetary value that consumers will receive after purchasing a vehicle; the willingness to pay for fuel economy measures the value that, before a purchase, consumers place on additional fuel economy. As noted, there are a number of reasons that consumers may incorrectly estimate the benefits that they get from improved fuel economy, including risk or loss aversion, and poor ability to calculate savings. Also as noted, fuel economy may not be as salient as other vehicle characteristics when a consumer is considering vehicles. If these arguments are valid, then there will be significant gains to consumers of the government mandating additional fuel economy.

EPA requested and received a number of comments discussing the role of the Energy Paradox in consumer vehicle purchase decisions. Ten commenters, primarily from a number of academic and non-governmental organizations, argued that there is a gap between the fuel economy that consumers purchased and the cost-effective amount, due to a number of market and behavioral phenomena. These include consumers having inadequate information about future fuel savings relative to up-front costs; imperfect competition among auto manufacturers; lack of choice over fuel economy within classes; lack of salience of fuel economy relative to other vehicle features at the time of vehicle purchase; consumer use of heuristic decision-making processes or other rules of thumb, rather than analyzing fuel economy decisions; consumer risk and loss aversion leading to more attention to up-front costs than future fuel savings; and consumer emphasis on visible, status-providing features of vehicles more than on relatively invisible features such as fuel economy. The RIA, Chapter 8.1.2, includes further discussion of these phenomena.

Because of the gap between the fuel economy consumers purchase and the cost-effective amount, those and additional commenters support using the full value of fuel savings as a benefit of the rule. A few asserted, in addition, that auto companies would benefit from offering vehicles with improved fuel economy. Automakers might underprovide fuel economy because they believe consumers would not buy it, or that it is not as salient as price when consumers are buying a vehicle. The commenters who supported the existence of the gap cite these phenomena as a basis for regulation of fuel economy. In contrast, two commenters (the United Auto Workers and one nonprofit research organization) argued that the market for fuel economy works efficiently; consumers reveal through their purchase decisions that additional fuel economy is not important for them. These commenters expressed concern that regulation to promote more fuel economy would limit consumers' choices as well as the value of the vehicles to consumers. Yet other commenters (including some states) noted that the rule protects the existing variety and choice of vehicles in the market; for this reason, the value of vehicles to consumers should not suffer as a result of the rule.

While acknowledging the diversity of perspectives, EPA continues to include the full fuel savings as private benefits of the rule. Improved fuel economy will significantly reduce consumer expenditures on fuel, thus benefiting consumers. It is true that limitations in modeling affect our ability to estimate how much of these savings would have occurred in the absence of the rule. For example, some of the technologies predicted to be adopted in response to the rule may already be developing due to shifts in consumer demand for fuel economy. It is possible that some of these savings would have occurred in the absence of the rule. To the extent that greater fuel economy improvements than those assumed to occur under the baseline may have occurred due to market forces alone (absent the rule), the analysis overestimates private and social net benefits. In the absence of robust means to identify the changes in fuel economy that would have occurred without the rule, we estimate the benefits and costs under the assumption that the rule will lead to more fuel-efficient vehicles than would have occurred without the rule. As discussed below, limitations in modeling also affect our ability to estimate the effects of the rule on net benefits in the market for vehicles.

Consumer vehicle choice models estimate what vehicles consumers buy based on vehicle and consumer characteristics. In principle, such models could provide a means of understanding both the role of fuel economy in consumers' purchase decisions and the effects of this rule on the benefits that consumers will get from vehicles. The NPRM included a discussion of the wide variation in the structure and results of these models. Models or model results have not frequently been systematically compared to each other. When they have, the results show large variation over, for instance, the value that consumers place on additional fuel economy. As a result, EPA found that further assessment needed to be done before adopting a consumer vehicle choice model. In the NPRM, EPA asked for comment on the state of the art of consumer vehicle choice modeling and whether it is sufficiently developed for use in regulatory analysis.

The responses were varied. Of the six commenters on this issue, five supported EPA's performing consumer vehicle choice modeling, but only in general terms; they did not provide recommendations for how to evaluate the quality of different models or identify a model appropriate for EPA's purposes. One commenter argued that, if key differences across models were controlled, then different models would produce similar results, but there were no suggestions for what choices to make to control the key differences. One commenter specifically asked for estimates that quantify losses to consumer welfare. Two commenters mentioned the importance of taking into account any losses in vehicle attributes due to increasing fuel economy, but without specific guidance for how to do so. Some commenters, including some who supported the use of these models, highlighted some of the models' potential limitations. Two commenters noted the challenges of modeling for vehicles that are not yet in the market. Most consumer vehicle choice models are based on existing vehicle fleets. Future vehicles will present combinations of vehicle characteristics not previously seen in markets, such as higher fuel economy and higher price with other characteristics constant; the existing models may not do well in predicting consumer responses to these changes. One comment suggested that the models might be sufficient for predicting changes in consumer purchase patterns, but not for calculating the welfare gains and losses to consumers of the changes.

EPA has not used a consumer vehicle choice model for the final rule analysis, due to concerns we explained in the

proposal (and discussed in Chapter 8.1 of the RIA), and because no new information became available to resolve those concerns. It is likely that variation exists in measuring consumer response to changes in fuel economy as well as other vehicle characteristics, such as performance. Thus, there does not appear to be evidence at this time to develop robust estimates of consumer welfare effects of changes in vehicle attributes. As noted earlier, EPA's and NHTSA's cost estimates are based on maintaining these other vehicle attributes. Comments generally supported the finding that our cost and technology estimates succeeded in maintaining these other attributes.

EPA will continue its efforts to review the literature, but, given the known difficulties, EPA has not conducted an analysis using these models for this program. These issues are discussed in detail in RIA Chapter 8.1.2.

The next issue is the potential for loss in consumer welfare due to the rule. As mentioned above (and discussed more thoroughly in Section III.D of this preamble), the technology cost estimates developed here take into account the costs to hold other vehicle attributes, such as size and performance, constant. In addition, the analysis assumes that the full technology costs are passed along to consumers. With these assumptions, because welfare losses are monetary estimates of how much consumers would have to be compensated to be made as well off as in the absence of the change,[450] the price increase measures the loss to the consumer.[451] Assuming that the full technology cost gets passed along to the consumer as an increase in price, the technology cost thus measures the welfare loss to the consumer. Increasing fuel economy would have to lead to other changes in the vehicles that consumers find undesirable for there to be additional losses not included in the technology costs.

At this time EPA has no available methods to estimate potential additional effects on consumers not included in the technology cost estimates, *e.g.,* due to changes in vehicles that consumers find undesirable, shifts in consumer demand for other attributes, and uncertainties about the long term reliability of new technologies. Comments on the rule generally supported EPA's analysis of the technology costs and the assumption that other vehicle characteristics were not adversely affected. Any consumer welfare loss cannot be quantified at this time. For reasons stated above, EPA believes that any such loss is likely far smaller than the private gains, including fuel savings and reduced refueling time.

Chapter 8.1 of the RIA discusses in more depth the research on the Energy Paradox and the state of the art of consumer vehicle choice modeling.

2. Costs Associated With the Vehicle Program

In this section, EPA presents our estimate of the costs associated with the final vehicle program. The presentation here summarizes the costs associated with the new vehicle technology expected to be added to meet the new GHG standards, including hardware costs to comply with the A/C credit program. The analysis summarized here provides our estimate of incremental costs on a per vehicle basis and on an annual total basis.

The presentation here summarizes the outputs of the OMEGA model that was discussed in some detail in Section III.D of this preamble. For details behind the analysis such as the OMEGA model inputs and the estimates of costs associated with individual technologies, the reader is directed to Chapters 1 and 2 of the RIA, and Chapter 3 of the Joint TSD. For more detail on the outputs of the OMEGA model and the overall vehicle program costs summarized here, the reader is directed to Chapters 4 and 7 of the RIA.

With respect to the cost estimates for vehicle technologies, EPA notes that, because these estimates relate to technologies which are in most cases already available, these cost estimates are technically robust. Some comments were received that addressed the technology costs that served as inputs to the OMEGA model as was mentioned in Section II.E. While those comments did not result in changes to the technology cost inputs, the technology cost estimates for a select group of technologies have changed since the NPRM thus changing the vehicle program costs presented here. These changes, as summarized in Section II.E and in Chapter 3 of the Joint TSD, were made in response to updated cost estimates, from the FEV teardown study, available to the agencies shortly after publication of the NPRM, not in response to comments. Those cost changes are summarized in Section II.E and in Chapter 3 of the Joint TSD. EPA believes that we have been conservative in estimating the vehicle hardware costs associated with this rule.

With respect to the aggregate cost estimations presented in Section III.H.2.b, EPA notes that there are a number of areas where the results of our analysis may be conservative and, in general, EPA believes we have directionally overestimated the costs of compliance with these new standards, especially in not accounting for the full range of credit opportunities available to manufacturers. For example, some cost saving programs are considered in our analysis, such as full car/truck trading, while others are not, such as early credit generation and advanced vehicle technology credits.

a. Vehicle Compliance Costs Associated With the CO_2 Standards

For the technology and vehicle package costs associated with adding new CO_2-reducing technology to vehicles, EPA began with EPA's 2008 Staff Report and NHTSA's 2011 CAFE FRM both of which presented costs generated using existing literature, meetings with manufacturers and parts suppliers, and meetings with other experts in the field of automotive cost estimation.[452] EPA has updated some of those technology costs with new information from our contract with FEV, through further discussion with NHTSA, and by converting from 2006 dollars to 2007 dollars using the GDP price deflator. The estimated costs presented here represent the incremental costs associated with this rule relative to what the future vehicle fleet would be expected to look like absent this rule. A more detailed description of the factors considered in our reference case is presented in Section III.D.

The estimates of vehicle compliance costs cover the years of implementation of the program—2012 through 2016. EPA has also estimated compliance costs for the years following implementation so that we can shed

[450] This approach describes the economic concept of compensating variation, a payment of money after a change that would make a consumer as well off after the change as before it. A related concept, equivalent variation, estimates the income change that would be an alternative to the change taking place. The difference between them is whether the consumer's point of reference is her welfare before the change (compensating variation) or after the change (equivalent variation). In practice, these two measures are typically very close together.

[451] Indeed, it is likely to be an overestimate of the loss to the consumer, because the consumer has choices other than buying the same vehicle with a higher price; she could choose a different vehicle, or decide not to buy a new vehicle. The consumer would choose one of those options only if the alternative involves less loss than paying the higher price. Thus, the increase in price that the consumer faces would be the upper bound of loss of consumer welfare, unless there are other changes to the vehicle due to the fuel economy improvements that make the vehicle less desirable to consumers.

[452] "EPA Staff Technical Report: Cost and Effectiveness Estimates of Technologies Used to Reduce Light-Duty Vehicle Carbon Dioxide Emissions," EPA 420–R–08–008; NHTSA 2011 CAFE FRM is at 74 FR 14196; both documents are contained in Docket EPA–HQ–OAR–2009–0472.

light on the long term (2022 and later) cost impacts of the program.[453] EPA used the year 2022 here because our short-term and long-term markup factors described shortly below are applied in five year increments with the 2012 through 2016 implementation span and the 2017 through 2021 span both representing the short-term. Some of the individual technology cost estimates are presented in brief in Section III.D, and account for both the direct and indirect costs incurred in the automobile manufacturing and dealer industries (for a complete presentation of technology costs, please refer to Chapter 3 of the Joint TSD). To account for the indirect costs, EPA has applied an indirect cost markup (ICM) factor to all of our direct costs to arrive at the estimated technology cost.[454] The ICM factors used range from 1.11 to 1.64 in the short-term (2012 through 2021), depending on the complexity of the given technology, to account for differences in the levels of R&D, tooling, and other indirect costs that will be incurred. Once the program has been fully implemented, some of the indirect costs will no longer be attributable to these standards and, as such, a lower ICM factor is applied to direct costs in years following full implementation. The ICM factors used range from 1.07 to 1.39 in the long-term (2022 and later) depending on the complexity of the given technology.[455] Note that the short-term ICMs are used in the 2012 through 2016 years of implementation and continue through 2021. EPA does this since the standards are still being implemented during the 2012 through 2016 model years. Therefore, EPA considers the five year period following full implementation also to be short-term. Note that, in general the comments received were supportive of our use of ICMs as opposed to the more traditional Retail Price Equivalent (RPE).[456] However, we did receive some comment that we applied inappropriate ICM factors to some technologies. We have not changed our approach in response to those comments as explained in greater detail in our Response to Comments document.

EPA has also considered the impacts of manufacturer learning on the technology cost estimates. Consistent with past EPA rulemakings, EPA has estimated that some costs would decline by 20 percent with each of the first two doublings of production beginning with the first year of implementation. These volume-based cost declines, which EPA calls "volume" based learning, take place after manufacturers have had the opportunity to find ways to improve upon their manufacturing processes or otherwise manufacture these technologies in a more efficient way. After two 20 percent cost reduction steps, the cost reduction learning curve flattens out considerably as only minor improvements in manufacturing techniques and efficiencies remain to be had. By then, costs decline roughly three percent per year as manufacturers and suppliers continually strive to reduce costs. These time-based cost declines, which EPA calls "time" based learning, take place at a rate of three percent per year. EPA has considered learning impacts on most but not all of the technologies expected to be used because some of the expected technologies are already used rather widely in the industry and, presumably, learning impacts have already occurred. EPA has considered volume-based learning for only a handful of technologies that EPA considers to be new or emerging technologies such as the hybrids and electric vehicles. For most technologies, EPA has considered them to be more established given their current use in the fleet and, hence, we have applied the lower time based learning. We have more discussion of our learning approach and the technologies to which we have applied which type of learning in Chapter 3 of the Joint TSD.

The technology cost estimates discussed in Section III.D and detailed in Chapter 3 of the Joint TSD are used to build up technology package cost estimates which are then used as inputs to the OMEGA model. EPA discusses our technology packages and package costs in Chapter 1 of the RIA. The model determines what level of CO_2 improvement is required considering the reference case for each manufacturer's fleet. The vehicle compliance costs are the outputs of the model and take into account FFV credits through 2015, TLAAS, full car/truck trading, and the A/C credit program. Table III.H.2–1 presents the fleet average incremental vehicle compliance costs for this rule. As the table indicates, 2012–2016 costs increase every year as the standards become more stringent. Costs per car and per truck then remain stable through 2021 while cost per vehicle (car/truck combined) decline slightly as the fleet mix trends slowly to increasing car sales. In 2022, costs per car and per truck decline as the long-term ICM is applied because some indirect costs decrease or are no longer considered attributable to the program (*e.g.,* warranty costs go down). Costs per car and per truck remain constant thereafter while the cost per vehicle declines slightly as the fleet continues to trend toward cars. By 2030, projections of fleet mix changes become static and the cost per vehicle remains constant. EPA has a more detailed presentation of vehicle compliance costs on a manufacturer by manufacturer basis in Chapter 6 of the RIA.

TABLE III.H.2–1—INDUSTRY AVERAGE VEHICLE COMPLIANCE COSTS ASSOCIATED WITH THE TAILPIPE CO_2 STANDARDS

[$/vehicle in 2007 dollars]

Calendar year	$/car	$/truck	$/vehicle (car & truck combined)
2012	$342	$314	$331

[453] Note that the assumption made here is that the standards would continue to apply for years beyond 2016 so that new vehicles sold in model years 2017 and later would continue to incur costs as a result of this rule. Those costs are estimated to get lower in 2022 because some of the indirect costs attributable to this rule in the years prior to 2022 would be eliminated in 2022 and later.

[454] Need to add the recent reference for this study by RTI. Alex Rogozhin et al., *Automobile Industry Regail Price Equivalent and Indirect Cost Multipliers.* Prepared for EPA by RTI International and Transportation Research Institute, University of Michigan. EPA–420–R–09–003, February 2009 (Docket EPA–HQ–OAR–2009–0472).

[455] Gloria Helfand and Todd Sherwood, "Documentation of the Development of Indirect Cost Multipliers for Three Automotive Technologies," Office of Transportation and Air Quality, U.S. EPA, August 2009 (Docket EPA–HQ–OAR–2009–0472).

[456] The RPE is based on the historical relationship between direct costs and consumer prices; it is intended to reflect the average markup over time required to sustain the industry as a viable operation. Unlike the RPE approach, the ICM focuses more narrowly on the changes that are required in direct response to regulation-induced vehicle design changes which may not directly influence all of the indirect costs that are incurred in the normal course of business. For example, an RPE markup captures all indirect costs including costs such as the retirement benefits of retired employees. However, the retirement benefits for retired employees are not expected to change as a result of a new GHG regulation and, therefore, those indirect costs should not increase in relation to newly added hardware in response to a regulation.

TABLE III.H.2–1—INDUSTRY AVERAGE VEHICLE COMPLIANCE COSTS ASSOCIATED WITH THE TAILPIPE CO_2 STANDARDS—Continued

[$/vehicle in 2007 dollars]

Calendar year	$/car	$/truck	$/vehicle (car & truck combined)
2013	507	496	503
2014	631	652	639
2015	749	820	774
2016	869	1,098	948
2017	869	1,098	947
2018	869	1,098	945
2019	869	1,098	943
2020	869	1,098	940
2021	869	1,098	939
2022	817	1,032	882
2030	817	1,032	878
2040	817	1,032	875
2050	817	1,032	875

b. Annual Costs of the Vehicle Program

The costs presented here represent the incremental costs for newly added technology to comply with the final program. Together with the projected increases in car and light-truck sales, the increases in per-vehicle average costs shown in Table III.H.2–1 above result in the total annual costs reported in Table III.H.2–2 below. Note that the costs presented in Table III.H.2–2 do not include the savings that would occur as a result of the improvements to fuel consumption. Those impacts are presented in Section III.H.4.

TABLE III.H.2–2—QUANTIFIED ANNUAL COSTS ASSOCIATED WITH THE VEHICLE PROGRAM

[$Millions of 2007 dollars]

Year	Quantified annual costs
2012	$4,900
2013	8,000
2014	10,300
2015	12,700
2016	15,600
2020	15,600

TABLE III.H.2–2—QUANTIFIED ANNUAL COSTS ASSOCIATED WITH THE VEHICLE PROGRAM—Continued

[$Millions of 2007 dollars]

Year	Quantified annual costs
2030	15,800
2040	17,400
2050	19,000
NPV, 3%	345,900
NPV, 7%	191,900

3. Cost per Ton of Emissions Reduced

EPA has calculated the cost per ton of GHG (CO_2-equivalent, or CO_2e) reductions associated with this rule using the above costs and the emissions reductions described in Section III.F. More detail on the costs, emission reductions, and the cost per ton can be found in the RIA and Joint TSD. EPA has calculated the cost per metric ton of GHG emissions reductions in the years 2020, 2030, 2040, and 2050 using the annual vehicle compliance costs and emission reductions for each of those years. The value in 2050 represents the long-term cost per ton of the emissions reduced. EPA has also calculated the cost per metric ton of GHG emission reductions including the savings associated with reduced fuel consumption (presented below in Section III.H.4). This latter calculation does not include the other benefits associated with this rule such as those associated with criteria pollutant reductions or energy security benefits as discussed later in sections III.H.4 through III.H.9. By including the fuel savings in the cost estimates, the cost per ton is less than $0, since the estimated value of fuel savings outweighs the vehicle program costs. With regard to the CH_4 and N_2O standards, since these standards will be emissions caps designed to ensure that manufacturers do not backslide from current levels, EPA has not estimated costs associated with the standards (since the standards will not require any change from current practices nor does EPA estimate they will result in emissions reductions).

The results for CO_2e costs per ton under the rule are shown in Table III.H.3–1.

TABLE III.H.3–1—ANNUAL COST PER METRIC TON OF CO_2e REDUCED, IN $2007 DOLLARS

Year	Vehicle program cost [a] ($millions)	Fuel savings [b] ($millions)	CO_2e reduced (million metric tons)	Cost per ton of the vehicle program only [a]	Cost per ton of the vehicle program with fuel savings [b]
2020	$15,600	−$35,700	160	$100	−$130
2030	15,800	−79,800	310	50	−210
2040	17,400	−119,300	400	40	−250
2050	19,000	−171,200	510	40	−300

[a] Costs here include vehicle compliance costs and do not include any fuel savings.
[b] Fuel savings calculated using pre-tax fuel prices.

4. Reduction in Fuel Consumption and Its Impacts

a. What are the projected changes in fuel consumption?

The new CO_2 standards will result in significant improvements in the fuel efficiency of affected vehicles. Drivers of those vehicles will see corresponding savings associated with reduced fuel expenditures. EPA has estimated the impacts on fuel consumption for both the tailpipe CO_2 standards and the A/C credit program. To do this, fuel consumption is calculated using both current CO_2 emission levels and the new CO_2 standards. The difference between these estimates represents the net savings from the CO_2 standards. Note that the total number of miles that vehicles are driven each year is different under each of the control case scenarios than in the reference case due to the "rebound effect," which is discussed in Section III.H.4.c. EPA also notes that consumers who drive more than our average estimates for vehicle miles traveled (VMT) will experience more fuel savings; consumers who drive less than our average VMT estimates will experience less fuel savings.

The expected impacts on fuel consumption are shown in Table III.H.4–1. The gallons shown in the tables reflect impacts from the new CO_2 standards, including the A/C credit program, and include increased consumption resulting from the rebound effect.

TABLE III.H.4–1—FUEL CONSUMPTION IMPACTS OF THE VEHICLE STANDARDS AND A/C CREDIT PROGRAMS

[Million gallons]

Year	Total
2012	550
2013	1,320
2014	2,330
2015	3,750
2016	5,670
2020	12,590
2030	24,730
2040	32,620
2050	41,520

b. What are the monetized fuel savings?

Using the fuel consumption estimates presented in Section III.H.4.a, EPA can calculate the monetized fuel savings associated with the CO_2 standards. To do this, we multiply reduced fuel consumption in each year by the corresponding estimated average fuel price in that year, using the reference case taken from the AEO 2010 Early Release.[457] AEO is the government consensus estimate used by NHTSA and many other government agencies to estimate the projected price of fuel. EPA has done this calculation using both the pre-tax and post-tax fuel prices. Since the post-tax fuel prices are what consumers pay, the fuel savings calculated using these prices represent the savings consumers will see. The pre-tax fuel savings are those savings that society will see. These results are shown in Table III.H.4–2. Note that in Section III.H.10, EPA presents the benefit-cost of the rule and, for that reason, presents only the pre-tax fuel savings.

TABLE III.H.4–2—ESTIMATED MONETIZED FUEL SAVINGS

[Millions of 2007 dollars]

Calendar year	Fuel savings (pre-tax)	Fuel savings (post-tax)
2012	$1,137	$1,400
2013	2,923	3,800
2014	5,708	6,900
2015	9,612	11,300
2016	14,816	17,400
2020	35,739	41,100
2030	79,838	89,100
2040	119,324	131,700
2050	171,248	186,300
NPV, 3%	1,545,638	1,723,900
NPV, 7%	672,629	755,700

As shown in Table III.H.4–2, EPA is projecting that consumers would realize very large fuel savings as a result of the standards contained in this rule. As discussed further in Section III.H.1, it is a conundrum from an economic perspective that these large fuel savings have not been provided by automakers and purchased by consumers. A number of behavioral and market phenomena may lead to this disparity between the fuel economy that makes financial sense to consumers and the fuel economy they purchase. Regardless how consumers make their decisions on how much fuel economy to purchase, EPA expects that, in the aggregate, they will gain these fuel savings, which will provide actual money in consumers' pockets. We received considerable comment on this issue, as discussed in Section III.H.1, and the issue is discussed further in Chapter 8 of the RIA.

c. VMT Rebound Effect

The fuel economy rebound effect refers to the fraction of fuel savings expected to result from an increase in vehicle fuel economy, particularly one required by higher fuel efficiency standards, that is offset by additional vehicle use. The increase in vehicle use occurs because higher fuel economy reduces the fuel cost of driving, which is typically the largest single component of the monetary cost of operating a

[457] Energy Information Administration. Annual Energy Outlook 2010 Early Release. Supplemental Transportation Tables. December 2009. *http://www.eia.doe.gov/oiaf/aeo/supplement/sup_tran.xls.*

vehicle, and vehicle owners respond to this reduction in operating costs by driving slightly more.

For this rule, EPA is using an estimate of 10% for the rebound effect. This value is based on the most recent time period analyzed in the Small and Van Dender 2007 paper,[458] and falls within the range of the larger body of historical work on the rebound effect.[459] Recent work by David Greene on the rebound effect for light-duty vehicles in the U.S. further supports the hypothesis that the rebound effect is decreasing over time.[460] If we were to use a dynamic estimate of the future rebound effect, our analysis shows that the rebound effect could be in the range of 5% or lower.[461] The rebound effect is also further discussed in Chapter 4 of the Joint TSD which reviews the relevant literature and discusses in more depth the reasoning for the rebound values used here.

We received several comments on the proposed value of the rebound effect. The California Air Resources Board (CARB) and the New Jersey Department of Environmental Protection supported the use of a 10% rebound effect, although CARB encouraged EPA to consider lowering the value to 5%. Other commenters, such as the Missouri Department of Natural Resources, the International Council on Clean Transportation (ICCT), the Center for Biological Diversity, and the Consumer Federation of America, recommended using a lower rebound effect. ICCT specifically recommended that the dynamic rebound effect methodology utilized by Small & Van Dender was the most appropriate methodology, which would support a rebound effect of 5% or lower. In contrast, the National Association of Dealerships asserted that the rebound effect should be higher (*e.g.,* in the lower range of the 15–30% historical range), but did not submit any data to support this claim.

While we appreciate the input provided by commenters, we did not receive any new data or analysis to justify revising our initial estimates of the rebound effect at this time. Based on the positive comments we received, we will continue using the dynamic rebound effect to help inform our estimate of the rebound effect in future rulemakings. However, given the relatively new nature of this analytical approach, we believe the larger body of historical studies should also be considered when determining the value of the rebound effect. As we described in the Technical Support Document, the more recent literature suggests that the rebound effect is 10% or lower, whereas the larger body of historical studies suggests a higher rebound effect. Therefore, we will continue to use the 10% rebound effect for this rulemaking. However, we plan to update our estimate of the rebound effect in future rulemakings as new data becomes available.

We also invited comments on whether we should also explore other alternatives for estimating the rebound effect, such as whether it would be appropriate to use the price elasticity of demand for gasoline to guide the choice of a value for the rebound effect. We received only one comment on this issue from ICCT. In their comments, ICCT stated that the short run elasticity can provide a useful point of comparison for rebound effect estimates, but it should not be used to guide the choice of a value for the rebound effect. Therefore, we have not incorporated this metric into our analysis.

5. Impacts on U.S. Vehicle Sales and Payback Period

a. Vehicle Sales Impacts

This analysis compares two effects. On the one hand, the vehicles will become more expensive, which would, by itself, discourage sales. On the other hand, the vehicles will have improved fuel economy and thus lower operating costs. If consumers do not accurately compare the value of fuel savings with the increased cost of fuel economy technology in their vehicle purchase decisions, as discussed in Preamble III.H.1, they will continue to behave in this way after this rule. If auto makers have accurately gauged how consumers consider fuel economy when purchasing vehicles and have provided the amount that consumers want in vehicles, then consumers should not be expected to want the more fuel-efficient vehicles. After all, auto makers would have provided as much fuel economy as consumers want. If, on the other hand, auto makers underestimated consumer demand for fuel economy, as suggested by some commenters and discussed in Preamble Section III.H.1 and RIA Section 8.1.2, then this rule may lead to production of more desirable vehicles, and vehicle sales may increase. This assumption implies that auto makers have missed some profit-making opportunities.

The methodology EPA used for estimating the impact on vehicle sales is relatively straightforward, but makes a number of simplifying assumptions. According to the literature, the price elasticity of demand for vehicles is commonly estimated to be -1.0.[462] In other words, a one percent increase in the price of a vehicle would be expected to decrease sales by one percent, holding all other factors constant. For our estimates, EPA calculated the effect of an increase in vehicle costs due to the GHG standards and assumes that consumers will face the full increase in costs, not an actual (estimated) change in vehicle price. (The estimated increases in vehicle cost due to the rule are discussed in Section III.H.2.) This is a conservative methodology, since an increase in cost may not pass fully into an increase in market price in an oligopolistic industry such as the automotive sector.[463] EPA also notes that we have not used these estimated sales impacts in the OMEGA Model.

Although EPA uses the one percent price elasticity of demand for vehicles as the basis for our vehicle sales impact estimates, we assumed that the consumer would take into account both the higher vehicle purchasing costs as well as some of the fuel savings benefits when deciding whether to purchase a new vehicle. Therefore, the incremental cost increase of a new vehicle would be offset by reduced fuel expenditures over a certain period of time (*i.e.,* the "payback period"). For the purposes of this rulemaking, EPA used a five-year payback period, which is consistent with the length of a typical new light-

[458] Small, K. and K. Van Dender, 2007a. "Fuel Efficiency and Motor Vehicle Travel: The Declining Rebound Effect", The Energy Journal, vol. 28, no. 1, pp. 25–51 (Docket EPA–HQ–OAR–2009–0472–0018).

[459] Sorrell, S. and J. Dimitropoulos, 2007. "UKERC Review of Evidence for the Rebound Effect, Technical Report 2: Econometric Studies", UKERC/WP/TPA/2007/010, UK Energy Research Centre, London, October (Docket EPA–HQ–OAR–2009–0472–0012).

[460] Report by Kenneth A. Small of University of California at Irvine to EPA, "The Rebound Effect from Fuel Efficiency Standards: Measurement and Projection to 2030", June 12, 2009 (Docket EPA–HQ–OAR–2009–0472–0002).

[461] Revised Report by David Greene of Oak Ridge National Laboratory to EPA, "Rebound 2007: Analysis of National Light-Duty Vehicle Travel Statistics," February 9, 2010 (Docket EPA–HQ–OAR–2009–0472–0220). This paper has been accepted for an upcoming special issue of Energy Policy, although the publication date has not yet been determined.

[462] Kleit A.N., 1990. "The Effect of Annual Changes in Automobile Fuel Economy Standards." Journal of Regulatory Economics 2: 151–172 (Docket EPA–HQ–OAR–2009–0472–0015); McCarthy, Patrick S., 1996. "Market Price and Income Elasticities of New Vehicle Demands." Review of Economics and Statistics 78: 543–547 (Docket EPA–HQ–OAR–2009–0472–0016); Goldberg, Pinelopi K., 1998. "The Effects of the Corporate Average Fuel Efficiency Standards in the U.S.," Journal of Industrial Economics 46(1): 1–33 (Docket EPA–HQ–OAR–2009–0472–0017).

[463] See, for instance, Gron, Ann, and Deborah Swenson, 2000. "Cost Pass-Through in the U.S. Automobile Market," Review of Economics and Statistics 82: 316–324 (Docket EPA–HQ–OAR–2009–0472–0007).

duty vehicle loan.[464] The one commenter on this analysis stated that use of the five-year payback period was reasonable. This approach may not accurately reflect the role of fuel savings in consumers' purchase decisions, as the discussion in Section III.H.1 suggests. If consumers consider fuel savings in a different fashion than modeled here, then this approach will not accurately reflect the impact of this rule on vehicle sales.

This increase in costs has other effects on consumers as well: if vehicle prices increase, consumers will face higher insurance costs and sales tax, and additional finance costs if the vehicle is bought on credit. In addition, the resale value of the vehicles will increase. EPA received no comments on these adjustments. The only change to these adjustments between the NPRM and this discussion is an updating of the interest rate on auto loans. EPA estimates that, with corrections for these factors, the effect on consumer expenditures of the cost of the new technology should be 0.914 times the cost of the technology at a 3% discount rate, and 0.876 times the cost of the technology at a 7% discount rate. The details of this calculation are in the RIA, Chapter 8.1.

Once the cost estimates are adjusted for these additional factors, the fuel cost savings associated with the rule, discussed in Section III.H.4, are subtracted to get the net effect on consumer expenditures for a new vehicle. With the assumed elasticity of demand of −1, the percent change in this "effective price," estimated as the adjusted increase in cost, is equal to the negative of the percent change in vehicle purchases. The net effect of this calculation is in Table III.H.5–1 and Table III.H.5–2. The values have changed slightly from the NPRM, due to changes in fuel prices and fuel savings, technology costs, and baseline vehicle sales projections, in addition to the adjustment in financing costs.

The estimates provided in Table III.H.5–1 and Table III.H.5–2 are meant to be illustrative rather than a definitive prediction. When viewed at the industry-wide level, they give a general indication of the potential impact on vehicle sales. As shown below, the overall impact is positive and growing over time for both cars and trucks. Because the fuel savings associated with this rule are expected to exceed the technology costs, the effective prices of vehicles (the adjusted increase in technology cost less the fuel savings over five years) to consumers will fall, and consumers will buy more new vehicles. As a result, the lower net cost of the vehicles is projected to lead to an increase in sales for both cars and trucks.

As discussed above, this result depends on the assumption that more fuel efficient vehicles that yield net consumer benefits over five years would not otherwise be offered on the vehicle market due to market failures on the part of vehicle manufacturers. If vehicles that achieve the fuel economy standards prescribed by today's rulemaking would already be available, but consumers chose not to purchase them, then this rulemaking would not result in an increase in vehicle sales, because it does not alter how consumers make decisions about which vehicles to purchase. In addition, this analysis has not accounted for a number of factors that might affect consumer vehicle purchases, such as changing market conditions, changes in vehicle characteristics that might accompany improvements in fuel economy, or consumers considering a different "payback period" for their fuel economy purchases. If consumers use a shorter payback period, the sales impacts will be less positive, possibly negative; if consumers use a higher payback period, the impacts will be more positive. Also, this is an aggregate analysis; some individual consumers (those who drive less than estimated here) will face lower net benefits, while others (who drive more than estimated here) will have even greater savings. These complications add considerable uncertainty to our vehicle sales impact analysis.

TABLE III.H.5–1—VEHICLE SALES IMPACTS USING A 3% DISCOUNT RATE

	Change in car sales	% Change	Change in truck sales	% Change
2012	67,500	0.7	62,100	1.1
2013	76,000	0.8	190,200	3.2
2014	114,000	1.1	254,900	4.3
2015	222,200	2.1	352,800	6.1
2016	360,500	3.3	488,000	8.6

Table III.H.5–1 shows the impacts on new vehicle sales using a 3% discount rate. The fuel savings over five years are always higher than the technology costs. Although both cars and trucks show very small effects initially, over time vehicle sales become increasingly positive, as increased fuel prices make improved fuel economy more desirable. The increases in sales for trucks are larger than the increases for trucks (except in 2012) in both absolute numbers and percentage terms.

TABLE III.H.5–2—NEW VEHICLE SALES IMPACTS USING A 7% DISCOUNT RATE

	Change in car sales	% Change	Change in truck sales	% Change
2012	62,800	0.7	58,300	1
2013	70,500	0.7	92,300	1.5
2014	106,100	1	127,700	2.1

[464] As discussed further in Section III.H.1, there is not a consensus in the literature on how consumers consider fuel economy in their vehicle purchases. Results are inconsistent, possibly due to fuel economy not being a major focus of many of the studies, and possibly due to sensitivity of results to modeling and data used. A survey by Greene (Greene, David L. "How Consumers Value Fuel Economy: A Literature Review." EPA Report EPA–420–R–10–008, March 2010 (Docket EPA–HQ–OAR–2009–0472–11575)) finds that estimates in the literature of the value that consumers place on fuel economy when buying a vehicle range from negative—consumers would pay to *reduce* fuel economy—to more than 1000 times the value of fuel savings.

TABLE III.H.5–2—NEW VEHICLE SALES IMPACTS USING A 7% DISCOUNT RATE—Continued

	Change in car sales	% Change	Change in truck sales	% Change
2015	208,400	2	194,200	3.3
2016	339,400	3.1	280,000	4.9

Table III.H.5–2 shows the impacts on new vehicle sales using a 7% interest rate. While a 7% interest rate shows slightly lower impacts than using a 3% discount rate, the results are qualitatively similar to those using a 3% discount rate. Sales increase for every year. For both cars and trucks, sales become increasingly positive over time, as higher fuel prices make improved fuel economy more valuable. The car market grows more than the truck market in absolute numbers, but less on a percentage basis.

The effect of this rule on the use and scrappage of older vehicles will be related to its effects on new vehicle prices, the fuel efficiency of new vehicle models, and the total sales of new vehicles. If the value of fuel savings resulting from improved fuel efficiency to the typical potential buyer of a new vehicle outweighs the average increase in new models' prices, sales of new vehicles will rise, while scrappage rates of used vehicles will increase slightly. This will cause the "turnover" of the vehicle fleet (*i.e.,* the retirement of used vehicles and their replacement by new models) to accelerate slightly, thus accentuating the anticipated effect of the rule on fleet-wide fuel consumption and CO_2 emissions. However, if potential buyers value future fuel savings resulting from the increased fuel efficiency of new models at less than the increase in their average selling price, sales of new vehicles will decline, as will the rate at which used vehicles are retired from service. This effect will slow the replacement of used vehicles by new models, and thus partly offset the anticipated effects of this rule on fuel use and emissions.

Because the agencies are uncertain about how the value of projected fuel savings from this rule to potential buyers will compare to their estimates of increases in new vehicle prices, we have not attempted to estimate explicitly the effects of the rule on scrappage of older vehicles and the turnover of the vehicle fleet.

A detailed discussion of the vehicle sales impacts methodology is provided in the Chapter 8 of EPA's RIA.

b. Consumer Payback Period and Lifetime Savings on New Vehicle Purchases

Another factor of interest is the payback period on the purchase of a new vehicle that complies with the new standards. In other words, how long would it take for the expected fuel savings to outweigh the increased cost of a new vehicle? For example, a new 2016 MY vehicle is estimated to cost $948 more (on average, and relative to the reference case vehicle) due to the addition of new GHG reducing technology (see Section III.D.6 for details on this cost estimate). This new technology will result in lower fuel consumption and, therefore, savings in fuel expenditures (*see* Section III.H.10) for details on fuel savings). But how many months or years would pass before the fuel savings exceed the upfront cost of $948?

Table III.H.5–3 provides the answer to this question for a vehicle purchaser who pays for the new vehicle upfront in cash (we discuss later in this section the payback period for consumers who finance the new vehicle purchase with a loan). The table uses annual miles driven (vehicle miles traveled, or VMT) and survival rates consistent with the emission and benefits analyses presented in Chapter 4 of the Joint TSD. The control case includes rebound VMT but the reference case does not, consistent with other parts of the analysis. Also included are fuel savings associated with A/C controls (in the control case only). Not included here are the likely A/C-related maintenance savings as discussed in Chapter 2 of EPA's RIA. Further, this analysis does not include other societal impacts such as the value of increased driving, or noise, congestion and accidents since the focus is meant to be on those factors consumers think about most while in the showroom considering a new car purchase. Car/truck fleet weighting is handled as described in Chapter 1 of the Joint TSD. As can be seen in the table, it will take under 3 years (2 years and 7 months at a 3% discount rate, 2 years and 9 months at a 7% discount rate) for the cumulative discounted fuel savings to exceed the upfront increase in vehicle cost. More detail on this analysis can be found in Chapter 8 of EPA's RIA.

TABLE III.H.5–3—PAYBACK PERIOD ON A 2016 MY NEW VEHICLE PURCHASE VIA CASH

[2007 dollars]

Year of ownership	Increased vehicle cost [a]	Annual fuel savings [b]	Cumulative discounted fuel savings at 3%	Cumulative discounted fuel savings at 7%
1	$1,018	$424	$418	$410
2	.....	$420	$820	$790
3	.....	$414	$1,204	$1,139
4	.....	$402	$1,567	$1,457

[a] Increased vehicle cost due to the rule is $948; the value here includes nationwide average sales tax of 5.3% and increased insurance premiums of 1.98%; both of these percentages are discussed in Section 8.1.1 of EPA's RIA.

[b] Calculated using AEO 2010 Early Release reference case fuel price including taxes.

However, most people purchase a new vehicle using credit rather than paying cash up front. The typical car loan today is a five year, 60 month loan. As of February 9, 2010, the national average interest rate for a 5 year new car loan was 6.54 percent. If the increased vehicle cost is spread out over 5 years at 6.54 percent, the analysis would look like that shown in Table III.H.5–4. As can be seen in this table, the fuel savings immediately outweigh the

increased payments on the car loan, amounting to $177 in discounted net savings (3% discount rate) in the first year and similar savings for the next two years before reduced VMT starts to cause the fuel savings to fall. Results are similar using a 7% discount rate. This means that for every month that the average owner is making a payment for the financing of the average new vehicle their monthly fuel savings would be greater than the increase in the loan payments. This amounts to a savings on the order of $9 to $15 per month throughout the duration of the 5 year loan. Note that in year six when the car loan is paid off, the net savings equal the fuel savings (as would be the case for the remaining years of ownership).

TABLE III.H.5–4—PAYBACK PERIOD ON A 2016 MY NEW VEHICLE PURCHASE VIA CREDIT

[2007 dollars]

Year of ownership	Increased vehicle cost [a]	Annual fuel savings [b]	Annual discounted net savings at 3%	Annual discounted net savings at 7%
1	$245	$424	$177	$173
2	$245	$420	$167	$158
3	$245	$414	$157	$142
4	$245	$402	$142	$124
5	$245	$391	$127	$107
6	$0	$374	$318	$258

[a] This uses the same increased cost as Table III.H.4–3 but spreads it out over 5 years assuming a 5 year car loan at 6.54 percent.
[b] Calculated using AEO 2010 Early Release reference case fuel price including taxes.

The lifetime fuel savings and net savings can also be calculated for those who purchase the vehicle using cash and for those who purchase the vehicle with credit. This calculation applies to the vehicle owner who retains the vehicle for its entire life and drives the vehicle each year at the rate equal to the national projected average. The results are shown in Table III.H.5–5. In either case, the present value of the lifetime net savings is greater than $3,100 at a 3% discount rate, or $2,300 at a 7% discount rate.

TABLE III.H.5–5—LIFETIME DISCOUNTED NET SAVINGS ON A 2016 MY NEW VEHICLE PURCHASE

[2007 dollars]

Purchase option	Increased discounted vehicle cost	Lifetime discounted fuel savings [b]	Lifetime discounted net savings
3% discount rate			
Cash	$1,018	$4,306	$3,303
Credit [a]	1,140	4,306	3,166
7% discount rate			
Cash	1,018	3,381	2,396
Credit [a]	1,040	3,381	2,340

[a] Assumes a 5 year loan at 6.54 percent.
[b] Fuel savings here were calculated using AEO 2010 Early Release reference case fuel price including taxes.

Note that throughout this consumer payback discussion, the average number of vehicle miles traveled per year has been used. Drivers who drive more miles than the average would incur fuel related savings more quickly and, therefore, the payback would come sooner. Drivers who drive fewer miles than the average would incur fuel related savings more slowly and, therefore, the payback would come later.

6. Benefits of Reducing GHG Emissions

a. Social Cost of Carbon

In today's final rule, EPA and NHTSA assigned a dollar value to reductions in CO_2 emissions using the marginal dollar value of climate-related damages resulting from carbon emissions, also referred to as "social cost of carbon" (SCC). The SCC estimates used in today's rule were recently developed by an interagency process, in which EPA and NHTSA participated. As part of the interagency group, EPA and NHTSA have critically evaluated the new SCC estimates and endorse them for use in these regulatory analyses, for the reasons presented below. The SCC TSD, *Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866,* presents a more detailed description of the methodology used to generate the new estimates, the underlying assumptions, and the limitations of the new SCC estimates.

Under Executive Order 12866, agencies are required, to the extent permitted by law, "to assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs." The purpose of the SCC estimates presented here is to incorporate the social benefits of reducing carbon dioxide (CO_2) emissions from light-duty vehicles into a cost-benefit analysis of this final rule, which has a small, or "marginal," impact on cumulative global emissions. The estimates are presented with an acknowledgement of the many

uncertainties involved and with a clear understanding that they should be updated over time to reflect increasing knowledge of the science and economics of climate impacts.

The interagency process that developed these SCC estimates involved a group of technical experts from numerous agencies, which met on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key model inputs and assumptions. The main objective of this process was to develop a range of SCC values using a defensible set of input assumptions grounded in the existing scientific and economic literatures. In this way, key uncertainties and model differences transparently and consistently inform the range of SCC estimates used in this rulemaking process.

The interagency group selected four SCC values for use in regulatory analyses, which EPA and NHTSA have applied to this final rule. Three values are based on the average SCC from three integrated assessment models, at discount rates of 2.5, 3, and 5 percent. The fourth value, which represents the 95th percentile SCC estimate across all three models at a 3 percent discount rate, is included to represent higher-than-expected impacts from temperature change further out in the tails of the SCC distribution.

TABLE III.H.6–1—SOCIAL COST OF CO_2, 2010—2050[a]

[in 2007 dollars]

Year	Discount Rate			
	5% Avg	3% Avg	2.5% Avg	3% 95th
2010	5	21	35	65
2015	6	24	38	73
2020	7	26	42	81
2025	8	30	46	90
2030	10	33	50	100
2035	11	36	54	110
2040	13	39	58	119
2045	14	42	62	128
2050	16	45	65	136

[a] The SCC estimates presented above have been rounded to nearest dollar for consistency with the benefits analysis. The SCC TSD presents estimates rounded to the nearest tenth of a cent.

i. Monetizing Carbon Dioxide Emissions

The "social cost of carbon" (SCC) is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year. It is intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services. We report estimates of the social cost of carbon in dollars per metric ton of carbon dioxide throughout this document.

When attempting to assess the incremental economic impacts of carbon dioxide emissions, the analyst faces a number of serious challenges. A 2009 report from the National Academies of Science points out that any assessment will suffer from uncertainty, speculation, and lack of information about (1) future emissions of greenhouse gases, (2) the effects of past and future emissions on the climate system, (3) the impact of changes in climate on the physical and biological environment, and (4) the translation of these environmental impacts into economic damages.[465] As a result, any effort to quantify and monetize the harms associated with climate change will raise serious questions of science, economics, and ethics and should be viewed as provisional.

Despite the serious limits of both quantification and monetization, SCC estimates can be useful in estimating the social benefits of reducing carbon dioxide emissions. Under Executive Order 12866, agencies are required, to the extent permitted by law, "to assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs." EPA and NHTSA have used the SCC estimates to incorporate social benefits from reducing carbon dioxide emissions from light-duty vehicles into a cost-benefit analysis of this final rule, which has a small, or "marginal," impact on cumulative global emissions. Most Federal regulatory actions can be expected to have marginal impacts on global emissions.

For policies that have marginal impacts on global emissions, the benefits from reduced (or costs from increased) emissions in any future year can be estimated by multiplying the change in emissions in that year by the SCC value appropriate for that year. The net present value of the benefits can then be calculated by multiplying each of these future benefits by an appropriate discount factor and summing across all affected years. This approach assumes that the marginal damages from increased emissions are constant for small departures from the baseline emissions path, an approximation that is reasonable for policies that have effects on emissions that are small relative to cumulative global carbon dioxide emissions. For policies that have a large (non-marginal) impact on global cumulative emissions, there is a separate question of whether the SCC is an appropriate tool for calculating the benefits of reduced emissions; we do not attempt to answer that question here.

As noted above, the interagency group convened on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key inputs and assumptions in order to generate SCC estimates. In addition to EPA and NHTSA, agencies that actively participated in the interagency process included the Departments of Agriculture, Commerce, Energy, and Treasury. This process was convened by the Council of Economic Advisers and the Office of Management and Budget, with active participation and regular input from the Council on Environmental Quality, National Economic Council, Office of Energy and Climate Change, and Office of Science and Technology Policy. The main objective of this process was to develop a range of SCC values using a defensible

[465] National Research Council (2009). *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*. National Academies Press.

set of input assumptions that are grounded in the existing literature. In this way, key uncertainties and model differences can more transparently and consistently inform the range of SCC estimates used in the rulemaking process.

The interagency group selected four global SCC estimates for use in regulatory analyses. For 2010, these estimates are $5, $21, $35, and $65 (in 2007 dollars). The first three estimates are based on the average SCC across models and socio-economic and emissions scenarios at the 5, 3, and 2.5 percent discount rates, respectively. The fourth value is included to represent the higher-than-expected impacts from temperature change further out in the tails of the SCC distribution. For this purpose, we use the SCC value for the 95th percentile at a 3 percent discount rate. The central value is the average SCC across models at the 3 percent discount rate. For purposes of capturing the uncertainties involved in regulatory impact analysis, we emphasize the importance and value of considering the full range. These SCC estimates also grow over time. For instance, the central value increases to $24 per ton of CO_2 in 2015 and $26 per ton of CO_2 in 2020. See the SCC TSD for the full range of annual SCC estimates from 2010 to 2050.

These new SCC estimates represent global measures and the center of our current attention because of the distinctive nature of the climate change problem. The climate change problem is highly unusual in at least two respects. First, it involves a global externality: Emissions of most greenhouse gases contribute to damages around the world even when they are emitted in the United States. Consequently, to address the global nature of the problem, the SCC must incorporate the full (global) damages caused by GHG emissions. Second, climate change presents a problem that the United States alone cannot solve. Even if the United States were to reduce its greenhouse gas emissions to zero, that step would be far from enough to avoid substantial climate change. Other countries would also need to take action to reduce emissions if significant changes in the global climate are to be avoided.

It is important to emphasize that the interagency process is committed to updating these estimates as the science and economic understanding of climate change and its impacts on society improves over time. Specifically, the interagency group has set a preliminary goal of revisiting the SCC values within two years or at such time as substantially updated models become available, and to continue to support research in this area. In the meantime, the interagency group will continue to explore the issues raised in the SCC TSD and consider public comments as part of the ongoing interagency process.

ii. Social Cost of Carbon Values Used in Past Regulatory Analyses

To date, economic analyses for Federal regulations have used a wide range of values to estimate the benefits associated with reducing carbon dioxide emissions. In the final model year 2011 CAFE rule, the Department of Transportation (DOT) used both a "domestic" SCC value of $2 per ton of CO_2 and a "global" SCC value of $33 per ton of CO_2 for 2007 emission reductions (in 2007 dollars), increasing both values at 2.4 percent per year. It also included a sensitivity analysis at $80 per ton of CO_2. A domestic SCC value is meant to reflect the value of damages in the United States resulting from a unit change in carbon dioxide emissions, while a global SCC value is meant to reflect the value of damages worldwide.

A 2008 regulation proposed by DOT assumed a domestic SCC value of $7 per ton CO_2 (in 2006 dollars) for 2011 emission reductions (with a range of $0-$14 for sensitivity analysis), also increasing at 2.4 percent per year. A regulation finalized by DOE in October of 2008 used a domestic SCC range of $0 to $20 per ton CO_2 for 2007 emission reductions (in 2007 dollars). In addition, EPA's 2008 Advance Notice of Proposed Rulemaking for Greenhouse Gases identified what it described as "very preliminary" SCC estimates subject to revision. EPA's global mean values were $68 and $40 per ton CO_2 for discount rates of approximately 2 percent and 3 percent, respectively (in 2006 dollars for 2007 emissions).

In 2009, an interagency process was initiated to offer a preliminary assessment of how best to quantify the benefits from reducing carbon dioxide emissions. To ensure consistency in how benefits are evaluated across agencies, the Administration sought to develop a transparent and defensible method, specifically designed for the rulemaking process, to quantify avoided climate change damages from reduced CO_2 emissions. The interagency group did not undertake any original analysis. Instead, it combined SCC estimates from the existing literature to use as interim values until a more comprehensive analysis could be conducted.

The outcome of the preliminary assessment by the interagency group was a set of five interim values: Global SCC estimates for 2007 (in 2006 dollars) of $55, $33, $19, $10, and $5 per ton of CO_2. The $33 and $5 values represented model-weighted means of the published estimates produced from the most recently available versions of three integrated assessment models (DICE, PAGE, and FUND) at approximately 3 and 5 percent discount rates.[466] The $55 and $10 values were derived by adjusting the published estimates for uncertainty in the discount rate (using factors developed by Newell and Pizer (2003)) at 3 and 5 percent discount rates, respectively.[467] The $19 value was chosen as a central value between the $5 and $33 per ton estimates. All of these values were assumed to increase at 3 percent annually to represent growth in incremental damages over time as the magnitude of climate change increases.

These interim values represent the first sustained interagency effort within the U.S. Government to develop an SCC for use in regulatory analysis. The results of this preliminary effort were presented in several proposed and final rules and were offered for public comment in connection with proposed rules. In particular, EPA and NHTSA used the interim SCC estimates in the joint proposal leading to this final rule.

iii. Approach and Key Assumptions

Since the release of the interim values, interagency group has reconvened on a regular basis to generate improved SCC estimates, which EPA and NHTSA used in this final rule. Specifically, the group has considered public comments and further explored the technical literature in relevant fields. The general approach to estimating SCC values was to run the three integrated assessment models (FUND, DICE, and PAGE) using the following inputs agreed upon by the interagency group:

- A Roe and Baker distribution for the climate sensitivity parameter bounded between 0 and 10 with a median of 3 °C and a cumulative probability between 2 and 4.5 °C of two-thirds.[468]

[466] The DICE (Dynamic Integrated Climate and Economy) model by William Nordhaus evolved from a series of energy models and was first presented in 1990 (Nordhaus and Boyer 2000, Nordhaus 2008). The PAGE (Policy Analysis of the Greenhouse Effect) model was developed by Chris Hope in 1991 for use by European decision-makers in assessing the marginal impact of carbon emissions (Hope 2006, Hope 2008). The FUND (Climate Framework for Uncertainty, Negotiation, and Distribution) model, developed by Richard Tol in the early 1990s, originally to study international capital transfers in climate policy, is now widely used to study climate impacts (*e.g.,* Tol 2002a, Tol 2002b, Anthoff *et al.* 2009, Tol 2009).

[467] Newell, R., and W. Pizer. 2003. Discounting the distant future: How much do uncertain rates increase valuations? *Journal of Environmental Economics and Management* 46: 52–71.

[468] Roe, G., and M. Baker. 2007. "Why is climate sensitivity so unpredictable?" *Science* 318:629–632.

• Five sets of GDP, population and carbon emissions trajectories based on the recent Stanford Energy Modeling Forum, EMF–22.

• Constant annual discount rates of 2.5, 3, and 5 percent.

The SCC TSD presents a summary of the results and details, the modeling exercise and the choices and assumptions that underlie the resulting estimates of the SCC. The complete model results are available in the docket for this final rule [EPA–HQ–OAR–2009–0472].

It is important to recognize that a number of key uncertainties remain, and that current SCC estimates should be treated as provisional and revisable since they will evolve with improved scientific and economic understanding. The interagency group also recognizes that the existing models are imperfect and incomplete. The National Academy of Science (2009) points out that there is tension between the goal of producing quantified estimates of the economic damages from an incremental ton of carbon and the limits of existing efforts to model these effects. The SCC TSD highlights a number of concerns and problems that should be addressed by the research community, including research programs housed in many of the agencies participating in the interagency process to estimate the SCC.

The U.S. Government will periodically review and reconsider estimates of the SCC used for cost-benefit analyses to reflect increasing knowledge of the science and economics of climate impacts, as well as improvements in modeling. In this context, statements recognizing the limitations of the analysis and calling for further research take on exceptional significance. The interagency group offers the new SCC values with all due humility about the uncertainties embedded in them and with a sincere promise to continue work to improve them.

iv. Use of New SCC Estimates To Calculate GHG Benefits for This Final Rule

The table below summarizes the total GHG benefits for the lifetime of the rule, which are calculated by using the four new SCC values. Specifically, EPA calculated the total monetized benefits in each year by multiplying the marginal benefits estimates per metric ton of CO_2 (the SCC) by the reductions in CO_2 for that year.

TABLE III.H.6–2—MONETIZED CO_2 BENEFITS OF VEHICLE PROGRAM, CO_2 EMISSIONS [a] [b]

[Million 2007$]

Year	CO_2 emissions reduction (Million metric tons)	Benefits			
		Avg SCC at 5% ($5–$16) [c]	Avg SCC at 3% ($21–$45) [c]	Avg SCC at 2.5% ($35–$65) [c]	95th percentile SCC at 3% ($65–$136) [c]
2020	139	$900	$3,700	$5,800	$11,000
2030	273	2,700	8,900	14,000	27,000
2040	360	4,600	14,000	21,000	43,000
2050	459	7,200	21,000	30,000	62,000

[a] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[b] Numbers may not compute exactly from Tables III.H.6–1 and III.H.6–2 due to rounding.

[c] As noted above, SCC increases over time; tables lists ranges for years 2010 through 2050. See Table III.H.6–1 for the SCC estimates corresponding to the years in this table.

b. Summary of the Response to Comments

EPA and NHTSA received extensive public comments about the scientific, economic, and ethical issues involved in estimating the SCC, including the proposed rule's estimates of the value of emissions reductions from new cars and trucks.[469] In particular, the comments addressed the methodology used to derive the interim SCC estimates, limitations of integrated assessment models, discount rate selection, treatment of uncertainty and catastrophic impacts, use of global and domestic SCC, and the presentation and use of SCC estimates. The rest of this preamble section briefly summarizes EPA's response to the comments; the Response to Comments document provides the complete responses to all comments received.

EPA received extensive comments about the methodology and discount rates used to derive the interim SCC estimates. While one commenter from the auto industry noted that the interim methodology was acceptable given available data, many commenters (representing academic and environmental organizations) expressed concerns that the filters were too narrow, stated that model-weighting averaging was inappropriate, and recommended that EPA use lower discount rates. These commenters also discussed alternative approaches to select discount rates and generally recommended that EPA use lower rates to give more weight to climate damages experienced by future generations.

For the final rule, EPA conducted new analyses of SCC. EPA did not continue with its interim approach to derive estimates from the existing literature and instead conducted new model runs that produced a vast amount of SCC data at three separate certainty-equivalent discount rates (2.5, 3, and 5 percent). As discussed further in the SCC TSD, this modeling exercise resulted in a fuller distribution of SCC estimates and better accounted for uncertainty through a Monte Carlo analysis. Comments on specific issues are addressed in the Response to Comments document.

EPA received comments on the limitations of the integrated assessment models concluding that the selection of models and reliance on the model authors' datasets contributed to the downward bias of the interim SCC estimates. In this final rule, EPA relied on the default values in each model for the remaining parameter; research gaps

[469] EPA estimated GHG benefits in the proposed rule using a set of interim SCC values developed by an interagency group, in which EPA and NHTSA participated. As discussed in the SCC TSD, the interagency group selected the interim estimates from the existing literature and agreed to use those interim estimates in regulatory analyses until it could develop a more comprehensive characterization of the SCC.

and practical constraints required EPA to limit its modification of the models to socioeconomic and emissions scenarios, climate sensitivity, and discount rate. While EPA recognizes that the models' translations of physical impacts to economic values are incomplete, approximate, and highly uncertain, it regards them as the best currently available representations. EPA also considered, for each model, the treatment of uncertainty, catastrophic impacts, and omitted impacts, and as discussed in the SCC TSD and the Response to Comments document, used best available information and techniques to quantify such impacts as feasible and supplemented the SCC with qualitative assessments. Comments on specific issues are addressed in the Response to Comments document.

Six commenters, representing academia and environmental organizations, supported the proposed rule's preference for global SCC estimates while several industry groups stated that under the Clean Air Act, EPA is prohibited from using global estimates. EPA agrees that a global measure of GHG mitigation benefits is both appropriate and lawful for EPA to consider in evaluating the benefits of GHG emissions standards adopted under section 202(a). Global climate change represents a problem that the United States cannot solve alone without global action, and for a variety of reasons there is a value to the U.S. from domestic emissions reductions that reduce the harm occurring globally. This is not exercise of regulatory authority over conduct occurring overseas, but instead is a reasonable exercise of discretion in how to place a monetary value on a reduction in domestic emissions. See the Response to Comments document for a complete discussion of this issue.

Finally, EPA received various comments regarding the presentation of the SCC methodology and resulting estimates. EPA has responded to these concerns by presenting a detailed discussion about the methodology, including key model assumptions, as well as uncertainties and research gaps associated with the SCC estimates and the implications for the SCC estimates. Among these key assumptions and uncertainties are issues involving discount rates, climate sensitivity and socioeconomic scenario assumptions, incomplete treatment of potential catastrophic impacts, incomplete treatment of non-catastrophic impacts, uncertainty in extrapolation of damages to high temperatures, incomplete treatment of adaptation and technological change, and assumptions about risk aversion to high-impact outcomes (*see* SCC TSD).

7. Non-Greenhouse Gas Health and Environmental Impacts

This section presents EPA's analysis of the non-GHG health and environmental impacts that can be expected to occur as a result of the light-duty vehicle GHG rule. GHG emissions are predominantly the byproduct of fossil fuel combustion processes that also produce criteria and hazardous air pollutants. The vehicles that are subject to the standards are also significant sources of mobile source air pollution such as direct PM, NO_X, VOCs and air toxics. The standards will affect exhaust emissions of these pollutants from vehicles. They will also affect emissions from upstream sources related to changes in fuel consumption. Changes in ambient ozone, $PM_{2.5}$, and air toxics that will result from the standards are expected to affect human health in the form of premature deaths and other serious human health effects, as well as other important public health and welfare effects.

As many commenters noted, it is important to quantify the health and environmental impacts associated with the final rule because a failure to adequately consider these ancillary co-pollutant impacts could lead to an incorrect assessment of their net costs and benefits. Moreover, co-pollutant impacts tend to accrue in the near term, while any effects from reduced climate change mostly accrue over a timeframe of several decades or longer.

This section is split into two sub-sections: The first presents the PM- and ozone-related health and environmental impacts associated with the final rule in calendar year (CY) 2030; the second presents the PM-related benefits-per-ton values used to monetize the PM-related co-benefits associated with the model year (MY) analysis of the final rule.[470]

a. Quantified and Monetized Non-GHG Human Health Benefits of the 2030 Calendar Year (CY) Analysis

This analysis reflects the impact of the final light-duty GHG rule in 2030 compared to a future-year reference scenario without the rule in place. Overall, we estimate that the final rule will lead to a net decrease in $PM_{2.5}$-related health impacts (see Section III.G.5 of this preamble for more information about the air quality modeling results). While the PM-related air quality impacts are relatively small, the decrease in population-weighted national average $PM_{2.5}$ exposure results in a net decrease in adverse PM-related human health impacts (the decrease in national population-weighted annual average $PM_{2.5}$ is 0.0036 $\mu g/m^3$).

The air quality modeling (discussed in Section III.G.5) projects very small increases in ozone concentrations in many areas, but these are driven by the ethanol production volumes mandated by the recently finalized RFS2 rule and are not due to the standards finalized in this rule. While the ozone-related impacts are very small, the increase in population-weighted national average ozone exposure results in a small increase in ozone-related health impacts (population-weighted maximum 8-hour average ozone increases by 0.0104 ppb).

We base our analysis of the final rule's impact on human health in 2030 on peer-reviewed studies of air quality and human health effects.[471] [472] These methods are described in more detail in the RIA that accompanies this action. Our benefits methods are also consistent with recent rulemaking analyses such as the proposed Portland Cement National Emissions Standards for Hazardous Air Pollutants (NESHAP) RIA,[473] the final NO_2 NAAQS,[474] and the final Category 3 Marine Engine rule.[475] To model the

[470] EPA typically analyzes rule impacts (emissions, air quality, costs and benefits) in the year in which they occur; for this analysis, we selected 2030 as a representative future year. We refer to this analysis as the "Calendar Year" (CY) analysis. EPA also conducted a separate analysis of the impacts over the model year lifetimes of the 2012 through 2016 model year vehicles. We refer to this analysis as the "Model Year" (MY) analysis. In contrast to the CY analysis, the MY lifetime analysis shows the lifetime impacts of the program on each of these MY fleets over the course of its lifetime.

[471] U.S. Environmental Protection Agency. (2006). *Final Regulatory Impact Analysis (RIA) for the National Ambient Air Quality Standards for Particulate Matter.* Prepared by: Office of Air and Radiation. Retrieved March 26, 2009 at *http://www.epa.gov/ttn/ecas/ria.html.* EPA–HQ–OAR–2009–0472–0240.

[472] U.S. Environmental Protection Agency. (2008). *Final Ozone NAAQS Regulatory Impact Analysis.* Prepared by: Office of Air and Radiation, Office of Air Quality Planning and Standards. Retrieved March 26, 2009 at *http://www.epa.gov/ttn/ecas/ria.html.* EPA–HQ–OAR–2009–0472–0238.

[473] U.S. Environmental Protection Agency (U.S. EPA). 2009. Regulatory Impact Analysis: National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry. Office of Air Quality Planning and Standards, Research Triangle Park, NC. April. Available on the Internet at *http://www.epa.gov/ttn/ecas/regdata/RIAs/portlandcementria_4-20-09.pdf.* Accessed March 15, 2010. EPA–HQ–OAR–2009–0472–0241.

[474] U.S. Environmental Protection Agency (U.S. EPA). 2010. Final NO_2 NAAQS Regulatory Impact Analysis (RIA). Office of Air Quality Planning and Standards, Research Triangle Park, NC. April. Available on the Internet at *http://www.epa.gov/ttn/ecas/regdata/RIAs/FinalNO2RIAfulldocument.pdf.* Accessed March 15, 2010. EPA–HQ–OAR–2009–0472–0237.

[475] U.S. Environmental Protection Agency. 2009. Regulatory Impact Analysis: Control of Emissions of Air Pollution from Category 3 Marine Diesel

ozone and PM air quality impacts of the final rule, we used the Community Multiscale Air Quality (CMAQ) model (see Section III.G.5). The modeled ambient air quality data serves as an input to the Environmental Benefits Mapping and Analysis Program (BenMAP).[476] BenMAP is a computer program developed by the U.S. EPA that integrates a number of the modeling elements used in previous analyses (*e.g.,* interpolation functions, population projections, health impact functions, valuation functions, analysis and pooling methods) to translate modeled air concentration estimates into health effects incidence estimates and monetized benefits estimates.

The range of total monetized ozone- and PM-related health impacts is presented in Table III.H.7–1. We present total benefits based on the PM- and ozone-related premature mortality function used. The benefits ranges therefore reflect the addition of each estimate of ozone-related premature mortality (each with its own row in Table III.H.7–1) to estimates of PM-related premature mortality. These estimates represent EPA's preferred approach to characterizing a best estimate of benefits. As is the nature of Regulatory Impact Analyses (RIAs), the assumptions and methods used to estimate air quality benefits evolve to reflect the Agency's most current interpretation of the scientific and economic literature.

TABLE III.H.7–1—ESTIMATED 2030 MONETIZED PM- AND OZONE-RELATED HEALTH BENEFITS [a]

2030 Total Ozone and PM Benefits—PM Mortality Derived from American Cancer Society Analysis and Six-Cities Analysis [a]			
Premature Ozone Mortality Function	Reference	Total Benefits (Millions, 2007$, 3% Discount Rate) [b c d]	Total Benefits (Millions, 2007$, 7% Discount Rate) [b c d]
Multi-city analyses	Bell *et al.,* 2004	Total: $510–$1,300	Total: $460–$1,200
		PM: $550–$1,300	PM: $500–$1,200
		Ozone: −$40	Ozone: −$40
	Huang *et al.,* 2005	Total: $490–$1,300	Total: $440–$1,200
		PM: $550–$1,300	PM: $500–$1,200
		Ozone: −$64	Ozone: −$64
	Schwartz, 2005	Total: $490–$1,300	Total: $440–$1,200
		PM: $550–$1,300	PM: $500–$1,200
		Ozone: −$60	Ozone: −$60
Meta-analyses	Bell *et al.,* 2005	Total: $430–$1,200	Total: $380–$1,100
		PM: $550–$1,300	PM: $500–$1,200
		Ozone: −$120	Ozone: −$120
	Ito *et al.,* 2005	Total: $380–$1,200	Total: $330–$1,000
		PM: $550–$1,300	PM: $500–$1,200
		Ozone: −$170	Ozone: −$170
	Levy *et al.,* 2005	Total: $380–$1,200	Total: $330–$1,000
		PM: $550–$1,300	PM: $500–$1,200
		Ozone: −$170	Ozone: −$170

Notes:

[a] Total includes premature mortality-related and morbidity-related ozone and $PM_{2.5}$ benefits. Range was developed by adding the estimate from the ozone premature mortality function to the estimate of $PM_{2.5}$-related premature mortality derived from either the ACS study (Pope *et al.,* 2002)[477] or the Six-Cities study (Laden et al., 2006).[478]

[b] Note that total benefits presented here do not include a number of unquantified benefits categories. A detailed listing of unquantified health and welfare effects is provided in Table III.H.7–2.

[c] Results reflect the use of both a 3 and 7 percent discount rate, as recommended by EPA's Guidelines for Preparing Economic Analyses and OMB Circular A–4. Results are rounded to two significant digits for ease of presentation and computation.

[d] Negatives indicate a disbenefit, or an increase in health effect incidence.

The benefits in Table III.H.7–1 include all of the human health impacts we are able to quantify and monetize at this time. However, the full complement of human health and welfare effects associated with PM and ozone remain unquantified because of current limitations in methods or available data. We have not quantified a number of known or suspected health effects linked with ozone and PM for which appropriate health impact functions are not available or which do not provide easily interpretable outcomes (*e.g.,* changes in heart rate variability). Additionally, we are unable to quantify a number of known welfare effects, including reduced acid and particulate deposition damage to cultural monuments and other materials, and environmental benefits due to reductions of impacts of eutrophication in coastal areas. These are listed in Table III.H.7–2. As a result, the health benefits quantified in this section are likely underestimates of the total benefits attributable to the final rule.

Engines. EPA–420–R–09–019, December 2009. Prepared by Office of Air and Radiation. *http://www.epa.gov/otaq/regs/nonroad/marine/ci/420r09019.pdf.* Accessed February 9, 2010. EPA–HQ–OAR–2009–0472–0283.

[476] Information on BenMAP, including downloads of the software, can be found at *http://www.epa.gov/ttn/ecas/benmodels.html.*

[477] Pope, C.A., III, R.T. Burnett, M.J. Thun, E.E. Calle, D. Krewski, K. Ito, and G.D. Thurston (2002). "Lung Cancer, Cardiopulmonary Mortality, and Long-term Exposure to Fine Particulate Air Pollution." Journal of the American Medical Association 287:1132–1141. EPA–HQ–OAR–2009–0472–0263.

[478] Laden, F., J. Schwartz, F.E. Speizer, and D.W. Dockery (2006). Reduction in Fine Particulate Air Pollution and Mortality. American Journal of Respiratory and Critical Care Medicine. 173:667–672. EPA–HQ–OAR–2009–0472–1661.

TABLE III.H.7–2—UNQUANTIFIED AND NON-MONETIZED POTENTIAL EFFECTS

Pollutant/effects	Effects not included in analysis—changes in:
Ozone Health [a]	Chronic respiratory damage [b].
	Premature aging of the lungs [b].
	Non-asthma respiratory emergency room visits.
	Exposure to UVb (+/−) [e].
Ozone Welfare	Yields for
	—commercial forests.
	—some fruits and vegetables.
	—non-commercial crops.
	Damage to urban ornamental plants.
	Impacts on recreational demand from damaged forest aesthetics.
	Ecosystem functions.
	Exposure to UVb (+/−) [e].
PM Health [c]	Premature mortality—short term exposures [d].
	Low birth weight.
	Pulmonary function.
	Chronic respiratory diseases other than chronic bronchitis.
	Non-asthma respiratory emergency room visits.
	Exposure to UVb (+/−) [e].
PM Welfare	Residential and recreational visibility in non-Class I areas.
	Soiling and materials damage.
	Damage to ecosystem functions.
	Exposure to UVb (+/−) [e].
Nitrogen and Sulfate Deposition Welfare	Commercial forests due to acidic sulfate and nitrate deposition.
	Commercial freshwater fishing due to acidic deposition.
	Recreation in terrestrial ecosystems due to acidic deposition.
	Existence values for currently healthy ecosystems.
	Commercial fishing, agriculture, and forests due to nitrogen deposition.
	Recreation in estuarine ecosystems due to nitrogen deposition.
	Ecosystem functions.
	Passive fertilization.
CO Health	Behavioral effects.
HC/Toxics Health [f]	Cancer (benzene, 1,3-butadiene, formaldehyde, acetaldehyde).
	Anemia (benzene).
	Disruption of production of blood components (benzene).
	Reduction in the number of blood platelets (benzene).
	Excessive bone marrow formation (benzene).
	Depression of lymphocyte counts (benzene).
	Reproductive and developmental effects (1,3-butadiene).
	Irritation of eyes and mucus membranes (formaldehyde).
	Respiratory irritation (formaldehyde).
	Asthma attacks in asthmatics (formaldehyde).
	Asthma-like symptoms in non-asthmatics (formaldehyde).
	Irritation of the eyes, skin, and respiratory tract (acetaldehyde).
	Upper respiratory tract irritation and congestion (acrolein).
HC/Toxics Welfare	Direct toxic effects to animals.
	Bioaccumulation in the food chain.
	Damage to ecosystem function.
	Odor.

Notes:

[a] The public health impact of biological responses such as increased airway responsiveness to stimuli, inflammation in the lung, acute inflammation and respiratory cell damage, and increased susceptibility to respiratory infection are likely partially represented by our quantified endpoints.

[b] The public health impact of effects such as chronic respiratory damage and premature aging of the lungs may be partially represented by quantified endpoints such as hospital admissions or premature mortality, but a number of other related health impacts, such as doctor visits and decreased athletic performance, remain unquantified.

[c] In addition to primary economic endpoints, there are a number of biological responses that have been associated with PM health effects including morphological changes and altered host defense mechanisms. The public health impact of these biological responses may be partly represented by our quantified endpoints.

[d] While some of the effects of short-term exposures are likely to be captured in the estimates, there may be premature mortality due to short-term exposure to PM not captured in the cohort studies used in this analysis. However, the PM mortality results derived from the expert elicitation do take into account premature mortality effects of short term exposures.

[e] May result in benefits or disbenefits.

[f] Many of the key hydrocarbons related to this rule are also hazardous air pollutants listed in the CAA.

While there will be impacts associated with air toxic pollutant emission changes that result from the final rule, we do not attempt to monetize those impacts. This is primarily because currently available tools and methods to assess air toxics risk from mobile sources at the national scale are not adequate for extrapolation to incidence estimations or benefits assessment. The best suite of tools and methods currently available for assessment at the national scale are those used in the National-Scale Air Toxics Assessment (NATA). The EPA Science Advisory Board specifically commented in their review of the 1996 NATA that these tools were not yet

ready for use in a national-scale benefits analysis, because they did not consider the full distribution of exposure and risk, or address sub-chronic health effects.[479] While EPA has since improved the tools, there remain critical limitations for estimating incidence and assessing benefits of reducing mobile source air toxics. EPA continues to work to address these limitations; however, we did not have the methods and tools available for national-scale application in time for the analysis of the final rule.[480]

EPA is also unaware of specific information identifying any effects on listed endangered species from the small fluctuations in pollutant concentrations associated with this rule (*see* Section III.G.5). Furthermore, our current modeling tools are not designed to trace fluctuations in ambient concentration levels to potential impacts on particular endangered species.

i. Quantified Human Health Impacts

Tables III.H.7–3 and III.H.7–4 present the annual $PM_{2.5}$ and ozone health impacts in the 48 contiguous U.S. states associated with the final rule for 2030. For each endpoint presented in Tables III.H.7–3 and III.H.7–4, we provide both the mean estimate and the 90% confidence interval.

Using EPA's preferred estimates, based on the American Cancer Society (ACS) and Six-Cities studies and no threshold assumption in the model of mortality, we estimate that the final rule will result in between 60 and 150 cases of avoided $PM_{2.5}$-related premature deaths annually in 2030. As a sensitivity analysis, when the range of expert opinion is used, we estimate between 22 and 200 fewer premature mortalities in 2030 (*see* Table 7.7 in the RIA that accompanies this rule). For ozone-related premature mortality in 2030, we estimate a range of between 4 to 18 additional premature mortalities related to the ethanol production volumes mandated by the recently finalized RFS2 rule[481] (and reflected in the air quality modeling for this rule), but are not due to the final standards themselves.

TABLE III.H.7–3—ESTIMATED $PM_{2.5}$-RELATED HEALTH IMPACTS [a]

Health effect	2030 Annual reduction in incidence (5th%–95th%ile)
Premature Mortality—Derived from epidemiology literature: [b]	
Adult, age 30+, ACS Cohort Study (Pope *et al.,* 2002)	60 (23–96)
Adult, age 25+, Six-Cities Study (Laden *et al.,* 2006)	150 (83–220)
Infant, age <1 year (Woodruff *et al.,* 1997)	0 (0–1)
Chronic bronchitis (adult, age 26 and over)	42 (8–77)
Non-fatal myocardial infarction (adult, age 18 and over)	100 (38–170)
Hospital admissions—respiratory (all ages) [c]	13 (7–20)
Hospital admissions—cardiovascular (adults, age >18) [d]	32 (23–38)
Emergency room visits for asthma (age 18 years and younger)	42 (25–59)
Acute bronchitis (children, age 8–12)	95 (0–190)
Lower respiratory symptoms (children, age 7–14)	1,100 (540–1,700)
Upper respiratory symptoms (asthmatic children, age 9–18)	850 (270–1,400)
Asthma exacerbation (asthmatic children, age 6–18)	1,000 (120–2,900)
Work loss days	7,600 (6,600–8,500)
Minor restricted activity days (adults age 18–65)	45,000 (38,000–52,000)

Notes:

[a] Incidence is rounded to two significant digits. Estimates represent incidence within the 48 contiguous United States.

[b] PM-related adult mortality based upon the American Cancer Society (ACS) Cohort Study (Pope *et al.,* 2002) and the Six-Cities Study (Laden *et al.,* 2006). Note that these are two alternative estimates of adult mortality and should not be summed. PM-related infant mortality based upon a study by Woodruff, Grillo, and Schoendorf (1997).[482]

[c] Respiratory hospital admissions for PM include admissions for chronic obstructive pulmonary disease (COPD), pneumonia and asthma.

[d] Cardiovascular hospital admissions for PM include total cardiovascular and subcategories for ischemic heart disease, dysrhythmias, and heart failure.

TABLE III.H.7–4—ESTIMATED OZONE-RELATED HEALTH IMPACTS [a]

Health effect	2030 Annual reduction in incidence (5th%–95th%ile)
Premature Mortality, All ages [b]	
Multi-City Analyses:	
Bell *et al.* (2004)—Non-accidental	−4 (−8–0)
Huang *et al.* (2005)—Cardiopulmonary	−7 (−14–1)

[479] Science Advisory Board. 2001. NATA—Evaluating the National-Scale Air Toxics Assessment for 1996—an SAB Advisory. *http://www.epa.gov/ttn/atw/sab/sabrev.html.* EPA–HQ–OAR–2009–0472–0244.

[480] In April 2009, EPA hosted a workshop on estimating the benefits or reducing hazardous air pollutants. This workshop built upon the work accomplished in the June 2000 Science Advisory Board/EPA Workshop on the Benefits of Reductions in Exposure to Hazardous Air Pollutants, which generated thoughtful discussion on approaches to estimating human health benefits from reductions in air toxics exposure, but no consensus was reached on methods that could be implemented in the near term for a broad selection of air toxics. Please visit *http://epa.gov/air/toxicair/2009workshop.html.* for more information about the workshop and its associated materials.

[481] EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332. EPA–HQ–OAR–2009–0472–11332. *See also* 75 FR 14670, March 26, 2010.

[482] Woodruff, T.J., J. Grillo, and K.C. Schoendorf. 1997. "The Relationship Between Selected Causes of Postneonatal Infant Mortality and Particulate Air Pollution in the United States." *Environmental Health Perspectives* 105(6):608–612. EPA–HQ–OAR–2009–0472–0382.

TABLE III.H.7–4—ESTIMATED OZONE-RELATED HEALTH IMPACTS [a]—Continued

Health effect	2030 Annual reduction in incidence (5th%–95th%ile)
Schwartz (2005)—Non-accidental	−6 (−13–1)
Meta-analyses:	
Bell *et al.* (2005)—All cause	−13 (−24–−2)
Ito *et al.* (2005)—Non-accidental	−18 (−30–−6)
Levy *et al.* (2005)—All cause	−18 (−28–−9)
Hospital admissions—respiratory causes (adult, 65 and older) [c]	−38 (−86–−6)
Hospital admissions—respiratory causes (children, under 2)	−6 (−13–1)
Emergency room visit for asthma (all ages)	−16 (−51–8)
Minor restricted activity days (adults, age 18–65)	−18,000 (−40,000–3,700)
School absence days	−7,700 (−16,000–1,200)

Notes:

[a] Negatives indicate a disbenefit, or an increase in health effect incidence. Incidence is rounded to two significant digits. Estimates represent incidence within the 48 contiguous U.S.

[b] Estimates of ozone-related premature mortality are based upon incidence estimates derived from several alternative studies: Bell *et al.* (2004); Huang *et al.* (2005); Schwartz (2005); Bell *et al.* (2005); Ito *et al.* (2005); Levy *et al.* (2005). The estimates of ozone-related premature mortality should therefore not be summed.

[c] Respiratory hospital admissions for ozone include admissions for all respiratory causes and subcategories for COPD and pneumonia.

ii. Monetized Benefits

Table III.H.7–5 presents the estimated monetary value of changes in the incidence of ozone and $PM_{2.5}$-related health effects. All monetized estimates are stated in 2007$. These estimates account for growth in real gross domestic product (GDP) per capita between the present and 2030. Our estimate of total monetized benefits in 2030 for the final rule, using the ACS and Six-Cities PM mortality studies and the range of ozone mortality assumptions, is between $380 and $1,300 million, assuming a 3 percent discount rate, or between $330 and $1,200 million, assuming a 7 percent discount rate. As the results indicate, total benefits are driven primarily by the reduction in $PM_{2.5}$-related premature fatalities each year.

TABLE III.H.7–5—ESTIMATED MONETARY VALUE OF CHANGES IN INCIDENCE OF HEALTH AND WELFARE EFFECTS

[In Millions of 2007$] [a b]

$PM_{2.5}$-related health effect		2030 (5th and 95th%ile)
Premature Mortality—Derived from Epidemiology Studies [c d].	Adult, age 30+—ACS study (Pope *et al.,* 2002)	
	3% discount rate	$510 ($70–$1,300)
	7% discount rate	$460 ($63–$1,200)
	Adult, age 25+—Six-Cities study (Laden *et al.,* 2006)	
	3% discount rate	$1,300 ($190–$3,300)
	7% discount rate	$1,200 ($180–$3,000)
	Infant Mortality, <1 year—(Woodruff *et al.* 1997)	$1.8 ($0–$7.0)
Chronic bronchitis (adults, 26 and over)		$22 ($1.9–$77)
Non-fatal acute myocardial infarctions		
3% discount rate		$14 ($3.9–$35)
7% discount rate		$14 ($3.6–$35)
Hospital admissions for respiratory causes		$0.20 ($0.01–$0.29)
Hospital admissions for cardiovascular causes		$0.91 ($0.58–$1.3)
Emergency room visits for asthma		$0.016 ($0.009–$0.024)
Acute bronchitis (children, age 8–12)		$0.007 ($0–$0.018)
Lower respiratory symptoms (children, 7–14)		$0.022 ($0.009–$0.043)
Upper respiratory symptoms (asthma, 9–11)		$0.027 ($0.008–$0.061)
Asthma exacerbations		$0.058 ($0.006–$0.17)
Work loss days		$1.2 ($1.0–$1.3)
Minor restricted-activity days (MRADs)		$2.9 ($1.7–$4.2)
Ozone-related Health Effect		
Premature Mortality, All ages—Derived from Multi-city analyses.	Bell *et al.,* 2004	−$38 (−$110–$4.2)
	Huang *et al.,* 2005	−$62 (−$180–$4.7)
	Schwartz, 2005	−$58 (−$170–$8.8)
Premature Mortality, All ages—Derived from Meta-analyses.	Bell *et al.,* 2005	−$120 (−$330–−$7.9)
	Ito *et al.,* 2005	−$170 (−$430–−$19)
	Levy *et al.,* 2005	−$170 (−$410–−$21)
Hospital admissions—respiratory causes (adult, 65 and older)		−$0.92 (−$2.1–$0.27)

TABLE III.H.7–5—ESTIMATED MONETARY VALUE OF CHANGES IN INCIDENCE OF HEALTH AND WELFARE EFFECTS—Continued

[In Millions of 2007$] [a b]

$PM_{2.5}$-related health effect	2030 (5th and 95th%ile)
Hospital admissions—respiratory causes (children, under 2)	−$.21 (−$.45–$0.031)
Emergency room visit for asthma (all ages)	−$0.006 (−$0.018–$0.003)
Minor restricted activity days (adults, age 18–65)	−$1.2 (−$2.7–$0.25)
School absence days	−$0.71 (−$1.4–$0.11)

Notes:

[a] Negatives indicate a disbenefit, or an increase in health effect incidence. Monetary benefits are rounded to two significant digits for ease of presentation and computation. PM and ozone benefits are nationwide.

[b] Monetary benefits adjusted to account for growth in real GDP per capita between 1990 and the analysis year (2030).

[c] Valuation assumes discounting over the SAB recommended 20 year segmented lag structure. Results reflect the use of 3 percent and 7 percent discount rates consistent with EPA and OMB guidelines for preparing economic analyses.

iii. What are the limitations of the benefits analysis?

Every benefit-cost analysis examining the potential effects of a change in environmental protection requirements is limited to some extent by data gaps, limitations in model capabilities (such as geographic coverage), and uncertainties in the underlying scientific and economic studies used to configure the benefit and cost models. Limitations of the scientific literature often result in the inability to estimate quantitative changes in health and environmental effects, such as potential increases in premature mortality associated with increased exposure to carbon monoxide. Deficiencies in the economics literature often result in the inability to assign economic values even to those health and environmental outcomes which can be quantified. These general uncertainties in the underlying scientific and economics literature, which can lead to valuations that are higher or lower, are discussed in detail in the RIA and its supporting references. Key uncertainties that have a bearing on the results of the benefit-cost analysis of the final rule include the following:

- The exclusion of potentially significant and unquantified benefit categories (such as health, odor, and ecological impacts of air toxics, ozone, and PM);
- Errors in measurement and projection for variables such as population growth;
- Uncertainties in the estimation of future year emissions inventories and air quality;
- Uncertainty in the estimated relationships of health and welfare effects to changes in pollutant concentrations including the shape of the C–R function, the size of the effect estimates, and the relative toxicity of the many components of the PM mixture;
- Uncertainties in exposure estimation; and
- Uncertainties associated with the effect of potential future actions to limit emissions.

As Table III.H.7–5 indicates, total benefits are driven primarily by the reduction in $PM_{2.5}$-related premature mortalities each year. Some key assumptions underlying the premature mortality estimates include the following, which may also contribute to uncertainty:

- Inhalation of fine particles is causally associated with premature death at concentrations near those experienced by most Americans on a daily basis. Although biological mechanisms for this effect have not yet been completely established, the weight of the available epidemiological, toxicological, and experimental evidence supports an assumption of causality. The impacts of including a probabilistic representation of causality were explored in the expert elicitation-based results of the PM NAAQS RIA.
- All fine particles, regardless of their chemical composition, are equally potent in causing premature mortality. This is an important assumption, because PM produced via transported precursors emitted from engines may differ significantly from PM precursors released from electric generating units and other industrial sources. However, no clear scientific grounds exist for supporting differential effects estimates by particle type.
- The C–R function for fine particles is approximately linear within the range of ambient concentrations under consideration. Thus, the estimates include health benefits from reducing fine particles in areas with varied concentrations of PM, including both regions that may be in attainment with $PM_{2.5}$ standards and those that are at risk of not meeting the standards.
- There is uncertainty in the magnitude of the association between ozone and premature mortality. The range of ozone impacts associated with the final rule is estimated based on the risk of several sources of ozone-related mortality effect estimates. In a recent report on the estimation of ozone-related premature mortality published by the National Research Council, a panel of experts and reviewers concluded that short-term exposure to ambient ozone is likely to contribute to premature deaths and that ozone-related mortality should be included in estimates of the health benefits of reducing ozone exposure.[483] EPA has requested advice from the National Academy of Sciences on how best to quantify uncertainty in the relationship between ozone exposure and premature mortality in the context of quantifying benefits.

Acknowledging omissions and uncertainties, we present a best estimate of the total benefits based on our interpretation of the best available scientific literature and methods supported by EPA's technical peer review panel, the Science Advisory Board's Health Effects Subcommittee (SAB–HES). The National Academies of Science (NRC, 2002) has also reviewed EPA's methodology for analyzing the health benefits of measures taken to reduce air pollution. EPA addressed many of these comments in the analysis of the final PM NAAQS.[484] [485] This

[483] National Research Council (NRC), 2008. Estimating Mortality Risk Reduction and Economic Benefits from Controlling Ozone Air Pollution. The National Academies Press: Washington, DC. EPA–HQ–OAR–2009–0472–0322.

[484] National Research Council (NRC). 2002. Estimating the Public Health Benefits of Proposed Air Pollution Regulations. The National Academies Press: Washington, DC.

[485] U.S. Environmental Protection Agency. October 2006. *Final Regulatory Impact Analysis (RIA) for the National Ambient Air Quality*

Continued

analysis incorporates this most recent work to the extent possible.

b. PM-Related Monetized Benefits of the Model Year (MY) Analysis

As described in Section III.G, the final standards will reduce emissions of several criteria and toxic pollutants and precursors. In the MY analysis, EPA estimates the economic value of the human health benefits associated with reducing $PM_{2.5}$ exposure. Due to analytical limitations, this analysis does not estimate benefits related to other criteria pollutants (such as ozone, NO_2 or SO_2) or toxics pollutants, nor does it monetize all of the potential health and welfare effects associated with $PM_{2.5}$.

The MY analysis uses a "benefit-per-ton" method to estimate a selected suite of $PM_{2.5}$-related health benefits described below. These $PM_{2.5}$ benefit-per-ton estimates provide the total monetized human health benefits (the sum of premature mortality and premature morbidity) of reducing one ton of directly emitted $PM_{2.5}$, or its precursors (such as NO_X, SO_X, and VOCs), from a specified source. Ideally, the human health benefits associated with the MY analysis would be estimated based on changes in ambient $PM_{2.5}$ as determined by full-scale air quality modeling. However, this modeling was not possible in the timeframe for the final rule.

The dollar-per-ton estimates used in this analysis are provided in Table III.H.7–6. In the summary of costs and benefits, Section III.H.10 of this preamble, EPA presents the monetized value of PM-related improvements associated with the rule.

TABLE III.H.7–6—BENEFITS-PER-TON VALUES (2007$) DERIVED USING THE ACS COHORT STUDY FOR PM-RELATED PREMATURE MORTALITY (POPE ET AL., 2002) [a]

Year [c]	All sources [d]		Stationary (non-EGU) sources		Mobile sources	
	SO_X	VOC	NO_X	Direct $PM_{2.5}$	NO_X	Direct $PM_{2.5}$
Estimated Using a 3 Percent Discount Rate [b]						
2015	$28,000	$1,200	$4,700	$220,000	$4,900	$270,000
2020	31,000	1,300	5,100	240,000	5,300	290,000
2030	36,000	1,500	6,100	280,000	6,400	350,000
2040	43,000	1,800	7,200	330,000	7,600	420,000
Estimated Using a 7 Percent Discount Rate [b]						
2015	26,000	1,100	4,200	200,000	4,400	240,000
2020	28,000	1,200	4,600	220,000	4,800	270,000
2030	33,000	1,400	5,500	250,000	5,800	320,000
2040	39,000	1,600	6,600	300,000	6,900	380,000

[a] The benefit-per-ton estimates presented in this table are based on an estimate of premature mortality derived from the ACS study (Pope *et al.,* 2002). If the benefit-per-ton estimates were based on the Six-Cities study (Laden *et al.,* 2006), the values would be approximately 145% (nearly two-and-a-half times) larger.

[b] The benefit-per-ton estimates presented in this table assume either a 3 percent or 7 percent discount rate in the valuation of premature mortality to account for a twenty-year segmented cessation lag.

[c] Benefit-per-ton values were estimated for the years 2015, 2020, and 2030. For 2040, EPA and NHTSA extrapolated exponentially based on the growth between 2020 and 2030.

[d] Note that the benefit-per-ton value for SO_X is based on the value for Stationary (Non-EGU) sources; no SO_X value was estimated for mobile sources. The benefit-per-ton value for VOCs was estimated across all sources.

The benefit per-ton technique has been used in previous analyses, including EPA's recent Ozone National Ambient Air Quality Standards (NAAQS) RIA,[486] the proposed Portland Cement National Emissions Standards for Hazardous Air Pollutants (NESHAP) RIA,[487] and the final NO_2 NAAQS (U.S. EPA, 2009b).[488] Table III.H.7–7 shows the quantified and unquantified $PM_{2.5}$-related co-benefits captured in those benefit-per-ton estimates.

TABLE III.H.7–7—HUMAN HEALTH AND WELFARE EFFECTS OF $PM_{2.5}$

Pollutant/effect	Quantified and monetized in primary estimates	Unquantified effects changes in
$PM_{2.5}$	Adult premature mortality Bronchitis: chronic and acute Hospital admissions: respiratory and cardiovascular. Emergency room visits for asthma Nonfatal heart attacks (myocardial infarction). Lower and upper respiratory illness	Subchronic bronchitis cases. Low birth weight. Pulmonary function. Chronic respiratory diseases other than chronic bronchitis. Non-asthma respiratory emergency room visits. Visibility.

Standards for Particulate Matter. Prepared by: Office of Air and Radiation. Available at *http://www.epa.gov/ttn/ecas/ria.html.* EPA–HQ–OAR–2009–0472–0240.

[486] U.S. Environmental Protection Agency (U.S. EPA). 2008. Regulatory Impact Analysis, 2008 National Ambient Air Quality Standards for Ground-level Ozone, Chapter 6. Office of Air Quality Planning and Standards, Research Triangle Park, NC. March. Available at *http://www.epa.gov/ttn/ecas/regdata/RIAs/6-ozoneriachapter6.pdf.* Accessed March 15, 2010. EPA–HQ–OAR–2009–0472–0108.

[487] U.S. Environmental Protection Agency (U.S. EPA). 2009. Regulatory Impact Analysis: National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry. Office of Air Quality Planning and Standards, Research Triangle Park, NC. April. Available on the Internet at *http://www.epa.gov/ttn/ecas/regdata/RIAs/portlandcementria_4–20–09.pdf.* Accessed March 15, 2010. EPA–HQ–OAR–2009–0472–0241.

[488] U.S. Environmental Protection Agency (U.S. EPA). 2010. Final NO2 NAAQS Regulatory Impact Analysis (RIA). Office of Air Quality Planning and Standards, Research Triangle Park, NC. April. Available on the Internet at *http://www.epa.gov/ttn/ecas/regdata/RIAs/FinalNO2RIAfulldocument.pdf.* Accessed March 15, 2010. EPA–HQ–OAR–2009–0472–0237.

TABLE III.H.7–7—HUMAN HEALTH AND WELFARE EFFECTS OF $PM_{2.5}$—Continued

Pollutant/effect	Quantified and monetized in primary estimates	Unquantified effects changes in
	Minor restricted-activity days Work loss days Asthma exacerbations (asthmatic population) Infant mortality	Household soiling.

Consistent with the NO_2 NAAQS,[489] the benefits estimates utilize the concentration-response functions as reported in the epidemiology literature. To calculate the total monetized impacts associated with quantified health impacts, EPA applies values derived from a number of sources. For premature mortality, EPA applies a value of a statistical life (VSL) derived from the mortality valuation literature. For certain health impacts, such as chronic bronchitis and a number of respiratory-related ailments, EPA applies willingness-to-pay estimates derived from the valuation literature. For the remaining health impacts, EPA applies values derived from current cost-of-illness and/or wage estimates.

Readers interested in reviewing the complete methodology for creating the benefit-per-ton estimates used in this analysis can consult the Technical Support Document (TSD)[490] accompanying the recent final ozone NAAQS RIA. Readers can also refer to Fann *et al.* (2009)[491] for a detailed description of the benefit-per-ton methodology.[492] A more detailed description of the benefit-per-ton estimates is also provided in the Joint TSD that accompanies this rulemaking.

As described in the documentation for the benefit per-ton estimates cited above, national per-ton estimates were developed for selected pollutant/source category combinations. The per-ton values calculated therefore apply only to tons reduced from those specific pollutant/source combinations (*e.g.,* NO_2 emitted from mobile sources; direct PM emitted from stationary sources). Our estimate of $PM_{2.5}$ benefits is therefore based on the total direct $PM_{2.5}$ and PM-related precursor emissions controlled by sector and multiplied by each per-ton value.

The benefit-per-ton estimates are subject to a number of assumptions and uncertainties.

- Dollar-per-ton estimates do not reflect local variability in population density, meteorology, exposure, baseline health incidence rates, or other local factors that might lead to an overestimate or underestimate of the actual benefits of controlling fine particulates. In Section III.G, we describe the full-scale air quality modeling conducted for the 2030 calendar year analysis in an effort to capture this variability.
- There are several health benefits categories that EPA was unable to quantify in the MY analysis due to limitations associated with using benefits-per-ton estimates, several of which could be substantial. Because NO_X and VOC emissions are also precursors to ozone, changes in NO_X and VOC would also impact ozone formation and the health effects associated with ozone exposure. Benefits-per-ton estimates do not exist for ozone, however, due to issues associated with the complexity of the atmospheric air chemistry and nonlinearities associated with ozone formation. The PM-related benefits-per-ton estimates also do not include any human welfare or ecological benefits. Please refer to Chapter 7 of the RIA that accompanies this rule for a description of the quantification and monetization of health impacts for the CY analysis and a description of the unquantified co-pollutant benefits associated with this rulemaking.
- The benefit-per-ton estimates used in this analysis incorporate projections of key variables, including atmospheric conditions, source level emissions, population, health baselines and incomes, technology. These projections introduce some uncertainties to the benefit per ton estimates.
- As described above, using the benefit-per-ton value derived from the ACS study (Pope et al., 2002) alone provides an incomplete characterization of $PM_{2.5}$ benefits. When placed in the context of the Expert Elicitation results, this estimate falls toward the lower end of the distribution. By contrast, the estimated $PM_{2.5}$ benefits using the coefficient reported by Laden in that author's reanalysis of the Harvard Six-Cities cohort fall toward the upper end of the Expert Elicitation distribution results.

As mentioned above, emissions changes and benefits-per-ton estimates alone are not a good indication of local or regional air quality and health impacts, as there may be localized impacts associated with this rulemaking. Additionally, the atmospheric chemistry related to ambient concentrations of $PM_{2.5}$, ozone and air toxics is very complex. Full-scale photochemical modeling is therefore necessary to provide the needed spatial and temporal detail to more completely and accurately estimate the changes in ambient levels of these pollutants and their associated health and welfare impacts. Timing and resource constraints precluded EPA from conducting full-scale photochemical air quality modeling for the MY analysis. We have, however, conducted national-scale air quality modeling for the CY analysis to analyze the impacts of the standards on $PM_{2.5}$, ozone, and selected air toxics.

8. Energy Security Impacts

This rule to reduce GHG emissions in light-duty vehicles results in improved fuel efficiency which, in turn, helps to reduce U.S. petroleum imports. A reduction of U.S. petroleum imports reduces both financial and strategic risks caused by potential sudden disruptions in the supply of imported petroleum to the U.S. This reduction in

[489] Although we summarize the main issues in this chapter, we encourage interested readers to see the benefits chapter of the final NO_2 NAAQS for a more detailed description of recent changes to the PM benefits presentation and preference for the no-threshold model.

[490] U.S. Environmental Protection Agency (U.S. EPA). 2008b. Technical Support Document: Calculating Benefit per-Ton estimates, Ozone NAAQS Docket #EPA–HQ–OAR–2007–0225–0284. Office of Air Quality Planning and Standards, Research Triangle Park, NC. March. Available on the Internet at *http://www.regulations.gov.* EPA–HQ–OAR–2009–0472–0228.

[491] Fann, N. *et al.* (2009). The influence of location, source, and emission type in estimates of the human health benefits of reducing a ton of air pollution. Air Qual Atmos Health. Published online: 09 June, 2009. EPA–HQ–OAR–2009–0472–0229.

[492] The values included in this report are different from those presented in the article cited above. Benefits methods change to reflect new information and evaluation of the science. Since publication of the June 2009 article, EPA has made two significant changes to its benefits methods: (1) We no longer assume that a threshold exists in PM-related models of health impacts; and (2) We have revised the Value of a Statistical Life to equal $6.3 million (year 2000$), up from an estimate of $5.5 million (year 2000$) used in the June 2009 report. Please refer to the following Web site for updates to the dollar-per-ton estimates: *http://www.epa.gov/air/benmap/bpt.html.* EPA–HQ–OAR–2009–0472–0227.

risk is a measure of improved U.S. energy security. This section summarizes our estimate of the monetary value of the energy security benefits of the GHG vehicle standards against the reference case by estimating the impact of the expanded use of lower-GHG vehicle technologies on U.S. oil imports and avoided U.S. oil import expenditures. Additional discussion of this issue can be found in Chapter 5.1 of EPA's RIA and Section 4.2.8 of the TSD.

a. Implications of Reduced Petroleum Use on U.S. Imports

In 2008, U.S. petroleum import expenditures represented 21 percent of total U.S. imports of all goods and services.[493] In 2008, the U.S. imported 66 percent of the petroleum it consumed, and the transportation sector accounted for 70 percent of total U.S. petroleum consumption. This compares to approximately 37 percent of petroleum from imports and 55 percent of consumption from petroleum in the transportation sector in 1975.[494] It is clear that petroleum imports have a significant impact on the U.S. economy. Requiring lower-GHG vehicle technology in the U.S. is expected to lower U.S. petroleum imports.

b. Energy Security Implications

In order to understand the energy security implications of reducing U.S. petroleum imports, EPA worked with Oak Ridge National Laboratory (ORNL), which has developed approaches for evaluating the economic costs and energy security implications of oil use. The energy security estimates provided below are based upon a methodology developed in a peer-reviewed study entitled "*The Energy Security Benefits of Reduced Oil Use, 2006–2015,*" completed in March 2008. This study is included as part of the docket for this rulemaking.[495] [496]

When conducting this analysis, ORNL considered the economic cost of importing petroleum into the U.S. The economic cost of importing petroleum into the U.S. is defined to include two components in addition to the purchase price of petroleum itself. These are: (1) The higher costs for oil imports resulting from the effect of increasing U.S. import demand on the world oil price and on OPEC market power (*i.e.,* the "demand" or "monopsony" costs); and (2) the risk of reductions in U.S. economic output and disruption of the U.S. economy caused by sudden disruptions in the supply of imported petroleum to the U.S. (*i.e.,* macroeconomic disruption/adjustment costs). Maintaining a U.S. military presence to help secure stable oil supply from potentially vulnerable regions of the world was not included in this analysis because its attribution to particular missions or activities is hard to quantify.

One commenter on this rule felt that the magnitude of the economic disruption portion of the energy security benefit may be too high. This commenter cites a recent paper written by Stephen P.A. Brown and Hillard G. Huntington, entitled "*Estimating U.S. Oil Security Premiums*" (September 2009) as the basis for their comment. The Agency reviewed this paper and found that it conducted a somewhat different analysis than the one conducted by ORNL in support of this rule. The Brown and Huntington paper focuses on policies and the energy security implications of increasing U.S. demand for oil (or at least holding U.S. oil consumption constant), while the ORNL analysis examines the energy security implications of decreasing U.S. oil consumption and oil imports. These asymmetrical analyses would be expected to yield somewhat different energy security results.

However, even given the different scenarios considered, the Brown and Huntington estimates are roughly similar to the ORNL estimates. For example, for an increase in U.S. consumption that leads to an increase in U.S. imports of oil, Brown and Huntington estimate a 2015 disruption premium of $4.87 per barrel, with an uncertainty range from $1.03 to $14.10 per barrel. The corresponding 2015 estimate for ORNL as the result of a reduction in U.S. oil imports is $6.70 per barrel, with an uncertainty range of $3.11 to $10.67 per barrel. Given that the two studies analyze different scenarios, since the Brown and Huntington disruption premiums are well within the uncertainty range of the ORNL study, and given that the ORNL scenario matches the specific oil market impacts anticipated from the rule while the Brown and Huntington paper does not, the Agency has concluded that the ORNL disruption security premium estimates are more applicable for analyzing this final rule.

In the energy security literature, the macroeconomic disruption component of the energy security premium traditionally has included both (1) increased payments for petroleum imports associated with a rapid increase in world oil prices, and (2) the GDP losses and adjustment costs that result from projected future oil price shocks. One commenter suggested that the increased payments associated with rapid increases in petroleum prices (*i.e.,* price increases in a disrupted market) represent transfers from U.S. oil consumers to petroleum suppliers rather than real economic costs, and therefore, should not be counted as a benefit.

This approach would represent a significant departure from how the macroeconomic disruption costs associated with oil price shocks have been quantified in the broader energy security literature, and the Agencies believe it should be analyzed in more detail before being applied in a regulatory context. In addition, the Agencies also believe that there are compelling reasons to treat higher oil import costs during oil supply disruptions differently than simple wealth transfers that reflect the exercise of market power by petroleum sellers or consumers. According to the OMB definition of a transfer: "Benefit and cost estimates should reflect real resource use. Transfer payments are monetary payments from one group to another that do not affect total resources available to society. * * * The net reduction in the total surplus (consumer plus producer) is a real cost to society, but the transfer from buyers to sellers resulting from a higher price is not a real cost since the net reduction automatically accounts for the transfer from buyers to sellers."[497] In other words, pure transfers do not lead to changes in the allocation or consumption of economic resources, whereas changes in the resource allocation or use produce real economic costs or benefits.

While price increases during oil price disruptions can result in large transfers of wealth, they also result in a combination of real resource shortages, costly short-run shifts in energy supply, behavioral and demand adjustments by energy users, and other response costs. Unlike pure transfers, the root cause of

[493] Source: U.S. Bureau of Economic Analysis, U.S. International Transactions Accounts Data, as shown on June 24, 2009.

[494] Source: U.S. Department of Energy, Annual Energy Review 2008, Report No. DOE/EIA–0384(2008), Tables 5.1 and 5.13c, June 26, 2009.

[495] Leiby, Paul N. "*Estimating the Energy Security Benefits of Reduced U.S. Oil Imports*" Oak Ridge National Laboratory, ORNL/TM–2007/028, Final Report, 2008. (Docket EPA–HQ–OAR–2009–0472).

[496] The ORNL study "*The Energy Security Benefits of Reduced Oil Use, 2006–2015,*" completed in March 2008, is an update version of the approach used for estimating the energy security benefits of U.S. oil import reductions developed in an ORNL 1997 Report by Leiby, Paul N., Donald W. Jones, T. Randall Curlee, and Russell Lee, entitled "*Oil Imports: An Assessment of Benefits and Costs.*" (Docket EPA–HQ–OAR–2009–0472).

[497] OMB Circular A–4, September 17, 2003. See *http://www.whitehouse.gov/omb/assets/omb/circulars/a004/a-4.pdf.*

the disruption price increase is a real resource supply reduction due, for example, to disaster or war. Regions where supplies are disrupted (*i.e.,* the U.S.) suffer very high costs. Businesses' and households' emergency responses to supply disruptions and rapid price increases are likely to consume some real economic resources, in addition to causing financial losses to the U.S. economy that are matched by offsetting gains elsewhere in the global economy.

While households and businesses can reduce their petroleum consumption, invest in fuel switching technologies, or use futures markets to insulate themselves in advance against the potential costs of rapid increases in oil prices, when deciding how extensively to do so, they are unlikely to account for the effect of their petroleum consumption on the magnitude of costs that supply interruptions and accompanying price shocks impose on others. As a consequence, the U.S. economy as a whole will not make sufficient use of these mechanisms to insulate itself from the real costs of rapid increases in energy prices and outlays that usually accompany oil supply interruptions.[498] Therefore, the ORNL estimate of macroeconomic disruption and adjustment costs that the Agencies use to value energy security benefits includes the increased oil import costs stemming from oil price shocks that are unanticipated and not internalized by advance actions of U.S. consumers of petroleum products. The Agencies believe that, as the ORNL analysis argues, the uninternalized oil import costs that occur during oil supply interruptions represents a real cost associated with U.S. petroleum consumption and imports, and that reducing its value by lowering domestic petroleum consumption and imports thus represents a real economic benefit from lower fuel consumption.

For this rule, ORNL estimated the energy security premium by incorporating the oil price forecast of the Energy Information Administration's 2009 Annual Energy Outlook (AEO) to its model. The Agency considered, but rejected the option, of further updating this analysis using the oil price estimates provided by the AEO 2010. Given the broad uncertainty bands around oil price forecasts and the relatively modest change in oil price forecasts between the AEO 2009 and AEO 2010, the Agency felt that updating to AEO 2010 oil prices would not significantly change the results of this energy security analysis. Finally, the EPA used its OMEGA model in conjunction with ORNL's energy security premium estimates to develop the total energy security benefits for a number of different years; please refer to Table III.H.8–1 for this information for years 2015, 2020, 2030 and 2040,[499] as well as a breakdown of the components of the energy security premium for each of these years. The components of the energy security premium and their values are discussed in detail in the Joint TSD Chapter 4.

Because the price of oil is determined globally, supply and demand shocks anywhere in the world will have an adverse impact on the United States (and on all other oil consuming countries). The total economic costs of those shocks to the U.S. will depend on both U.S. petroleum consumption and imports of petroleum and refined products. The analysis relied upon to estimate energy security benefits from reducing U.S. petroleum consumption estimates the value of energy security using the estimated oil *import* premium, and is thus consistent with how much of the energy security literature reports energy security impacts. Since this rule is expected to have little impact on the U.S. supply of crude petroleum, a reduction in U.S. fuel consumption is expected to be reflected predominantly in reduced imports of petroleum and refined fuel. The estimated energy security premium associated with a reduction in U.S. petroleum *consumption* that leads to a reduction in imports would likely be somewhat larger, due to diminished sensitivity of the U.S. economy to oil supply shocks that would accompany the reduction in oil consumption.

In addition, while the estimates of energy security externalities used in this analysis depend on a combination of U.S. petroleum consumption and imports, they have been expressed as per barrel of petroleum imported into the U.S. The Agencies' analyses apply these estimates to the reduction in U.S. imports of crude petroleum and refined products that is projected to result from the rule in order to determine the benefits that are likely to result from fuel savings and the consequent reduction in imports. Thus, the estimates of energy security externalities have been used in this analysis in a way that is completely consistent with how they are defined and measured in the ORNL analysis.

TABLE III.H.8–1—ENERGY SECURITY PREMIUM IN 2015, 2020, 2030 AND 2040 (2007$/BARREL)

Year (range)	Monopsony	Macroeconomic disruption/adjustment costs	Total mid-point
2015	$11.79 ($4.26–$21.37)	$6.70 ($3.11–$10.67)	$18.49 ($9.80–$28.08)
2020	$12.31 ($4.46–$22.53)	$7.62 ($3.77–$12.46)	$19.94 ($10.58–$30.47)
2030	$10.57 ($3.84–18.94)	$8.12 ($3.90–$13.04)	$18.69 ($10.52–$27.89)
2040	$10.57 ($3.84–$18.94)	$8.12 ($3.90–$13.04)	$18.69 ($10.52–$27.89)

The literature on the energy security for the last two decades has routinely combined the monopsony and the macroeconomic disruption components when calculating the total value of the energy security premium. However, in the context of using a global value for the Social Cost of Carbon (SCC) the question arises: How should the energy security premium be used when some benefits from the rule, such as the benefits of reducing greenhouse gas emissions, are calculated using a global value? Monopsony benefits represent avoided payments by the U.S. to oil producers in foreign countries that result from a decrease in the world oil price as the U.S. decreases its consumption of imported oil. Although there is clearly a benefit to the U.S. when considered from the domestic perspective, the decrease in price due to decreased demand in the U.S. also represents a loss of income to oil-

[498] For a more complete discussion of the reasons why the oil import cost component of the macroeconomic disruption and adjustment costs includes some real costs and does not represent a pure transfer, see Paul N. Leiby, Estimating the Energy Security Benefits of Reduced U.S. Oil Imports: Final Report, ORNL–TM–2007–028, Oak Ridge National Laboratory, March 14, 2008, pp. 21–25.

[499] AEO 2009 forecasts energy market trends and values only to 2030. The energy security premium estimates post-2030 were assumed to be the 2030 estimate.

producing countries. Given the redistributive nature of this effect, do the negative effects on other countries "net out" the positive impacts to the U.S.? If this is the case, then the monopsony portion of the energy security premium should be excluded from the net benefits calculation for the rule. OMB's Circular A–4 gives guidance in this regard. Domestic pecuniary benefits (or transfers between buyers and sellers) generally should not be included because they do not represent real resource costs, though A–4 notes that transfers to the U.S. from other countries may be counted as benefits as long as the analysis is conducted from a U.S. perspective.

Energy security is broadly defined as protecting the U.S. economy against circumstances that threaten significant short- and long-term increases in energy costs. Energy security is inherently a domestic benefit. Accordingly, it is possible to argue that the use of the domestic monopsony benefit may not necessarily be in conflict with the use of the global SCC, because the global SCC represents the benefits against which the costs of our (*i.e.,* the U.S.'s) domestic mitigation efforts should be judged. In the final analysis, the Agency has determined that using only the macroeconomic disruption component of the energy security benefit is the appropriate metric for this rule.

At proposal, the Agency took the position that since a global perspective was being taken with the use of the global SCC, that the monopsony benefits "net out" and were a transfer. Two commenters felt that the monopsony effect should be excluded from net benefits calculations for the rule since it is a "pecuniary" externality or does not represent an efficiency gain. One of the commenters suggested that EPA instead conduct a distributional analysis of the monopsony impacts of the final rule. The Agency disagrees that all pecuniary externalities should necessarily be excluded from net benefits calculations as a general rule. In this case considered here, the oil market is non-competitive, and if the social decision-making unit of interest is the U.S., there is an argument for accounting for the monopsony premium to assess the excess transfer of wealth caused by the exercise of cartel power outside of the U.S.

However, for the final rule, the Agency continues to take a global perspective with respect to climate change by using the global SCC. Therefore, the Agency did not count monopsony benefits since they "net out" with losses to other countries outside the U.S. Since a global perspective has been taken, a distributional analysis was not undertaken for this final rule, since the losses to the losers (oil producers that export oil to the U.S.) would equal the gains to the winners (U.S. consumers of imported oil). As a result, the Agency has included only the macroeconomic disruption portion of the energy security benefits to monetize the total energy security benefits of this rule. Hence, the total annual energy security benefits are derived from the estimated reductions in U.S. imports of finished petroleum products and crude oil using only the macroeconomic disruption/adjustment portion of the energy security premium. These values are shown in Table III.H.8–2.[500] The reduced oil estimates were derived from the OMEGA model, as explained in Section III.F of this preamble. EPA used the same assumption that NHTSA used in its Corporate Average Fuel Economy and CAFE Reform for MY 2008–2011 Light Trucks rule, which assumed that each gallon of fuel saved reduces total U.S. imports of crude oil or refined products by 0.95 gallons.[501]

TABLE III.H.8–2—TOTAL ANNUAL ENERGY SECURITY BENEFITS USING ONLY THE MACROECONOMIC DISRUPTION/ADJUSTMENT COMPONENT OF THE ENERGY SECURITY PREMIUM IN 2015, 2020, 2030 AND 2040

[Billions of 2007$]

Year	Benefits
2015	$0.57
2020	$2.17
2030	$4.55
2040	$6.00

[500] Estimated reductions in U.S. imports of finished petroleum products and crude oil are 95% of 89 million barrels (MMB) in 2015, 300 MMB in 2020, 590 MMB in 2030, and 778 MMB in 2040.

[501] Preliminary Regulatory Impacts Analysis, April 2008. Based on a detailed analysis of differences in fuel consumption, petroleum imports, and imports of refined petroleum products among the Reference Case, High Economic Growth, and Low Economic Growth Scenarios presented in the Energy Information Administration's Annual Energy Outlook 2007, NHTSA estimated that approximately 50 percent of the reduction in fuel consumption is likely to be reflected in reduced U.S. imports of refined fuel, while the remaining 50 percent would be expected to be reflected in reduced domestic fuel refining. Of this latter figure, 90 percent is anticipated to reduce U.S. imports of crude petroleum for use as a refinery feedstock, while the remaining 10 percent is expected to reduce U.S. domestic production of crude petroleum. Thus on balance, each gallon of fuel saved is anticipated to reduce total U.S. imports of crude petroleum or refined fuel by 0.95 gallons.

9. Other Impacts

There are other impacts associated with the CO_2 emissions standards and associated reduced fuel consumption that vary with miles driven. Lower fuel consumption would, presumably, result in fewer trips to the filling station to refuel and, thus, time saved. The rebound effect, discussed in detail in Section III.H.4.c, produces additional benefits to vehicle owners in the form of consumer surplus from the increase in vehicle-miles driven, but may also increase the societal costs associated with traffic congestion, motor vehicle crashes, and noise. These effects are likely to be relatively small in comparison to the value of fuel saved as a result of the standards, but they are nevertheless important to include. Table III.H.9–1 summarizes the other economic impacts. Please refer to Preamble Section II.F and the Joint TSD that accompanies this rule for more information about these impacts and how EPA and NHTSA use them in their analyses.

Note that for the estimated value of less frequent refueling events, EPA's estimate is subject to a number of uncertainties which we discuss in detail in Chapter 4.1.11 of the Joint TSD, and the actual value could be higher or lower than the value presented here. Specifically, the analysis makes three assumptions: (a) That manufacturers will not adjust fuel tank capacities downward (from the current average of 19.3 gallons) when they improve the fuel economy of their vehicle models. (b) that the average fuel purchase (55 percent of fuel tank capacity) is the typical fuel purchase. (c) that 100 percent of all refueling is demand-based; *i.e.,* that every gallon of fuel which is saved would reduce the need to return to the refueling station. A new research project is being planned by DOT which will include a detailed study of refueling events, and which is expected to improve upon these assumptions. These assumptions and the new DOT research project are discussed in detail in Joint TSD Chapter 4.2.10.

TABLE III.H.9–1—OTHER IMPACTS ASSOCIATED WITH THE LIGHT-DUTY VEHICLE GHG PROGRAM

[Millions of 2007 dollars]

	2020	2030	2040	2050	NPV, 3%	NPV, 7%
Value of Less Frequent Refueling	$2,400	$4,800	$6,300	$8,000	$87,900	$40,100
Value of Increased Driving [a]	4,200	8,800	13,000	18,400	171,500	75,500
Accidents, Noise, Congestion	−2,300	−4,600	−6,100	−7,800	−84,800	−38,600

[a] Calculated using post-tax fuel prices.

10. Summary of Costs and Benefits

In this section, EPA presents a summary of costs, benefits, and net benefits of the rule. Table III.H.10–1 shows the estimated annual societal costs of the vehicle program for the indicated calendar years. The table also shows the net present values of those costs for the calendar years 2012–2050 using both a 3 percent and a 7 percent discount rate. In this table, fuel savings are calculated using pre-tax fuel prices.

Consumers are expected to receive the fuel savings presented here. The cost estimates for the fuel-saving technology are based on designs that will hold all vehicle attributes constant except fuel economy and technology cost. This analysis also assumes that consumers will not change the vehicles that they purchase. Automakers may redesign vehicles as part of their compliance strategies. The redesigns should be expected to make the vehicles more attractive to consumers, because the ability to hold all other attributes constant means that the only reason to change them is to make them more marketable to consumers. In addition, consumers may choose to purchase different vehicles than they would in the absence of this rule. These changes may affect the net benefits that consumers receive from their vehicles. If consumers can buy the same vehicle as before, except with increased price and fuel economy, then the increase in vehicle price is the maximum loss in welfare to the consumer, because compensating the increase in price would leave her able to buy her previous vehicle with no change. If she decides to purchase a different vehicle, or not to purchase a vehicle, she would do so only if she were better off than buying her original choice. Because of the unsettled state of the modeling of consumer choices (discussed in Section III.H.1 and in RIA Section 8.1.2), this analysis does not measure these effects. If the technology costs are not sufficient to maintain other vehicle attributes, then it is possible that automakers would be required to make less marketable vehicles in order to comply with the rule; as a result, there may be an additional loss in consumer welfare due to the rule. While EPA received comments expressing concern over the possibility of these losses, there were no specific losses identified.

TABLE III.H.10–1—ESTIMATED SOCIETAL COSTS OF THE LIGHT-DUTY VEHICLE GHG PROGRAM

[Millions of 2007 dollars]

Social costs	2020	2030	2040	2050	NPV, 3%	NPV, 7%
Vehicle Compliance Costs	$15,600	$15,800	$17,400	$19,000	$345,900	$191,900
Fuel Savings [a]	−35,700	−79,800	−119,300	−171,200	−1,545,600	−672,600
Quantified Annual Costs	−20,100	−64,000	−101,900	−152,200	−1,199,700	−480,700

[a] Calculated using pre-tax fuel prices.

Table III.H.10–2 presents estimated annual societal benefits for the indicated calendar years. The table also shows the net present values of those benefits for the calendar years 2012–2050 using both a 3 percent and a 7 percent discount rate. The table shows the benefits of reduced CO_2 emissions—and consequently the annual quantified benefits (*i.e.,* total benefits)—for each of four SCC values considered by EPA. As discussed in the RIA Section 7.5, the IPCC Fourth Assessment Report (2007) concluded that that the benefit estimates from CO_2 reductions are "very likely" underestimates. One of the primary reasons is that models used to calculate SCC values do not include information about impacts that have not been quantified.

In addition, these monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4, N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in non-CO_2 GHGs, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and SCC and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

TABLE III.H.10–2—ESTIMATED SOCIETAL BENEFITS ASSOCIATED WITH THE LIGHT-DUTY VEHICLE GHG PROGRAM

[Millions of 2007 dollars]

Benefits category	2020	2030	2040	2050	NPV, 3% [a]	NPV, 7% [a]
Reduced CO_2 Emissions at each assumed SCC value [b c]						
Avg SCC at 5%	$900	$2,700	$4,600	$7,200	$34,500	$34,500
Avg SCC at 3%	3,700	8,900	14,000	21,000	176,700	176,700
Avg SCC at 2.5%	5,800	14,000	21,000	30,000	299,600	299,600
95th percentile SCC at 3%	11,000	27,000	43,000	62,000	538,500	538,500
Criteria Pollutant Benefits [d e f g]	B	1,200–1,300	1,200–1,300	1,200–1,300	21,000	14,000
Energy Security Impacts (price shock)	2,200	4,500	6,000	7,600	81,900	36,900

TABLE III.H.10–2—ESTIMATED SOCIETAL BENEFITS ASSOCIATED WITH THE LIGHT-DUTY VEHICLE GHG PROGRAM—Continued

[Millions of 2007 dollars]

Benefits category	2020	2030	2040	2050	NPV, 3% [a]	NPV, 7% [a]
Reduced Refueling	2,400	4,800	6,300	8,000	87,900	40,100
Value of Increased Driving [h]	4,200	8,800	13,000	18,400	171,500	75,500
Accidents, Noise, Congestion	−2,300	−4,600	−6,100	−7,800	−84,800	−38,600
Quantified Annual Benefits at each assumed SCC value [b c]						
Avg SCC at 5%	7,400	17,500	25,100	34,700	312,000	162,400
Avg SCC at 3%	10,200	23,700	34,500	48,500	454,200	304,600
Avg SCC at 2.5%	12,300	28,800	41,500	57,500	577,100	427,500
95th percentile SCC at 3%	17,500	41,800	63,500	89,500	816,000	666,400

[a] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to the SCC TSD for more detail.

[b] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[c] Section III.H.6 notes that SCC increases over time. Corresponding to the years in this table, the SCC estimates range as follows: for Average SCC at 5%: $5–$16; for Average SCC at 3%: $21–$45; for Average SCC at 2.5%: $36–$65; and for 95th percentile SCC at 3%: $65–$136. Section III.H.6 also presents these SCC estimates.

[d] Note that "B" indicates unquantified criteria pollutant benefits in the year 2020. For the final rule, we only modeled the rule's $PM_{2.5}$- and ozone-related impacts in the calendar year 2030. For the purposes of estimating a stream of future-year criteria pollutant benefits, we assume that the benefits out to 2050 are equal to, and no less than, those modeled in 2030 as reflected by the stream of estimated future emission reductions. The NPV of criteria pollutant-related benefits should therefore be considered a conservative estimate of the potential benefits associated with the final rule.

[e] The benefits presented in this table include an estimate of PM-related premature mortality derived from Laden *et al.,* 2006, and the ozone-related premature mortality estimate derived from Bell *et al.,* 2004. If the benefit estimates were based on the ACS study of PM-related premature mortality (Pope *et al.,* 2002) and the Levy *et al.,* 2005 study of ozone-related premature mortality, the values would be as much as 70% smaller.

[f] The calendar year benefits presented in this table assume either a 3% discount rate in the valuation of PM-related premature mortality ($1,300 million) or a 7% discount rate ($1,200 million) to account for a twenty-year segmented cessation lag. Note that the benefits estimated using a 3% discount rate were used to calculate the NPV using a 3% discount rate and the benefits estimated using a 7% discount rate were used to calculate the NPV using a 7% discount rate. For benefits totals presented at each calendar year, we used the mid-point of the criteria pollutant benefits range ($1,250).

[g] Note that the co-pollutant impacts presented here do not include the full complement of endpoints that, if quantified and monetized, would change the total monetized estimate of impacts. The full complement of human health and welfare effects associated with PM and ozone remain unquantified because of current limitations in methods or available data. We have not quantified a number of known or suspected health effects linked with ozone and PM for which appropriate health impact functions are not available or which do not provide easily interpretable outcomes (*e.g.,* changes in heart rate variability). Additionally, we are unable to quantify a number of known welfare effects, including reduced acid and particulate deposition damage to cultural monuments and other materials, and environmental benefits due to reductions of impacts of eutrophication in coastal areas.

[h] Calculated using pre-tax fuel prices.

Table III.H.10–3 presents estimated annual net benefits for the indicated calendar years. The table also shows the net present values of those net benefits for the calendar years 2012–2050 using both a 3 percent and a 7 percent discount rate. The table includes the benefits of reduced CO_2 emissions (and consequently the annual net benefits) for each of four SCC values considered by EPA. As noted above, the benefit estimates from CO_2 reductions are "very likely," according to the IPCC Fourth Assessment Report, underestimates because, in part, models used to calculate SCC values do not include information about impacts that have not been quantified.

TABLE III.H.10–3—QUANTIFIED NET BENEFITS ASSOCIATED WITH THE LIGHT-DUTY VEHICLE GHG PROGRAM [a]

[Millions of 2007 dollars]

	2020	2030	2040	2050	NPV, 3% [b]	NPV, 7% [b]
Quantified Annual Costs	−$20,100	−$64,000	−$101,900	−$152,200	−$1,199,700	−$480,700
Quantified Annual Benefits at each assumed SCC value [c d]						
Avg SCC at 5%	7,400	17,500	25,100	34,700	312,000	162,400
Avg SCC at 3%	10,200	23,700	34,500	48,500	454,200	304,600
Avg SCC at 2.5%	12,300	28,800	41,500	57,500	577,100	427,500
95th percentile SCC at 3%	17,500	41,800	63,500	89,500	816,000	666,400
Quantified Net Benefits at each assumed SCC value [c d]						
Avg SCC at 5%	27,500	81,500	127,000	186,900	1,511,700	643,100
Avg SCC at 3%	30,300	87,700	136,400	200,700	1,653,900	785,300
Avg SCC at 2.5%	32,400	92,800	143,400	209,700	1,776,800	908,200

TABLE III.H.10–3—QUANTIFIED NET BENEFITS ASSOCIATED WITH THE LIGHT-DUTY VEHICLE GHG PROGRAM [a]—Continued

[Millions of 2007 dollars]

	2020	2030	2040	2050	NPV, 3% [b]	NPV, 7% [b]
95th percentile SCC at 3%	37,600	105,800	165,400	241,700	2,015,700	1,147,100

[a] Fuel impacts were calculated using pre-tax fuel prices.

[b] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to the SCC TSD for more detail.

[c] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[d] Section III.H.6 notes that SCC increases over time. Corresponding to the years in this table, the SCC estimates range as follows: For Average SCC at 5%: $5–$16; for Average SCC at 3%: $21–$45; for Average SCC at 2.5%: $36–$65; and for 95th percentile SCC at 3%: $65–$136. Section III.H.6 also presents these SCC estimates.

EPA also conducted a separate analysis of the total benefits over the model year lifetimes of the 2012 through 2016 model year vehicles. In contrast to the calendar year analysis presented in Table III.H.10–1 through Table III.H.10–3, the model year lifetime analysis shows the lifetime impacts of the program on each of these MY fleets over the course of its lifetime. Full details of the inputs to this analysis can be found in RIA Chapter 5. The societal benefits of the full life of each of the five model years from 2012 through 2016 are shown in Tables III.H.10–4 and III.H.10–5 at both a 3 percent and a 7 percent discount rate, respectively. The net benefits are shown in Tables III.H.10–6 and III.H.10–7 for both a 3 percent and a 7 percent discount rate. Note that the quantified annual benefits shown in Table III.H.10–4 and Table III.H.10–5 include fuel savings as a positive benefit. As such, the quantified annual costs as shown in Table III.H.10–6 and Table III.H.10–7 do not include fuel savings since those are included as benefits. Also note that each of the Tables III.H.10–4 through Table III.H.10–7 include the benefits of reduced CO_2 emissions—and consequently the total benefits—for each of four SCC values considered by EPA. As noted above, the benefit estimates from CO_2 reductions are "very likely," according to the IPCC Fourth Assessment Report, underestimates because, in part, models used to calculate SCC values do not include information about impacts that have not been quantified.

TABLE III.H.10–4—ESTIMATED SOCIETAL BENEFITS ASSOCIATED WITH THE LIFETIMES OF 2012–2016 MODEL YEAR VEHICLES

[Millions of 2007 dollars; 3% discount rate]

Monetized values (millions)	2012MY	2013MY	2014MY	2015MY	2016MY	Sum
Cost of Noise, Accident, Congestion ($)	−$1,100	−$1,600	−$2,100	−$2,900	−$3,900	−$11,600
Pretax Fuel Savings ($)	16,100	23,900	32,200	46,000	63,500	181,800
Energy Security (price shock) ($) [a]	900	1,400	1,800	2,500	3,500	10,100
Value of Reduced Refueling time ($)	1,100	1,600	2,100	3,000	4,000	11,900
Value of Additional Driving ($)	2,400	3,400	4,400	6,000	7,900	24,000
Value of $PM_{2.5}$-related Health Impacts ($) [b c d]	700	900	1,300	1,800	2,400	7,000
Reduced CO_2 Emissions at each assumed SCC value [e f g]						
Avg SCC at 5%	400	500	700	1,000	1,300	3,800
Avg SCC at 3%	1,700	2,400	3,100	4,400	5,900	17,000
Avg SCC at 2.5%	2,700	3,900	5,200	7,200	9,700	29,000
95th percentile SCC at 3%	5,100	7,300	9,600	13,000	18,000	53,000
Total Benefits at each assumed SCC value [e f g]						
Avg SCC at 5%	20,500	30,100	40,400	57,400	78,700	227,000
Avg SCC at 3%	21,800	32,000	42,800	60,800	83,300	240,200
Avg SCC at 2.5%	22,800	33,500	44,900	63,600	87,100	252,200
95th percentile SCC at 3%	25,200	36,900	49,300	69,400	95,400	276,200

[a] Note that, due to a calculation error in the proposal, the energy security impacts for the model year analysis were roughly half what they should have been.

[b] Note that the co-pollutant impacts associated with the standards presented here do not include the full complement of endpoints that, if quantified and monetized, would change the total monetized estimate of rule-related impacts. Instead, the co-pollutant benefits are based on benefit-per-ton values that reflect only human health impacts associated with reductions in $PM_{2.5}$ exposure. Ideally, human health and environmental benefits would be based on changes in ambient $PM_{2.5}$ and ozone as determined by full-scale air quality modeling. However, EPA was unable to conduct a full-scale air quality modeling analysis associated with the vehicle model year lifetimes for the final rule.

[c] The $PM_{2.5}$-related benefits (derived from benefit-per-ton values) presented in this table are based on an estimate of premature mortality derived from the ACS study (Pope *et al.,* 2002). If the benefit-per-ton estimates were based on the Six Cities study (Laden *et al.,* 2006), the values would be approximately 145% (nearly two-and-a-half times) larger.

[d] The $PM_{2.5}$-related benefits (derived from benefit-per-ton values) presented in this table assume a 3% discount rate in the valuation of premature mortality to account for a twenty-year segmented cessation lag. If a 7% discount rate had been used, the values would be approximately 9% lower.

[e] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to the SCC TSD for more detail.

[f] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[g] Section III.H.6 notes that SCC increases over time. Corresponding to the years in this table, the SCC estimates range as follows: For Average SCC at 5%: $5–$16; for Average SCC at 3%: $21–$45; for Average SCC at 2.5%: $36–$65; and for 95th percentile SCC at 3%: $65–$136. Section III.H.6 also presents these SCC estimates.

TABLE III.H.10–5—ESTIMATED SOCIETAL BENEFITS ASSOCIATED WITH THE LIFETIMES OF 2012–2016 MODEL YEAR VEHICLES

[Millions of 2007 dollars; 7% discount rate]

Monetized values (millions)	2012MY	2013MY	2014MY	2015MY	2016MY	Sum
Cost of Noise, Accident, Congestion ($)	−$900	−$1,200	−$1,600	−$2,300	−$3,100	−$9,200
Pretax Fuel Savings ($)	12,500	18,600	25,100	36,000	49,600	141,900
Energy Security (price shock) ($) [a]	800	1,100	1,400	2,000	2,700	8,000
Value of Reduced Refueling time ($)	900	1,300	1,700	2,400	3,200	9,400
Value of Additional Driving ($)	1,900	2,700	3,500	4,700	6,200	19,000
Value of $PM_{2.5}$-related Health Impacts ($) [b c d]	500	800	1,000	1,400	1,900	5,600
Reduced CO_2 Emissions at each assumed SCC value [e f g]						
Avg SCC at 5%	400	500	700	1,000	1,300	3,800
Avg SCC at 3%	1,700	2,400	3,100	4,400	5,900	17,000
Avg SCC at 2.5%	2,700	3,900	5,200	7,200	9,700	29,000
95th percentile SCC at 3%	5,100	7,300	9,600	13,000	18,000	53,000
Total Benefits at each assumed SCC value [e f g]						
Avg SCC at 5%	16,100	23,800	31,800	45,200	61,800	178,500
Avg SCC at 3%	17,400	25,700	34,200	48,600	66,400	191,700
Avg SCC at 2.5%	18,400	27,200	36,300	51,400	70,200	203,700
95th percentile SCC at 3%	20,800	30,600	40,700	57,200	78,500	227,700

[a] Note that, due to a calculation error in the proposal, the energy security impacts for the model year analysis were roughly half what they should have been.

[b] Note that the co-pollutant impacts associated with the standards presented here do not include the full complement of endpoints that, if quantified and monetized, would change the total monetized estimate of rule-related impacts. Instead, the co-pollutant benefits are based on benefit-per-ton values that reflect only human health impacts associated with reductions in $PM_{2.5}$ exposure. Ideally, human health and environmental benefits would be based on changes in ambient $PM_{2.5}$ and ozone as determined by full-scale air quality modeling. However, EPA was unable to conduct a full-scale air quality modeling analysis associated with the vehicle model year lifetimes for the final rule.

[c] The $PM_{2.5}$-related benefits (derived from benefit-per-ton values) presented in this table are based on an estimate of premature mortality derived from the ACS study (Pope *et al.,* 2002). If the benefit-per-ton estimates were based on the Six Cities study (Laden *et al.,* 2006), the values would be approximately 145% (nearly two-and-a-half times) larger.

[d] The $PM_{2.5}$-related benefits (derived from benefit-per-ton values) presented in this table assume a 3% discount rate in the valuation of premature mortality to account for a twenty-year segmented cessation lag. If a 7% discount rate had been used, the values would be approximately 9% lower.

[e] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to the SCC TSD for more detail.

[f] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[g] Section III.H.6 notes that SCC increases over time. Corresponding to the years in this table, the SCC estimates range as follows: For Average SCC at 5%: $5–$16; for Average SCC at 3%: $21–$45; for Average SCC at 2.5%: $36–$65; and for 95th percentile SCC at 3%: $65–$136. Section III.H.6 also presents these SCC estimates.

TABLE III.H.10–6—QUANTIFIED NET BENEFITS ASSOCIATED WITH THE LIFETIMES OF 2012–2016 MODEL YEAR VEHICLES

[Millions of 2007 dollars; 3% discount rate]

Monetized Values (millions)	2012MY	2013MY	2014MY	2015MY	2016MY	Sum
Quantified Annual Costs (excluding fuel savings) [a]	$4,900	$8,000	$10,300	$12,700	$15,600	$51,500
Quantified Annual Benefits at each assumed SCC value [b c d]						
Avg SCC at 5%	20,500	30,100	40,400	57,400	78,700	227,000
Avg SCC at 3%	21,800	32,000	42,800	60,800	83,300	240,200

TABLE III.H.10–6—QUANTIFIED NET BENEFITS ASSOCIATED WITH THE LIFETIMES OF 2012–2016 MODEL YEAR VEHICLES—Continued

[Millions of 2007 dollars; 3% discount rate]

Monetized Values (millions)	2012MY	2013MY	2014MY	2015MY	2016MY	Sum
Avg SCC at 2.5%	22,800	33,500	44,900	63,600	87,100	252,200
95th percentile SCC at 3%	25,200	36,900	49,300	69,400	95,400	276,200
Quantified Net Benefits at each assumed SCC value [b c d]						
Avg SCC at 5%	15,600	22,100	30,100	44,700	63,100	175,500
Avg SCC at 3%	16,900	24,000	32,500	48,100	67,700	188,700
Avg SCC at 2.5%	17,900	25,500	34,600	50,900	71,500	200,700
95th percentile SCC at 3%	20,300	28,900	39,000	56,700	79,800	224,700

[a] Quantified annual costs as shown here are the increased costs for new vehicles in each given model year. Since those costs are assumed to occur in the given model year (*i.e.,* not over a several year time span), the discount rate does not affect the costs.

[b] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to the SCC TSD for more detail.

[c] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[d] Section III.H.6 notes that SCC increases over time. Corresponding to the years in this table, the SCC estimates range as follows: For Average SCC at 5%: $5–$16; for Average SCC at 3%: $21–$45; for Average SCC at 2.5%: $36–$65; and for 95th percentile SCC at 3%: $65–$136. Section III.H.6 also presents these SCC estimates.

TABLE III.H.10–7—QUANTIFIED NET BENEFITS ASSOCIATED WITH THE LIFETIMES OF 2012–2016 MODEL YEAR VEHICLES

[Millions of 2007 dollars; 7% discount rate]

Monetized values (millions)	2012MY	2013MY	2014MY	2015MY	2016MY	Sum
Quantified Annual Costs (excluding fuel savings) [a]	$4,900	$8,000	$10,300	$12,700	$15,600	$51,500
Quantified Annual Benefits at each assumed SCC value [b c d]						
Avg SCC at 5%	16,100	23,800	31,800	45,200	61,800	178,500
Avg SCC at 3%	17,400	25,700	34,200	48,600	66,400	191,700
Avg SCC at 2.5%	18,400	27,200	36,300	51,400	70,200	203,700
95th percentile SCC at 3%	20,800	30,600	40,700	57,200	78,500	227,700
Quantified Net Benefits at each assumed SCC value [b c d]						
Avg SCC at 5%	11,200	15,800	21,500	32,500	46,200	127,000
Avg SCC at 3%	12,500	17,700	23,900	35,900	50,800	140,200
Avg SCC at 2.5%	13,500	19,200	26,000	38,700	54,600	152,200
95th percentile SCC at 3%	15,900	22,600	30,400	44,500	62,900	176,200

[a] Quantified annual costs as shown here are the increased costs for new vehicles in each given model year. Since those costs are assumed to occur in the given model year (*i.e.,* not over a several year time span), the discount rate does not affect the costs.

[b] Note that net present value of reduced GHG emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5, 3, 2.5 percent) is used to calculate net present value of SCC for internal consistency. Refer to the SCC TSD for more detail.

[c] Monetized GHG benefits exclude the value of reductions in non-CO_2 GHG emissions (HFC, CH_4 and N_2O) expected under this final rule. Although EPA has not monetized the benefits of reductions in these non-CO_2 emissions, the value of these reductions should not be interpreted as zero. Rather, the reductions in non-CO_2 GHGs will contribute to this rule's climate benefits, as explained in Section III.F.2. The SCC TSD notes the difference between the social cost of non-CO_2 emissions and CO_2 emissions, and specifies a goal to develop methods to value non-CO_2 emissions in future analyses.

[d] Section III.H.6 notes that SCC increases over time. Corresponding to the years in this table, the SCC estimates range as follows: For Average SCC at 5%: $5–$16; for Average SCC at 3%: $21–$45; for Average SCC at 2.5%: $36–$65; and for 95th percentile SCC at 3%: $65–$136. Section III.H.6 also presents these SCC estimates.

I. Statutory and Executive Order Reviews

1. Executive Order 12866: Regulatory Planning and Review

Under section 3(f)(1) of Executive Order (EO) 12866 (58 FR 51735, October 4, 1993), this action is an "economically significant regulatory action" because it is likely to have an annual effect on the economy of $100 million or more. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under EO 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action.

In addition, EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis is contained in the Final Regulatory Impact Analysis, which is available in the docket for this rulemaking and at the docket internet address listed under **ADDRESSES** above.

2. Paperwork Reduction Act

The information collection requirements in this final rule have been

submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.,* and has been assigned OMB control number 0783.57. The information collection requirements are not enforceable until OMB approves them.

The Agency is finalizing requirements for manufacturers to submit information to ensure compliance with the provisions in this rule. This includes a variety of requirements for vehicle manufacturers. Section 208(a) of the Clean Air Act requires that vehicle manufacturers provide information the Administrator may reasonably require to determine compliance with the regulations; submission of the information is therefore mandatory. We will consider confidential all information meeting the requirements of section 208(c) of the Clean Air Act.

As shown in Table III.I.2–1, the total annual burden associated with this rule is about 39,900 hours and $5 million, based on a projection of 33 respondents. The estimated burden for vehicle manufacturers is a total estimate for new reporting requirements. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

TABLE III.I.2–1—ESTIMATED BURDEN FOR REPORTING AND RECORDKEEPING REQUIREMENTS

Number of respondents	Annual burden hours	Annual costs
33	39,940	$5,001,000

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9. In addition, EPA is amending the table in 40 CFR part 9 of currently approved OMB control numbers for various regulations to list the regulatory citations for the information requirements contained in this final rule.

3. Regulatory Flexibility Act

a. Overview

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities directly subject to the rule. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201 (see table below); (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

Table III.I.3–1 provides an overview of the primary SBA small business categories included in the light-duty vehicle sector:

TABLE III.I.3–1—PRIMARY SBA SMALL BUSINESS CATEGORIES IN THE LIGHT-DUTY VEHICLE SECTOR

Industry [a]	Defined as small entity by SBA if less than or equal to:	NAICS codes [b]
Light-duty vehicles:		
—Vehicle manufacturers *(including small volume manufacturers).*	1,000 employees	336111
—Independent commercial importers	$7 million annual sales	811111, 811112, 811198
	$23 million annual sales	441120
	100 employees	423110, 424990
—Alternative fuel vehicle converters	50 employees	336312, 336322, 336399
	750 employees	335312
	1,000 employees	454312, 485310, 811198
	$7 million annual sales.	

Notes:

[a] Light-duty vehicle entities that qualify as small businesses would not be subject to this rule. We are exempting small vehicle entities, and we intend to address these entities in a future rule.

[b] North American Industrial Classification System.

b. Summary of Potentially Affected Small Entities

EPA has not conducted a Regulatory Flexibility Analysis or a SBREFA SBAR Panel for the rule because we are certifying that the rule would not have a significant economic impact on a substantial number of small entities directly subject to the rule. As proposed, EPA is exempting manufacturers meeting SBA's business size criteria for small business as provided in 13 CFR 121.201, due to the short lead time to develop this rule, the extremely small emissions contribution of these entities, and the potential need to develop a program that would be structured

differently for them (which would require more time). EPA would instead consider appropriate GHG standards for these entities as part of a future regulatory action. This includes U.S. and foreign small entities in three distinct categories of businesses for light-duty vehicles: Small volume manufacturers (SVMs), independent commercial importers (ICIs), and alternative fuel vehicle converters. EPA has identified a total of about 47 vehicle businesses; about 13 entities (or 28 percent) fit the Small Business Administration (SBA) criteria of a small business. There are about 2 SVMs, 8 ICIs, and 3 alternative fuel vehicle converters in the light-duty vehicle market which are small businesses (no major vehicle manufacturers meet the small-entity criteria as defined by SBA). EPA estimates that these small entities comprise about 0.03 percent of the total light-duty vehicle sales in the U.S., and therefore the exemption will have a negligible impact on the GHG emissions reductions from the standards.

To ensure that EPA is aware of which companies would be exempt, EPA proposed to require that such entities submit a declaration to EPA containing a detailed written description of how that manufacturer qualifies as a small entity under the provisions of 13 CFR 121.201. EPA has reconsidered the need for this additional submission under the regulations and is deleting it as not necessary. We already have information on the limited number of small entities that we expect would receive the benefits of the exemption, and do not need the proposed regulatory requirement to be able to effectively implement this exemption for those parties who in fact meet its terms. Small entities are currently covered by a number of EPA motor vehicle emission regulations, and they routinely submit information and data on an annual basis as part of their compliance responsibilities. Based on this, EPA is certifying that the rule would not have a significant economic impact on a substantial number of small entities.

c. Conclusions

I therefore certify that this rule will not have a significant economic impact on a substantial number of small entities. However, EPA recognizes that some small entities continue to be concerned about the potential impacts of the statutory imposition of PSD requirements that may occur given the various EPA rulemakings currently under consideration concerning greenhouse gas emissions. As explained in the preamble for the proposed PSD tailoring rule (74 FR 55292, Oct. 27, 2009), EPA used the discretion afforded to it under section 609(c) of the RFA to consult with OMB and SBA, with input from outreach to small entities, regarding the potential impacts of PSD regulatory requirements that might occur as EPA considers regulations of GHGs. Concerns about the potential impacts of statutorily imposed PSD requirements on small entities were the subject of deliberations in that consultation and outreach. EPA has compiled a summary of that consultation and outreach, which is available in the docket for the Tailoring Rule (EPA–HQ–OAR–2009–0517).

4. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531–1538, requires Federal agencies, unless otherwise prohibited by law, to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year.

This rule is not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments. The rule imposes no enforceable duty on any State, local or tribal governments. EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. EPA has determined that this rule contains a Federal mandate that may result in expenditures of $100 million or more for the private sector in any one year. EPA believes that the action represents the least costly, most cost-effective approach to achieve the statutory requirements of the rule. The costs and benefits associated with the rule are discussed above and in the Final Regulatory Impact Analysis, as required by the UMRA.

5. Executive Order 13132 (Federalism)

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This rulemaking applies to manufacturers of motor vehicles and not to State or local governments. Thus, Executive Order 13132 does not apply to this action. Although section 6 of Executive Order 13132 does not apply to this action, EPA did consult with representatives of State governments in developing this action.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicited comment on the proposed action from State and local officials. Many State and local governments submitted public comments on the rule, the majority of which were supportive of the EPA's greenhouse gas program. However, these entities did not provide comments indicating there would be a substantial direct effect on State or local governments resulting from this rule.

6. Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments)

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This rule will be implemented at the Federal level and impose compliance costs only on vehicle manufacturers. Tribal governments will be affected only to the extent they purchase and use regulated vehicles. Thus, Executive Order 13175 does not apply to this action.

7. Executive Order 13045: "Protection of Children From Environmental Health Risks and Safety Risks"

This action is subject to EO 13045 (62 FR 19885, April 23, 1997) because it is an economically significant regulatory action as defined by EO 12866, and EPA believes that the environmental health or safety risk addressed by this action may have a disproportionate effect on children. A synthesis of the science and research regarding how climate change may affect children and other vulnerable subpopulations is contained in the Technical Support Document for Endangerment or Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, which can be found in the public docket for this rule.[502] A summary of the analysis is presented below.

With respect to GHG emissions, the effects of climate change observed to

[502] U.S. EPA. (2009). Technical Support Document for Endangerment or Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Washington, DC: U.S. EPA. Docket EPA–HQ–OAR–2009–0472–11292.

date and projected to occur in the future include the increased likelihood of more frequent and intense heat waves. Specifically, EPA's analysis of the scientific assessment literature has determined that severe heat waves are projected to intensify in magnitude, frequency, and duration over the portions of the U.S. where these events already occur, with potential increases in mortality and morbidity, especially among the young, elderly, and frail. EPA has estimated reductions in projected global mean surface temperatures as a result of reductions in GHG emissions associated with the standards finalized in this action (Section III.F). Children may receive benefits from reductions in GHG emissions because they are included in the segment of the population that is most vulnerable to extreme temperatures.

For non-GHG pollutants, EPA has determined that climate change is expected to increase regional ozone pollution, with associated risks in respiratory infection, aggravation of asthma, and premature death. The directional effect of climate change on ambient PM levels remains uncertain. However, disturbances such as wildfires are increasing in the U.S. and are likely to intensify in a warmer future with drier soils and longer growing seasons. PM emissions from forest fires can contribute to acute and chronic illnesses of the respiratory system, particularly in children, including pneumonia, upper respiratory diseases, asthma and chronic obstructive pulmonary diseases.

8. Executive Order 13211 (Energy Effects)

This rule is not a "significant energy action" as defined in Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. In fact, this rule has a positive effect on energy supply and use. Because the GHG emission standards finalized today result in significant fuel savings, this rule encourages more efficient use of fuels. Therefore, we have concluded that this rule is not likely to have any adverse energy effects. Our energy effects analysis is described above in Section III.H.

9. National Technology Transfer Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

The rulemaking involves technical standards. Therefore, the Agency conducted a search to identify potentially applicable voluntary consensus standards. For CO_2, N_2O, and CH_4 emissions, we identified no such standards, and none were brought to our attention in comments. Therefore, EPA is collecting data over the same test cycles that are used for the CAFE program following standardized test methods and sampling procedures. This will minimize the amount of testing done by manufacturers, since manufacturers are already required to run these tests. For A/C system leakage improvement credits, EPA identified a Society of Automotive Engineers (SAE) methodology and EPA's approach is based closely on this SAE methodology. For the A/C system efficiency improvement credits, including the new idle test, EPA generally uses standardized test methods and sampling procedures. However, EPA knows of no consensus standard available for an A/C idle test to measure system efficiency improvements.

10. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

With respect to GHG emissions, EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. The reductions in CO_2 and other GHGs associated with the standards will affect climate change projections, and EPA has estimated reductions in projected global mean surface temperatures (Section III.F.3). Within communities experiencing climate change, certain parts of the population may be especially vulnerable; these include the poor, the elderly, those already in poor health, the disabled, those living alone, and/or indigenous populations dependent on one or a few resources.[503] In addition, the U.S. Climate Change Science Program [504] stated as one of its conclusions: "The United States is certainly capable of adapting to the collective impacts of climate change. However, there will still be certain individuals and locations where the adaptive capacity is less and these individuals and their communities will be disproportionally impacted by climate change." Therefore, these specific sub-populations may receive benefits from reductions in GHGs.

For non-GHG co-pollutants such as ozone, $PM_{2.5}$, and toxics, EPA has concluded that it is not practicable to determine whether there would be disproportionately high and adverse human health or environmental effects on minority and/or low income populations from this final rule.

11. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register.** A Major rule cannot take effect until 60 days after it

[503] U.S. EPA. (2009). Technical Support Document for Endangerment or Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Washington, DC: U.S. EPA. Docket EPA–HQ–OAR–2009–0472–11292.

[504] CCSP (2008) *Analyses of the effects of global change on human health and welfare and human systems.* A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. [Gamble, J.L. (ed.), K.L. Ebi, F.G. Sussman, T.J. Wilbanks, (Authors)]. U.S. Environmental Protection Agency, Washington, DC, USA.

is published in the **Federal Register.** This action is a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective July 6, 2010, *sixty days after date of publication in the* **Federal Register.**

J. Statutory Provisions and Legal Authority

Statutory authority for the vehicle controls finalized today is found in section 202(a) (which authorizes standards for emissions of pollutants from new motor vehicles which emissions cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare), 202(d), 203–209, 216, and 301 of the Clean Air Act, 42 U.S.C. 7521(a), 7521(d), 7522, 7523, 7524, 7525, 7541, 7542, 7543, 7550, and 7601.

IV. NHTSA Final Rule and Record of Decision for Passenger Car and Light Truck CAFE Standards for MYs 2012–2016

A. Executive Overview of NHTSA Final Rule

1. Introduction

The National Highway Traffic Safety Administration (NHTSA) is establishing Corporate Average Fuel Economy (CAFE) standards for passenger automobiles (passenger cars) and nonpassenger automobiles (light trucks) for model years (MY) 2012–2016. Improving vehicle fuel economy has been long and widely recognized as one of the key ways of achieving energy independence, energy security, and a low carbon economy.[505] NHTSA's CAFE standards will require passenger cars and light trucks to meet an estimated combined average of 34.1 mpg in MY 2016. This represents an average annual increase of 4.3 percent from the 27.6 mpg combined fuel economy level in MY 2011. NHTSA's final rule projects total fuel savings of approximately 61 billion gallons over the lifetimes of the vehicles sold in model years 2012–2016, with corresponding net societal benefits of over $180 billion using a 3 percent discount rate.[506]

The significance accorded to improving fuel economy reflects several factors. Conserving energy, especially reducing the nation's dependence on petroleum, benefits the U.S. in several ways. Improving energy efficiency has benefits for economic growth and the environment, as well as other benefits, such as reducing pollution and improving security of energy supply. More specifically, reducing total petroleum use decreases our economy's vulnerability to oil price shocks. Reducing dependence on oil imports from regions with uncertain conditions enhances our energy security. Additionally, the emission of CO_2 from the tailpipes of cars and light trucks is one of the largest sources of U.S. CO_2 emissions.[507] Using vehicle technology to improve fuel economy, thereby reducing tailpipe emissions of CO_2, is one of the three main measures of reducing those tailpipe emissions of CO_2.[508] The two other measures for reducing the tailpipe emissions of CO_2 are switching to vehicle fuels with lower carbon content and changing driver behavior, *i.e.,* inducing people to drive less.

While NHTSA has been setting fuel economy standards since the 1970s, today's action represents the first-ever joint final rule by NHTSA with another agency, the Environmental Protection Agency. As discussed in Section I, NHTSA's final MYs 2012–2016 CAFE standards are part of a joint National Program. A large majority of the projected benefits are achieved jointly with EPA's GHG rule, described in detail above in Section III of this preamble. These final CAFE standards are consistent with the President's National Fuel Efficiency Policy announcement of May 19, 2009, which called for harmonized rules for all automakers, instead of three overlapping and potentially inconsistent requirements from DOT, EPA, and the California Air Resources Board. And finally, the final CAFE standards and the analysis supporting them also respond to President's Obama's January 26 memorandum regarding the setting of CAFE standards for model years 2011 and beyond.

2. Role of Fuel Economy Improvements in Promoting Energy Independence, Energy Security, and a Low Carbon Economy

The need to reduce energy consumption is more crucial today than it was when EPCA was enacted in the mid-1970s. U.S. energy consumption has been outstripping U.S. energy production at an increasing rate. Net petroleum imports now account for approximately 57 percent of U.S. domestic petroleum consumption, and the share of U.S. oil consumption for transportation is approximately 71 percent.[509] Moreover, world crude oil production continues to be highly concentrated, exacerbating the risks of supply disruptions and their negative effects on both the U.S. and global economies.

Gasoline consumption in the U.S. has historically been relatively insensitive to fluctuations in both price and consumer income, and people in most parts of the country tend to view gasoline consumption as a non-discretionary expense. Thus, when gasoline's share in consumer expenditures rises, the public experiences fiscal distress. This fiscal distress can, in some cases, have macroeconomic consequences for the

[505] Among the reports and studies noting this point are the following:

John Podesta, Todd Stern and Kim Batten, "Capturing the Energy Opportunity; Creating a Low-Carbon Economy," Center for American Progress (November 2007), pp. 2, 6, 8, and 24–29, *available at: http://www.americanprogress.org/issues/2007/11/pdf/energy_chapter.pdf* (last accessed March 1, 2010).

Sarah Ladislaw, Kathryn Zyla, Jonathan Pershing, Frank Verrastro, Jenna Goodward, David Pumphrey, and Britt Staley, "A Roadmap for a Secure, Low-Carbon Energy Economy; Balancing Energy Security and Climate Change," World Resources Institute and Center for Strategic and International Studies (January 2009), pp. 21–22; *available at: http://pdf.wri.org/secure_low_carbon_energy_economy_roadmap.pdf* (last accessed March 1, 2010).

Alliance to Save Energy et al., "Reducing the Cost of Addressing Climate Change Through Energy Efficiency (2009), *available at: http://Aceee.org/energy/climate/leg.htm* (last accessed March 1, 2010).

John DeCicco and Freda Fung, "Global Warming on the Road; The Climate Impact of America's Automobiles," Environmental Defense (2006) pp. iv-vii; a*vailable at: http://www.edf.org/documents/5301_Globalwarmingontheroad.pdf* (last accessed March 1, 2010).

"Why is Fuel Economy Important?," a Web page maintained by the Department of Energy and Environmental Protection Agency, *available at http://www.fueleconomy.gov/feg/why.shtml* (last accessed March 1, 2010); Robert Socolow, Roberta Hotinski, Jeffery B. Greenblatt, and Stephen Pacala, "Solving The Climate Problem: Technologies Available to Curb CO_2 Emissions," *Environment,* volume 46, no. 10, 2004. pages 8–19, a*vailable at: http://www.princeton.edu/mae/people/faculty/socolow/ENVIRONMENTDec2004issue.pdf* (last accessed March 1, 2010).

[506] This value is based on what NHTSA refers to as "Reference Case" inputs, which are based on the assumptions that NHTSA has employed for its main analysis (as opposed to sensitivity analyses to examine the effect of variations in the assumptions on costs and benefits). The Reference Case inputs include fuel prices based on the AEO 2010 Reference Case, a 3 percent discount rate, a 10 percent rebound effect, a value for the social cost of carbon (SCC) of $21/metric ton CO_2 (in 2010, rising to $45/metric ton in 2050, at a 3 percent discount rate), etc. For a full listing of the Reference Case input assumptions, *see* Section IV.C.3 below.

[507] EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2006 (April 2008), pp. ES–4, ES–8, and 2–24. *Available at http://www.epa.gov/climatechange/emissions/usgginv_archive.html* (last accessed March 1, 2010).

[508] Podesta *et al.,* p. 25; Ladislaw *et al.* p. 21; DeCicco *et al.* p. vii; "Reduce Climate Change," a Web page maintained by the Department of Energy and Environmental Protection Agency at *http://www.fueleconomy.gov/feg/climate.shtml* (last accessed March 1, 2010).

[509] Energy Information Administration, Petroleum Basic Statistics, updated July 2009. *Available at http://www.eia.doe.gov/basics/quickoil.html* (last accessed March 1, 2010).

economy at large. Additionally, since U.S. oil production is only affected by fluctuations in prices over a period of years, any changes in petroleum consumption (as through increased fuel economy) largely flow into changes in the quantity of imports. Since petroleum imports account for about 2 percent of GDP, increase in oil imports can create a discernable fiscal drag. As a consequence, measures that reduce petroleum consumption, such as fuel economy standards, will directly benefit the balance-of-payments account, and strengthen the domestic economy to some degree. And finally, U.S. foreign policy has been affected for decades by rising U.S. and world dependency of crude oil as the basis for modern transportation systems, although fuel economy standards have only an indirect and general impact on U.S. foreign policy.

The benefits of a low carbon economy are manifold. The U.S. transportation sector is a significant contributor to total U.S. and global anthropogenic emissions of greenhouse gases. Motor vehicles are the second largest greenhouse gas-emitting sector in the U.S., after electricity generation, and accounted for 24 percent of total U.S. greenhouse gas emissions in 2006. Concentrations of greenhouse gases are at unprecedented levels compared to the recent and distant past, which means that fuel economy improvements to reduce those emissions are a crucial step toward addressing the risks of global climate change. These risks are well documented in Section III of this notice.

3. The National Program

NHTSA and EPA are each announcing final rules that have the effect of addressing the urgent and closely intertwined challenges of energy independence and security and global warming. These final rules call for a strong and coordinated Federal greenhouse gas and fuel economy program for passenger cars, light-duty-trucks, and medium-duty passenger vehicles (hereafter light-duty vehicles), referred to as the National Program. The final rules represent a coordinated program that can achieve substantial reductions of greenhouse gas (GHG) emissions and improvements in fuel economy from the light-duty vehicle part of the transportation sector, based on technology that will be commercially available and that can be incorporated at a reasonable cost in the rulemaking timeframe. The agencies' final rules will also provide regulatory certainty and consistency for the automobile industry by setting harmonized national standards. They were developed and are designed in ways that recognize and accommodate the relatively short amount of lead time for the model years covered by the rulemaking and the serious current economic situation faced by this industry.

These joint standards are consistent with the President's announcement on May 19, 2009 of a National Fuel Efficiency Policy that will reduce greenhouse gas emissions and improve fuel economy for all new cars and light-duty trucks sold in the United States,[510] and with the Notice of Upcoming Joint Rulemaking signed by DOT and EPA on that date.[511] This joint final rule also responds to the President's January 26, 2009 memorandum on CAFE standards for model years 2011 and beyond, the details of which can be found below.

a. Building Blocks of the National Program

The National Program is both needed and possible because the relationship between improving fuel economy and reducing CO_2 tailpipe emissions is a very direct and close one. CO_2 is the natural by-product of the combustion of fuel in motor vehicle engines. The more fuel efficient a vehicle is, the less fuel it burns to travel a given distance. The less fuel it burns, the less CO_2 it emits in traveling that distance.[512] Since the amount of CO_2 emissions is essentially constant per gallon combusted of a given type of fuel, the amount of fuel consumption per mile is directly related to the amount of CO_2 emissions per mile. In the real world, there is a single pool of technologies for reducing fuel consumption and CO_2 emissions. Using those technologies in the way that minimizes fuel consumption also minimizes CO_2 emissions. While there are emission control technologies that can capture or destroy the pollutants (*e.g.,* carbon monoxide) that are produced by imperfect combustion of fuel, there is at present no such technology for CO_2. In fact, the only way at present to reduce tailpipe emissions of CO_2 is by reducing fuel consumption. The National Program thus has dual benefits: it conserves energy by improving fuel economy, as required of NHTSA by EPCA and EISA; in the process, it necessarily reduces tailpipe CO_2 emissions consonant with EPA's purposes and responsibilities under the Clean Air Act.

i. DOT's CAFE Program

In 1975, Congress enacted the Energy Policy and Conservation Act (EPCA), mandating a regulatory program for motor vehicle fuel economy to meet the various facets of the need to conserve energy, including ones having energy independence and security, environmental and foreign policy implications. EPCA allocates the responsibility for implementing the program between NHTSA and EPA as follows:

- NHTSA sets Corporate Average Fuel Economy (CAFE) standards for passenger cars and light trucks.
- Because fuel economy performance is measured during emissions regulation testing, EPA establishes the procedures for testing, tests vehicles, collects and analyzes manufacturers' test data, and calculates the average fuel economy of each manufacturer's passenger cars and light trucks. EPA determines fuel economy by measuring the amount of CO_2 emitted from the tailpipe, rather than by attempting to measure directly the amount of fuel consumed during a vehicle test, a difficult task to accomplish with precision. EPA then uses the carbon content of the test fuel[513] to calculate the amount of fuel that had to be consumed per mile in order to produce that amount of CO_2. Finally, EPA converts that fuel consumption figure into a miles-per-gallon figure.
- Based on EPA's calculation, NHTSA enforces the CAFE standards.

The CAFE standards and compliance testing cannot capture all of the real world CO_2 emissions, because EPCA currently requires EPA to use the 1975 passenger car test procedures under which vehicle air conditioners are not turned on during fuel economy testing.[514] CAFE standards also do not address the 5–8 percent of GHG emissions that are not CO_2, *i.e.,* nitrous oxide (N_2O), and methane (CH_4) as well as emissions of hydrofluorocarbons (HFCs) related to operation of the air conditioning system.

NHTSA has been setting CAFE standards pursuant to EPCA since the enactment of the statute. Fuel economy gains since 1975, due both to the standards and to market factors, have resulted in saving billions of barrels of oil and avoiding billions of metric tons

[510] President Obama Announces National Fuel Efficiency Policy, The White House, May 19, 2009. *Available at http://www.whitehouse.gov/the_press_office/President-Obama-Announces-National-Fuel-Efficiency-Policy/* (last accessed March 15, 2010).

[511] 74 FR 24007 (May 22, 2009).

[512] Panel on Policy Implications of Greenhouse Warming, National Academy of Sciences, National Academy of Engineering, Institute of Medicine, "Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base," National Academies Press, 1992, at 287.

[513] This is the method that EPA uses to determine compliance with NHTSA's CAFE standards.

[514] *See* 49 U.S.C. 32904(c).

of CO_2 emissions. In December 2007, Congress enacted the Energy Independence and Securities Act (EISA), amending EPCA to require, among other things, attribute-based standards for passenger cars and light trucks. The most recent CAFE rulemaking action was the issuance of standards governing model years 2011 cars and trucks.

ii. EPA's Greenhouse Gas Program

On April 2, 2007, the U.S. Supreme Court issued its opinion in *Massachusetts* v. *EPA,*[515] a case involving a 2003 order of the Environmental Protection Agency (EPA) denying a petition for rulemaking to regulate greenhouse gas emissions from motor vehicles under the Clean Air Act.[516] The Court ruled that greenhouse gases are "pollutants" under the CAA and that the Act therefore authorizes EPA to regulate greenhouse gas emissions from motor vehicles if that agency makes the necessary findings and determinations under section 202 of the Act. The Court considered EPCA only briefly, stating that the two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.

EPA has been working on appropriate responses that are consistent with the decision of the Supreme Court in *Massachusetts* v. *EPA.*[517] As part of those responses, in July 2008, EPA issued an Advance Notice of Proposed Rulemaking seeking comments on the impact of greenhouse gases on the environment and on ways to reduce greenhouse gas emissions from motor vehicles. EPA recently also issued a final rule finding that emissions of GHGs from new motor vehicles and motor vehicle engines cause or contribute to air pollution that endanger public health and welfare.[518]

iii. California Air Resources Board's Greenhouse Gas Program

In 2004, the California Air Resources Board approved standards for new light-duty vehicles, which regulate the emission of not only CO_2, but also other GHGs. Since then, thirteen states and the District of Columbia, comprising approximately 40 percent of the light-duty vehicle market, have adopted California's standards. These standards apply to model years 2009 through 2016 and require CO_2 emissions levels for passenger cars and some light trucks of 323 g/mil in 2009, decreasing to 205 g/mi in 2016, and 439 g/mi for light trucks in 2009, decreasing to 332 g/mi in 2016. In 2008, EPA denied a request by California for a waiver of preemption under the CAA for its GHG emissions standards. However, consistent with another Presidential Memorandum of January 26, 2009, EPA reconsidered the prior denial of California's request.[519] EPA withdrew the prior denial and granted California's request for a waiver on June 30, 2009.[520] The granting of the waiver permits California's emission standards to come into effect notwithstanding the general preemption of State emission standards for new motor vehicles that otherwise applies under the Clean Air Act.

b. The President's Announcement of National Fuel Efficiency Policy (May 2009)

The issue of three separate regulatory frameworks and overlapping requirements for reducing fuel consumption and CO_2 emissions has been a subject of much controversy and legal disputes. On May 19, 2009 President Obama announced a National Fuel Efficiency Policy aimed at both increasing fuel economy and reducing greenhouse gas pollution for all new cars and trucks sold in the United States, while also providing a predictable regulatory framework for the automotive industry. The policy seeks to set harmonized Federal standards to regulate both fuel economy and greenhouse gas emissions while preserving the legal authorities of the Department of Transportation, the Environmental Protection Agency and the State of California. The program covers model year 2012 to model year 2016 and ultimately requires the equivalent of an average fuel economy of 35.5 mpg in 2016, if all CO_2 reduction were achieved through fuel economy improvements. Building on the MY 2011 standard that was set in March 2009, this represents an average of 5 percent increase in average fuel economy each year between 2012 and 2016.

In conjunction with the President's announcement, the Department of Transportation and the Environmental Protection Agency issued on May 19, 2009, a Notice of Upcoming Joint Rulemaking to propose a strong and coordinated fuel economy and greenhouse gas National Program for Model Year (MY) 2012–2016 light duty vehicles. Consistent, harmonized, and streamlined requirements under that program hold out the promise of delivering environmental and energy benefits, cost savings, and administrative efficiencies on a nationwide basis that might not be available under a less coordinated approach. The National Program makes it possible for the standards of two different Federal agencies and the standards of California and other states to act in a unified fashion in providing these benefits. A harmonized approach to regulating light-duty vehicle greenhouse gas (GHG) emissions and fuel economy is critically important given the interdependent goals of addressing climate change and ensuring energy independence and security. Additionally, a harmonized approach may help to mitigate the cost to manufacturers of having to comply with multiple sets of Federal and State standards

4. Review of CAFE Standard Setting Methodology per the President's January 26, 2009 Memorandum on CAFE Standards for MYs 2011 and Beyond

On May 2, 2008, NHTSA published a Notice of Proposed Rulemaking entitled Average Fuel Economy Standards, Passenger Cars and Light Trucks; Model Years 2011–2015, 73 FR 24352. In mid-October, the agency completed and released a final environmental impact statement in anticipation of issuing standards for those years. Based on its consideration of the public comments and other available information, including information on the financial condition of the automotive industry, the agency adjusted its analysis and the standards and prepared a final rule for MYs 2011–2015. On November 14, the Office of Information and Regulatory Affairs (OIRA) of the Office of Management and Budget concluded review of the rule as consistent with the Order.[521] However, issuance of the final rule was held in abeyance. On January 7, 2009, the Department of Transportation announced that the final rule would not be issued.

[515] 127 S.Ct. 1438 (2007).

[516] 68 FR 52922 (Sept. 8, 2003).

[517] 549 U.S. 497 (2007). For further information on *Massachusetts* v. *EPA* see the July 30, 2008 Advance Notice of Proposed Rulemaking, "Regulating Greenhouse Gas Emissions under the Clean Air Act," 73 FR 44354 at 44397. There is a comprehensive discussion of the litigation's history, the Supreme Court's findings, and subsequent actions undertaken by the EPA from 2007–2008 in response to the Supreme Court remand.

[518] 74 FR 66496 (Dec. 15, 2009).

[519] 74 FR 66495 (Dec. 15, 2009). The endangerment finding was challenged by industry in a filing submitted December 23, 2009; a hearing date does not appear to have been set.

[520] 74 FR 32744 (July 8, 2009).

[521] Record of OIRA's action can be found at *http://www.reginfo.gov/public/do/eoHistReviewSearch* (last accessed March 1, 2010). To find the report on the clearance of the draft final rule, select "Department of Transportation" under "Economically Significant Reviews Completed" and select "2008" under "Select Calendar Year."

a. Requests in the President's Memorandum

In light of the requirement to prescribe standards for MY 2011 by March 30, 2009 and in order to provide additional time to consider issues concerning the analysis used to determine the appropriate level of standards for MYs 2012 and beyond, the President issued a memorandum on January 26, 2009, requesting the Secretary of Transportation and Administrator of the National Highway Traffic Safety Administration NHTSA to divide the rulemaking into two parts: (1) MY 2011 standards, and (2) standards for MY 2012 and beyond.

i. CAFE Standards for Model Year 2011

The request that the final rule establishing CAFE standards for MY 2011 passenger cars and light trucks be prescribed by March 30, 2009 was based on several factors. One was the requirement that the final rule regarding fuel economy standards for a given model year must be adopted at least 18 months before the beginning of that model year (49 U.S.C. 32902(g)(2)). The other was that the beginning of MY 2011 is considered for the purposes of CAFE standard setting to be October 1, 2010.

ii. CAFE Standards for Model Years 2012 and Beyond

The President requested that, before promulgating a final rule concerning the model years after model year 2011, NHTSA

> [C]onsider the appropriate legal factors under the EISA, the comments filed in response to the Notice of Proposed Rulemaking, the relevant technological and scientific considerations, and to the extent feasible, the forthcoming report by the National Academy of Sciences mandated under section 107 of EISA.

In addition, the President requested that NHTSA consider whether any provisions regarding preemption are appropriate under applicable law and policy.

b. Implementing the President's Memorandum

In keeping with the President's remarks on January 26, 2009 for new national policies to address the closely intertwined issues of energy independence, energy security and climate change, and for the initiation of serious and sustained domestic and international action to address them, NHTSA has developed CAFE standards for MY 2012 and beyond after collecting new information, conducting a careful review of technical and economic inputs and assumptions, and standard setting methodology, and completing new analyses.

The goal of the review and re-evaluation was to ensure that the approach used for MY 2012 and thereafter would produce standards that contribute, to the maximum extent possible under EPCA/EISA, to meeting the energy and environmental challenges and goals outlined by the President. We have sought to craft our program with the goal of creating the maximum incentives for innovation, providing flexibility to the regulated parties, and meeting the goal of making substantial and continuing reductions in the consumption of fuel. To that end, we have made every effort to ensure that the CAFE program for MYs 2012–2016 is based on the best scientific, technical, and economic information available, and that such information was developed in close coordination with other Federal agencies and our stakeholders, including the states and the vehicle manufacturers.

We have also re-examined EPCA, as amended by EISA, to consider whether additional opportunities exist to improve the effectiveness of the CAFE program. For example, EPCA authorizes increasing the amount of civil penalties for violating the CAFE standards.[522] Further, if the test procedures used for light trucks were revised to provide for the operation of air conditioning during fuel economy testing, vehicle manufacturers would have a regulatory incentive to increase the efficiency of air conditioning systems, thereby reducing both fuel consumption and tailpipe emissions of CO_2.[523]

With respect to the President's request that NHTSA consider the issue of preemption, NHTSA is deferring further consideration of the preemption issue. The agency believes that it is unnecessary to address the issue further at this time because of the consistent and coordinated Federal standards that apply nationally under the National Program.

As requested in the President's memorandum, NHTSA reviewed comments received on the MY 2011 rulemaking and revisited its assumptions and methodologies for purposes of developing the proposed MY 2012–2016 standards. For more information on how the proposed CAFE standards were developed with those comments in mind, see the NPRM and the supporting documents.

5. Summary of the Final MY 2012–2016 CAFE Standards

NHTSA is issuing CAFE standards that are, like the standards NHTSA promulgated in March 2009 for MY 2011, expressed as mathematical functions depending on vehicle footprint. Footprint is one measure of vehicle size, and is determined by multiplying the vehicle's wheelbase by the vehicle's average track width.[524] Under the final CAFE standards, each light vehicle model produced for sale in the United States has a fuel economy target. The CAFE levels that must be met by the fleet of each manufacturer will be determined by computing the sales-weighted harmonic average of the targets applicable to each of the manufacturer's passenger cars and light trucks. These targets, the mathematical form and coefficients of which are presented later in today's notice, appear as follows when the values of the targets are plotted versus vehicle footprint:

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[522] Under 49 U.S.C. 32912(c), roughly, NHTSA may raise the penalty amount if the agency decides that doing so will increase energy conservation substantially without having a substantial deleterious impact on the economy, employment, or competition among automobile manufacturers.

[523] Under 49 U.S.C. 32904(c), EPA must use the same procedures for passenger automobiles that the Administrator used for model year 1975 (weighted 55 percent urban cycle and 45 percent highway cycle), or procedures that give comparable results.

[524] *See* 49 CFR 523.2 for the exact definition of "footprint."

Figure IV.A.5-1 Final MY 2011 and Final MY 2012-2016

Passenger Car Fuel Economy Targets

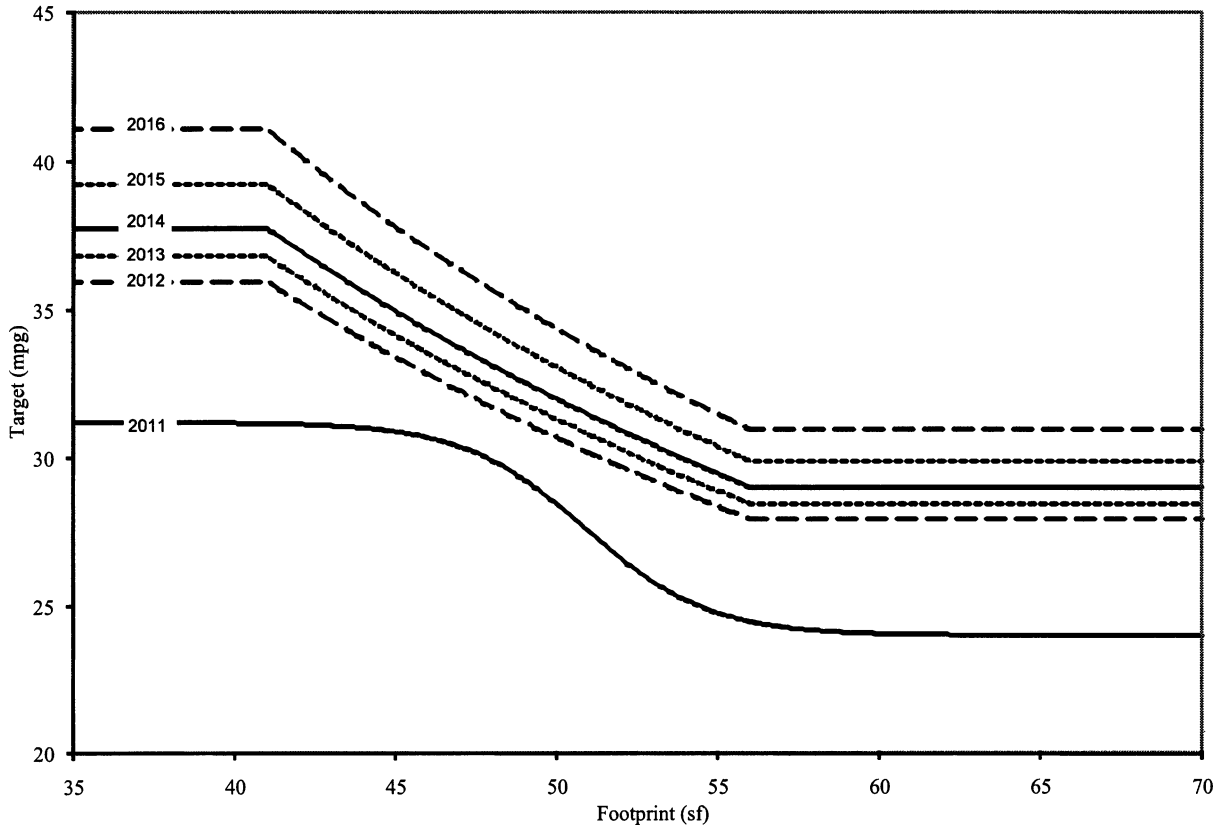
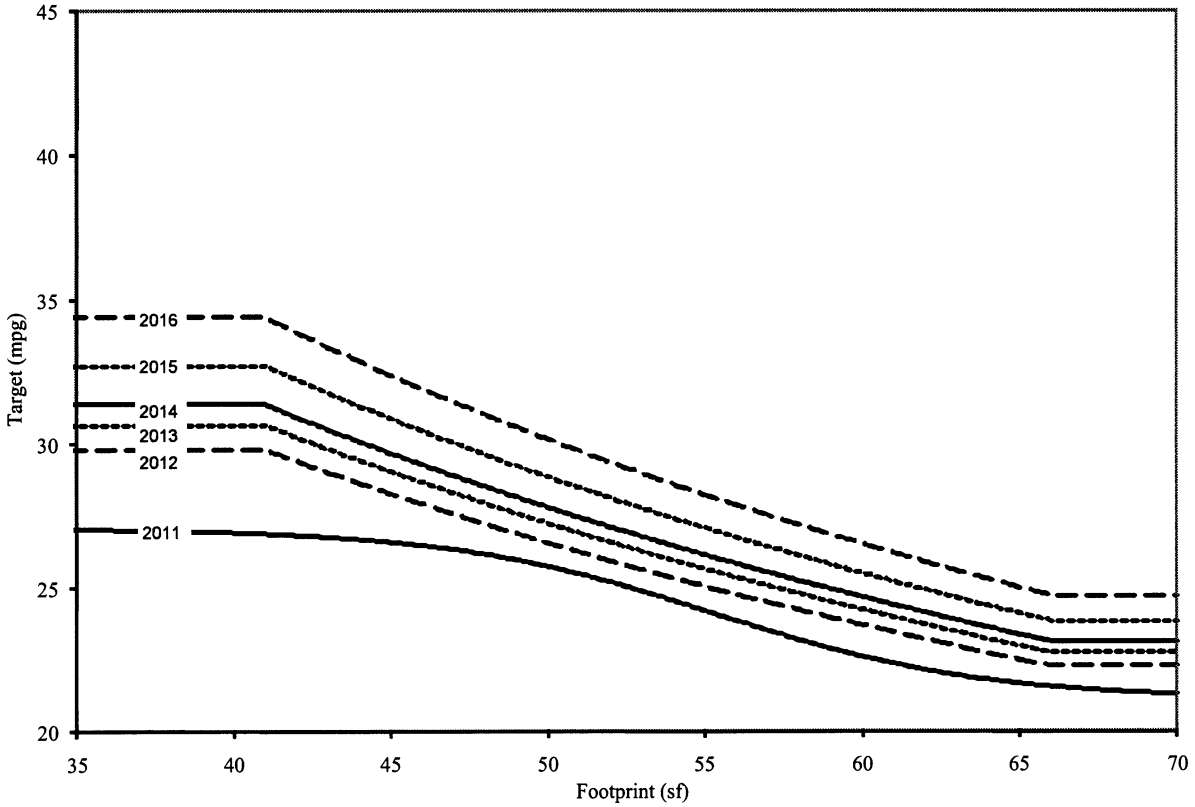


Figure IV.A.5-2 Final MY 2011 and Final MY 2012-2016

Light Truck Fuel Economy Targets



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Under these final footprint-based CAFE standards, the CAFE levels required of individual manufacturers depend, as noted above, on the mix of vehicles sold. It is important to note that NHTSA's CAFE standards and EPA's GHG standards will both be in effect, and each will lead to increases in average fuel economy and CO_2 emissions reductions. The two agencies' standards together comprise the National Program, and this discussion of costs and benefits of NHTSA's CAFE standards does not change the fact that both the CAFE and GHG standards, jointly, are the source of the benefits and costs of the National Program.

Based on the forecast developed for this final rule of the MYs 2012–2016 vehicle fleet, NHTSA estimates that the targets shown above will result in the following estimated average required CAFE levels:

TABLE IV.A.5–1—ESTIMATED AVERAGE REQUIRED FUEL ECONOMY (MPG) UNDER FINAL STANDARDS

	2012	2013	2014	2015	2016
Passenger Cars	33.3	34.2	34.9	36.2	37.8
Light Trucks	25.4	26.0	26.6	27.5	28.8
Combined Cars & Trucks	29.7	30.5	31.3	32.6	34.1

For the reader's reference, these miles per gallon values would be equivalent to the following gallons per 100 miles values for passenger cars and light trucks:

	2012	2013	2014	2015	2016
Passenger Cars	3.00	2.93	2.86	2.76	2.65
Light Trucks	3.94	3.85	3.76	3.63	3.48
Combined Cars & Trucks	3.36	3.28	3.19	3.07	2.93

NHTSA estimates that average achieved fuel economy levels will correspondingly increase through MY 2016, but that manufacturers will, on average, undercomply [525] in some model years and overcomply [526] in others, reaching a combined average fuel economy of 33.7 mpg in MY 2016.[527] Table IV.A.5–1 is the estimated required fuel economy for the final CAFE standards while Table IV.A.5–2 includes the effects of some manufacturers' payment of CAFE fines and use of FFV credits. In addition, Section IV.G.4 below contains an analysis of the achieved levels (and projected fuel savings, costs, and benefits) when the use of FFV credits is assumed.

TABLE IV.A.5–2—ESTIMATED AVERAGE ACHIEVED FUEL ECONOMY (MPG) UNDER FINAL STANDARDS

	2012	2013	2014	2015	2016
Passenger Cars	32.8	34.4	35.3	36.3	37.2
Light Trucks	25.1	26.0	27.0	27.6	28.5
Combined Cars & Trucks	29.3	30.6	31.7	32.6	33.7

For the reader's reference, these miles per gallon values would be equivalent to the following gallons per 100 miles values for passenger cars and light trucks:

	2012	2013	2014	2015	2016
Passenger Cars	3.05	2.91	2.83	2.76	2.69
Light Trucks	3.99	3.84	3.71	3.62	3.50
Combined Cars & Trucks	3.42	3.27	3.15	3.06	2.97

NHTSA estimates that these fuel economy increases will lead to fuel savings totaling 61 billion gallons during the lifetimes of vehicles sold in MYs 2012–2016 (all following tables assume Reference Case economic inputs):

TABLE IV.A.5–3—FUEL SAVED (BILLION GALLONS) UNDER FINAL STANDARDS

	2012	2013	2014	2015	2016	Total
Passenger Cars	2.4	5.2	7.2	9.4	11.4	35.7
Light Trucks	1.8	3.7	5.3	6.5	8.1	25.4
Combined	4.2	8.9	12.5	16.0	19.5	61.0

The agency also estimates that these new CAFE standards will lead to corresponding reductions of CO_2 emissions totaling 655 million metric tons (mmt) during the useful lives of vehicles sold in MYs 2012–2016:

TABLE IV.A.5–4—AVOIDED CARBON DIOXIDE EMISSIONS (MMT) UNDER FINAL STANDARDS

	2012	2013	2014	2015	2016	Total
Passenger Cars	25	54	77	101	123	380
Light Trucks	19	40	57	71	88	275

[525] In NHTSA's analysis, "undercompliance" is mitigated either through use of FFV credits, use of existing or "banked" credits, or through fine payment. Because NHTSA cannot consider availability of credits in setting standards, the estimated achieved CAFE levels presented here do not account for their use. In contrast, because NHTSA is not prohibited from considering fine payment, the estimated achieved CAFE levels presented here include the assumption that BMW, Daimler (*i.e.,* Mercedes), Porsche, and, Tata (*i.e.,* Jaguar and Rover) will only apply technology up to the point that it would be less expensive to pay civil penalties.

[526] In NHTSA's analysis, "overcompliance" occurs through multi-year planning: manufacturers apply some "extra" technology in early model years (*e.g.,* MY 2014) in order to carry that technology forward and thereby facilitate compliance in later model years (*e.g.,* MY 2016).

[527] Consistent with EPCA, NHTSA has not accounted for manufacturers' ability to earn CAFE credits for selling FFVs, carry credits forward and back between model years, and transfer credits between the passenger car and light truck fleets.

TABLE IV.A.5–4—AVOIDED CARBON DIOXIDE EMISSIONS (MMT) UNDER FINAL STANDARDS—Continued

	2012	2013	2014	2015	2016	Total
Combined	44	94	134	172	210	655

The agency estimates that these fuel economy increases would produce other benefits (*e.g.,* reduced time spent refueling), as well as some disbenefits (*e.g.,* increased traffic congestion) caused by drivers' tendency to increase travel when the cost of driving declines (as it does when fuel economy increases). The agency has estimated the total monetary value to society of these benefits and disbenefits, and estimates that the final standards will produce significant benefits to society. NHTSA estimates that, in present value terms, these benefits would total over $180 billion over the useful lives of vehicles sold during MYs 2012–2016:

TABLE IV.A.5–5—PRESENT VALUE OF BENEFITS ($BILLION) UNDER FINAL CAFE STANDARDS

	2012	2013	2014	2015	2016	Total
Passenger Cars	6.8	15.2	21.6	28.7	35.2	107.5
Light Trucks	5.1	10.7	15.5	19.4	24.3	75.0
Combined	11.9	25.8	37.1	48	59.5	182.5

NHTSA attributes most of these benefits—about $143 billion, as noted above—to reductions in fuel consumption, valuing fuel (for societal purposes) at future pretax prices in the Energy Information Administration's (EIA's) reference case forecast from Annual Energy Outlook (AEO) 2010. The Final Regulatory Impact Analysis (FRIA) accompanying today's final rule presents a detailed analysis of specific benefits of the final rule.

	Amount	Monetized value (discounted)	
		3% Discount rate	7% Discount rate
Fuel savings	61.0 billion gallons	$143.0 billion	$112.0 billion.
CO_2 emissions reductions [528]	655 mmt	$14.5 billion	$14.5 billion.

NHTSA estimates that the necessary increases in technology application will involve considerable monetary outlays, totaling $52 billion in incremental outlays (*i.e.,* beyond those attributable to the MY 2011 standards) by new vehicle purchasers during MYs 2012–2016:

TABLE IV.A.5–6—INCREMENTAL TECHNOLOGY OUTLAYS ($B) UNDER FINAL CAFE STANDARDS

	2012	2013	2014	2015	2016	Total
Passenger Cars	4.1	5.4	6.9	8.2	9.5	34.2
Light Trucks	1.8	2.5	3.7	4.3	5.4	17.6
Combined	5.9	7.9	10.5	12.5	14.9	51.7

Corresponding to these outlays and, to a much lesser extent, civil penalties that some companies are expected to pay for noncompliance, the agency estimates that the final standards would lead to increases in average new vehicle prices, ranging from $322 per vehicle in MY 2012 to $961 per vehicle in MY 2016:

TABLE IV.A.5–7—INCREMENTAL INCREASES IN AVERAGE NEW VEHICLE PRICES ($) UNDER FINAL CAFE STANDARDS

	2012	2013	2014	2015	2016
Passenger Cars	505	573	690	799	907
Light Trucks	322	416	621	752	961
Combined	434	513	665	782	926

[528] We note that the net present value of reduced CO_2 emissions is calculated differently than other benefits. The same discount rate used to discount the value of damages from future emissions (SCC at 5 percent, 3 percent, and 2.5 percent) is used to calculate the net present value of the SCC for internal consistency. Additionally, we note that the SCC increases over time. *See Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866,* Interagency Working Group on Social Cost of Carbon, United States Government, February 2010 (available in Docket No. NHTSA–2009–0059 for more information.

Tables IV.A.5–8 and IV.A.5–9 below present itemized costs and benefits for a 3 percent and a 7 percent discount rate, respectively, for the combined fleet (passenger cars and light trucks) in each model year and for all model years combined, again assuming Reference Case inputs (except for the variation in discount rate). Numbers in parentheses represent negative values.

TABLE IV.A.5–8—ITEMIZED COST AND BENEFIT ESTIMATES FOR THE COMBINED VEHICLE FLEET, 3% DISCOUNT RATE

	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016	Total
Costs:						
Technology Costs	5,903	7,890	10,512	12,539	14,904	51,748
Benefits:						
Savings in Lifetime Fuel Expenditures	9,265	20,178	29,083	37,700	46,823	143,048
Consumer Surplus from Additional Driving	696	1,504	2,150	2,754	3,387	10,491
Value of Savings in Refueling Time	706	1,383	1,939	2,464	2,950	9,443
Reduction in Petroleum Market Externalities	545	1,154	1,630	2,080	2,543	7,952
Reduction in Climate-Related Damages from Lower CO_2 Emissions [529]	921	2,025	2,940	3,840	4,804	14,528
Reduction in Health Damage Costs From Lower Emissions of Criteria Air Pollutants						
CO	0	0	0	0	0	0
VOC	42	76	102	125	149	494
NO_X	70	104	126	146	166	612
PM	205	434	612	776	946	2,974
SO_X	158	332	469	598	731	2,288
Dis-Benefits From Increased Driving						
Congestion Costs	(447)	(902)	(1,282)	(1,633)	(2,000)	(6,264)
Noise Costs	(9)	(18)	(25)	(32)	(39)	(122)
Crash Costs	(217)	(430)	(614)	(778)	(950)	(2,989)
Total Benefits	11,936	25,840	37,132	48,040	59,509	182,457
Net Benefits	6,033	17,950	26,619	35,501	44,606	130,709

TABLE IV.A.5–9—ITEMIZED COST AND BENEFIT ESTIMATES FOR THE COMBINED VEHICLE FLEET, 7% DISCOUNT RATE

	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016	Total
Costs:						
Technology Costs	5,903	7,890	10,512	12,539	14,904	51,748
Benefits:						
Savings in Lifetime Fuel Expenditures	7,197	15,781	22,757	29,542	36,727	112,004
Consumer Surplus from Additional Driving	542	1,179	1,686	2,163	2,663	8,233
Value of Savings in Refueling Time	567	1,114	1,562	1,986	2,379	7,608
Reduction in Petroleum Market Externalities	432	917	1,296	1,654	2,023	6,322
Reduction in Climate-Related Damages From Lower CO_2 Emissions [530]	921	2,025	2,940	3,840	4,804	14,530
Reduction in Health Damage Costs From Lower Emissions of Criteria Air Pollutants						
CO	0	0	0	0	0	0
VOC	32	60	80	99	119	390
NO_x	53	80	98	114	131	476
PM	154	336	480	611	748	2,329
SO_x	125	265	373	475	581	1,819
Dis-Benefits From Increased Driving						
Congestion Costs	(355)	(719)	(1,021)	(1,302)	(1,595)	(4,992)
Noise Costs	(7)	(14)	(20)	(26)	(31)	(98)
Crash Costs	(173)	(342)	(488)	(619)	(756)	(2,378)

[529] *See supra* note 528.

TABLE IV.A.5–9—ITEMIZED COST AND BENEFIT ESTIMATES FOR THE COMBINED VEHICLE FLEET, 7% DISCOUNT RATE—Continued

	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016	Total
Total Benefits	9,488	20,682	29,743	38,537	47,793	146,243
Net Benefits	3,586	12,792	19,231	25,998	32,890	94,497

Neither EPCA nor EISA *requires* that NHTSA conduct a cost-benefitanalysis in determining average fuel economy standards, but too, neither precludes its use.[531] EPCA does require that NHTSA consider economic practicability among other factors, and NHTSA has concluded, as discussed elsewhere herein, that the standards it promulgates today are economically practicable. Further validating and supporting its conclusion that the standards it promulgates today are reasonable, a comparison of the standards' costs and benefits shows that the standards' estimated benefits far outweigh its estimated costs. Based on the figures reported above, NHTSA estimates that the total benefits of today's final standards would be more than three times the magnitude of the corresponding costs, such that the final standards would produce net benefits of over $130 billion over the useful lives of vehicles sold during MYs 2012–2016.

B. Background

1. Chronology of Events Since the National Academy of Sciences Called for Reforming and Increasing CAFE Standards

a. National Academy of Sciences Issues Report on Future of CAFE Program (February 2002)

i. Significantly Increasing CAFE Standards Without Making Them Attribute-Based Would Adversely Affect Safety

In the 2002 congressionally-mandated report entitled "Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards,"[532] a majority of the committee of the National Academy of Sciences (NAS) ("2002 NAS Report") concluded that the then-existing form of passenger car and light truck CAFE standards permitted vehicle manufacturers to comply in part by downweighting and even downsizing their vehicles and that these actions had led to additional fatalities. The committee explained that this safety problem arose because, at that time, the CAFE standards were not attribute-based and thus subjected all passenger cars to the same fuel economy target and all light trucks to the same target, regardless of their weight, size, or load-carrying capacity.[533] The committee said that this experience suggests that consideration should be given to developing a new system of fuel economy targets that reflects differences in such vehicle attributes. Without a thoughtful restructuring of the program, there would be trade-offs that must be made if CAFE standards were increased by any significant amount.[534]

In response to these conclusions, NHTSA considered various attributes and ultimately issued footprint-based CAFE standards for light trucks and sought legislative authority to issue attribute-based CAFE standards for passenger cars before undertaking to raise the car standards. Congress went a step further in enacting EISA, not only authorizing the issuance of attribute-based standards, but also mandating them.

ii. Climate Change and Other Externalities Justify Increasing the CAFE Standards

The NAS committee said that there are two compelling concerns that justify increasing the fuel economy standards, both relating to externalities. The first and most important concern, it argued, is the accumulation in the atmosphere of greenhouse gases, principally carbon dioxide.[535]

A second concern is that petroleum imports have been steadily rising because of the nation's increasing demand for gasoline without a corresponding increase in domestic supply. The high cost of oil imports poses two risks: downward pressure on the strength of the dollar (which drives up the cost of goods that Americans import) and an increase in U.S. vulnerability to macroeconomic shocks that cost the economy considerable real output.

To determine how much the fuel economy standards should be increased, the committee urged that all social benefits of such increases be considered. That is, it urged not only that the dollar value of the saved fuel be considered, but also that the dollar value to society of the resulting reductions in greenhouse gas emissions and in dependence on imported oil should be calculated and considered.

iii. Reforming the CAFE Program Could Address Inequity Arising From the CAFE Structure

The 2002 NAS report expressed concerns about increasing the standards under the CAFE program as it was then structured. While raising CAFE standards under the then-existing structure would reduce fuel consumption, doing so under alternative structures "could accomplish the same end at lower cost, provide more flexibility to manufacturers, or address inequities arising from the present" structure.[536]

To address those structural problems, the report suggested various possible reforms. The report found that the "CAFE program might be improved significantly by converting it to a system in which fuel targets depend on vehicle attributes."[537] The report noted further that under an attribute-based approach, the required CAFE levels could vary among the manufacturers based on the distribution of their product mix. NAS

[530] *See supra* note 529.

[531] *Center for Biological Diversity* v. *NHTSA,* 508 F.3d 508 (9th Cir. 2007) (rejecting argument that EPCA precludes the use of a marginal cost-benefit analysis that attempted to weigh all of the social benefits (*i.e.,* externalities as well as sdirect benefits to consumers) of improved fuel savings in determining the stringency of the CAFE standards). *See* also *Entergy Corp.* v. *Riverkeeper, Inc.,* 129 S.Ct. 1498, 1508 (2009) ("[U]nder *Chevron,* that an agency is not *required* to [conduct a cost-benefit analysis] does not mean that an agency is not *permitted* to do so.")

[532] National Research Council, "Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards," National Academy Press, Washington, DC (2002). *Available at http://www.nap.edu/openbook.php?isbn=0309076013* (last accessed March 1, 2010). The conference committee report for the Department of Transportation and Related Agencies Appropriations Act for FY 2001 (Pub. L. 106–346) directed NHTSA to fund a study by NAS to evaluate the effectiveness and impacts of CAFE standards (H. Rep. No. 106–940, p. 117–118). In response to the direction from Congress, NAS published this lengthy report.

[533] NHTSA formerly used this approach for CAFE standards. EISA prohibits its use after MY 2010.

[534] NAS, p. 9. As discussed at length in prior CAFE rules, two members of the NAS Committee dissented from the majority opinion that there would be safety impacts to downweighting under a flat-standard system.

[535] NAS, pp. 2, 13, and 83.

[536] NAS, pp. 4–5 (Finding 10).

[537] NAS, p. 5 (Finding 12).

stated that targets could vary among passenger cars and among trucks, based on some attribute of these vehicles such as weight, size, or load-carrying capacity. The report explained that a particular manufacturer's average target for passenger cars or for trucks would depend upon the fractions of vehicles it sold with particular levels of these attributes.[538]

b. NHTSA Issues Final Rule Establishing Attribute-Based CAFE Standards for MY 2008–2011 Light Trucks (March 2006)

The 2006 final rule reformed the structure of the CAFE program for light trucks by introducing an attribute-based approach and using that approach to establish higher CAFE standards for MY 2008–2011 light trucks.[539] Reforming the CAFE program enabled it to achieve larger fuel savings, while enhancing safety and preventing adverse economic consequences.

As noted above, fuel economy standards were restructured so that they were based on a vehicle attribute, a measure of vehicle size called "footprint." It is the product of multiplying a vehicle's wheelbase by its track width. A target level of fuel economy was established for each increment in footprint (0.1 ft^2). Trucks with smaller footprints have higher fuel economy targets; conversely, larger ones have lower targets. A particular manufacturer's compliance obligation for a model year is calculated as the harmonic average of the fuel economy targets for the manufacturer's vehicles, weighted by the distribution of the manufacturer's production volumes among the footprint increments. Thus, each manufacturer is required to comply with a single overall average fuel economy level for each model year of production.

Compared to non-attribute-based CAFE, attribute-based CAFE enhances overall fuel savings while providing vehicle manufacturers with the flexibility they need to respond to changing market conditions. Attribute-based CAFE also provides a more equitable regulatory framework by creating a level playing field for manufacturers, regardless of whether they are full-line or limited-line manufacturers. We were particularly encouraged that attribute-based CAFE will confer no compliance advantage if vehicle makers choose to downsize some of their fleet as a CAFE compliance strategy, thereby reducing the adverse safety risks associated with the non-attribute-based CAFE program.

c. Ninth Circuit Issues Decision re Final Rule for MY 2008–2011 Light Trucks (November 2007)

On November 15, 2007, the United States Court of Appeals for the Ninth Circuit issued its decision in *Center for Biological Diversity* v. *NHTSA,*[540] the challenge to the MY 2008–11 light truck CAFE rule. The court held that EPCA permits, but does not require, the use of a marginal cost-benefit analysis. The court specifically emphasized NHTSA's discretion to decide how to balance the statutory factors—as long as that balancing does not undermine the fundamental statutory purpose of energy conservation. Although the Court found that NHTSA had been arbitrary and capricious in several respects, the Court did not vacate the standards, but instead said it would remand the rule to NHTSA to promulgate new standards consistent with its opinion "as expeditiously as possible and for the earliest model year practicable." Under the decision, the standards established by the April 2006 final rule would remain in effect unless and until amended by NHTSA. In addition, it directed the agency to prepare an Environmental Impact Statement.

d. Congress Enacts Energy Security and Independence Act of 2007 (December 2007)

As noted above in Section I.B., EISA significantly changed the provisions of EPCA governing the establishment of future CAFE standards. These changes made it necessary for NHTSA to pause in its efforts so that it could assess the implications of the amendments made by EISA and then, as required, revise some aspects of the proposals it had been developing (*e.g.,* the model years covered and credit issues).

e. NHTSA Proposes CAFE Standards for MYs 2011–2015 (April 2008)

The agency could not set out the exact level of CAFE that each manufacturer would have been required to meet for each model year under the passenger car or light truck standards since the levels would depend on information that would not be available until the end of each of the model years, *i.e.,* the final actual production figures for each of those years. The agency could, however, project what the industry-wide level of average fuel economy would have been for passenger cars and for light trucks if each manufacturer produced its expected mix of automobiles and just met its obligations under the proposed "optimized" standards for each model year.

	Passenger cars mpg	Light trucks mpg
MY 2011	31.2	25.0
MY 2012	32.8	26.4
MY 2013	34.0	27.8
MY 2014	34.8	28.2
MY 2015	35.7	28.6

The combined industry-wide average fuel economy (in miles per gallon, or mpg) levels for both cars and light trucks, if each manufacturer just met its obligations under the proposed "optimized" standards for each model year, would have been as follows:

	Combined mpg
MY 2011	27.8
MY 2012	29.2
MY 2013	30.5
MY 2014	31.0
MY 2015	31.6

The annual average increase during this five year period would have been approximately 4.5 percent. Due to the uneven distribution of new model introductions during this period and to the fact that significant technological changes could be most readily made in conjunction with those introductions, the annual percentage increases were greater in the early years in this period.

f. Ninth Circuit Revises Its Decision re Final Rule for MY 2008–2011 Light Trucks (August 2008)

In response to the Government petition for rehearing, the Ninth Circuit modified its decision by replacing its direction to prepare an EIS with a direction to prepare either a new EA or, if necessary, an EIS.[541]

g. NHTSA Releases Final Environmental Impact Statement (October 2008)

On October 17, 2008, EPA published a notice announcing the availability of NHTSA's final environmental impact statement (FEIS) for the MYs 2011–2015 rulemaking.[542] Throughout the FEIS, NHTSA relied extensively on findings of the United Nations Intergovernmental Panel on Climate Change (IPCC) and the U.S. Climate Change Science Program (USCCSP). In particular, the agency relied heavily on the most recent, thoroughly peer-reviewed, and credible assessments of global climate change and its impact on the United States: The

[538] NAS, p. 87.

[539] 71 FR 17566 (Apr. 6, 2006).

[540] 508 F.3d 508.

[541] *See CBD* v. *NHTSA,* 538 F.3d 1172 (9th Cir. 2008).

[542] 73 FR 61859 (Oct. 18, 2008).

IPCC Fourth Assessment Report Working Group I4 and II5 Reports, and reports by the USCCSP that include *Scientific Assessments of the Effects of Global Climate Change on the United States* and Synthesis and Assessment Products.

In the FEIS, NHTSA compared the environmental impacts of its preferred alternative and those of reasonable alternatives. It considered direct, indirect, and cumulative impacts and describes these impacts to inform the decision maker and the public of the environmental impacts of the various alternatives.

Among other potential impacts, NHTSA analyzed the direct and indirect impacts related to fuel and energy use, emissions, including carbon dioxide and its effects on temperature and climate change, air quality, natural resources, and the human environment. Specifically, the FEIS used a climate model to estimate and report on four direct and indirect effects of climate change, driven by alternative scenarios of GHG emissions, including:

1. Changes in CO_2 concentrations;
2. Changes in global mean surface temperature;
3. Changes in regional temperature and precipitation; and
4. Changes in sea level.

NHTSA also considered the cumulative impacts of the proposed standards for MY 2011–2015 passenger cars and light trucks, together with estimated impacts of NHTSA's implementation of the CAFE program through MY 2010 and NHTSA's future CAFE rulemaking for MYs 2016–2020.

h. Department of Transportation Decides Not To Issue MY 2011–2015 Final Rule (January 2009)

On January 7, 2009, the Department of Transportation announced that the Bush Administration would not issue the final rule, notwithstanding the Office of Information and Regulatory Affairs' completion of review of the rule under Executive Order 12866, Regulatory Planning and Review, on November 14, 2008.[543]

i. The President Requests NHTSA To Issue Final Rule for MY 2011 Only (January 2009)

As explained above, in his memorandum of January 26, 2009, the President requested the agency to issue a final rule adopting CAFE standards for MY 2011 only. Further, the President requested NHTSA to establish standards for MY 2012 and later after considering the appropriate legal factors, the comments filed in response to the May 2008 proposal, the relevant technological and scientific considerations, and, to the extent feasible, a forthcoming report by the National Academy of Sciences assessing automotive technologies that can practicably be used to improve fuel economy.

j. NHTSA Issues Final Rule for MY 2011 (March 2009)

i. Standards

The final rule established footprint-based fuel economy standards for MY 2011 passenger cars and light trucks. Each vehicle manufacturer's required level of CAFE was based on target levels of average fuel economy set for vehicles of different sizes and on the distribution of that manufacturer's vehicles among those sizes. The curves defining the performance target at each footprint reflect the technological and economic capabilities of the industry. The target for each footprint is the same for all manufacturers, regardless of differences in their overall fleet mix. Compliance would be determined by comparing a manufacturer's harmonically averaged fleet fuel economy levels in a model year with a required fuel economy level calculated using the manufacturer's actual production levels and the targets for each footprint of the vehicles that it produces.

The agency analyzed seven regulatory alternatives, one of which maximizes net benefits within the limits of available information and was known at the time as the "optimized standards." The optimized standards were set at levels, such that, considering all of the manufacturers together, no other alternative is estimated to produce greater net benefits to society. Upon a considered analysis of all information available, including all information submitted to NHTSA in comments, the agency adopted the "optimized standard" alternative as the final standards for MY 2011.[544] By limiting the standards to levels that can be achieved using technologies each of which are estimated to provide benefits that at least equal its costs, the net benefit maximization approach helped, at the time, to assure the marketability of the manufacturers' vehicles and thus economic practicability of the standards, for the reasons discussed extensively in that final rule.

The following levels were projected for what the industry-wide level of average fuel economy will be for passenger cars and for light trucks if each manufacturer produced its expected mix of automobiles and just met its obligations under the "optimized" standards.

	Passenger cars mpg	Light trucks mpg
MY 2011	30.2	24.1

The combined industry-wide average fuel economy (in miles per gallon, or mpg) levels for both cars and light trucks, if each manufacturer just met its obligations under the "optimized" standards, were projected as follows:

	Combined mpg	mpg increase over prior year
MY 2011	27.3	2.0

In addition, per EISA, each manufacturer's domestic passenger fleet is required in MY 2011 to achieve 27.5 mpg or 92 percent of the CAFE of the industry-wide combined fleet of domestic and non-domestic passenger cars[545] for that model year, whichever is higher. This requirement resulted in the following projected alternative minimum standard (not attribute-based) for domestic passenger cars:

	Domestic passenger cars mpg
MY 2011	27.8

ii. Credits

NHTSA also adopted a new part 536 on use of "credits" earned for exceeding applicable CAFE standards. Part 536 implements the provisions in EISA authorizing NHTSA to establish by regulation a credit trading program and directing it to establish by regulation a credit transfer program.[546] Since its enactment, EPCA has permitted manufacturers to earn credits for exceeding the standards and to apply those credits to compliance obligations

[543] The statement can be found at *http://www.dot.gov/affairs/dot0109.htm* (last accessed March 1, 2010).

[544] The agency notes, for NEPA purposes, that the "optimized standard" alternative adopted as the final standards corresponds to the "Optimized Mid-2" scenario described in Section 2.2.2 of the FEIS.

[545] Those numbers set out several paragraphs above.

[546] Congress required that DOT establish a credit "transferring" regulation, to allow individual manufacturers to move credits from one of their fleets to another (*e.g.,* using a credit earned for exceeding the light truck standard for compliance with the domestic passenger car standard). Congress allowed DOT to establish a credit "trading" regulation, so that credits may be bought and sold between manufacturers and other parties.

in years other than the model year in which it was earned. EISA extended the "carry-forward" period to five model years, and left the "carry-back" period at three model years. Under part 536, credit holders (including, but not limited to, manufacturers) will have credit accounts with NHTSA, and will be able to hold credits, apply them to compliance with CAFE standards, transfer them to another "compliance category" for application to compliance there, or trade them. A credit may also be cancelled before its expiry date, if the credit holder so chooses. Traded and transferred credits will be subject to an "adjustment factor" to ensure total oil savings are preserved, as required by EISA. EISA also prohibits credits earned before MY 2011 from being transferred, so NHTSA has developed several regulatory restrictions on trading and transferring to facilitate Congress' intent in this regard.

2. Energy Policy and Conservation Act, as Amended by the Energy Independence and Security Act

NHTSA establishes CAFE standards for passenger cars and light trucks for each model year under EPCA, as amended by EISA. EPCA mandates a motor vehicle fuel economy regulatory program to meet the various facets of the need to conserve energy, including ones having environmental and foreign policy implications. EPCA allocates the responsibility for implementing the program between NHTSA and EPA as follows: NHTSA sets CAFE standards for passenger cars and light trucks; EPA establishes the procedures for testing, tests vehicles, collects and analyzes manufacturers' data, and calculates the average fuel economy of each manufacturer's passenger cars and light trucks; and NHTSA enforces the standards based on EPA's calculations.

a. Standard Setting

We have summarized below the most important aspects of standard setting under EPCA, as amended by EISA.

For each future model year, EPCA requires that NHTSA establish standards at "the maximum feasible average fuel economy level that it decides the manufacturers can achieve in that model year," based on the agency's consideration of four statutory factors: Technological feasibility, economic practicability, the effect of other standards of the Government on fuel economy, and the need of the nation to conserve energy. EPCA does not define these terms or specify what weight to give each concern in balancing them; thus, NHTSA defines them and determines the appropriate weighting based on the circumstances in each CAFE standard rulemaking.[547]

For MYs 2011–2020, EPCA further requires that separate standards for passenger cars and for light trucks be set at levels high enough to ensure that the CAFE of the industry-wide combined fleet of new passenger cars and light trucks reaches at least 35 mpg not later than MY 2020.

i. Factors That Must Be Considered in Deciding the Appropriate Stringency of CAFE Standards

(1) Technological Feasibility

"Technological feasibility" refers to whether a particular method of improving fuel economy can be available for commercial application in the model year for which a standard is being established. Thus, the agency is not limited in determining the level of new standards to technology that is already being commercially applied at the time of the rulemaking. NHTSA has historically considered all types of technologies that improve real-world fuel economy, except those whose effects are not reflected in fuel economy testing. Principal among them are technologies that improve air conditioner efficiency because the air conditioners are not turned on during testing under existing test procedures.

(2) Economic Practicability

"Economic practicability" refers to whether a standard is one "within the financial capability of the industry, but not so stringent as to" lead to "adverse economic consequences, such as a significant loss of jobs or the unreasonable elimination of consumer choice."[548] This factor is especially important in the context of current events, where the automobile industry is facing significantly adverse economic conditions, as well as significant loss of jobs. In an attempt to ensure the economic practicability of attribute-based standards, NHTSA considers a variety of factors, including the annual rate at which manufacturers can increase the percentage of their fleets that employ a particular type of fuel-saving technology, and cost to consumers. Consumer acceptability is also an element of economic practicability, one which is particularly difficult to gauge during times of frequently-changing fuel prices. NHTSA believes this approach is reasonable for the MY 2012–2016 standards in view of the facts before it at this time.

At the same time, the law does not preclude a CAFE standard that poses considerable challenges to any individual manufacturer. The Conference Report for EPCA, as enacted in 1975, makes clear, and the case law affirms, "a determination of maximum feasible average fuel economy should not be keyed to the single manufacturer which might have the most difficulty achieving a given level of average fuel economy."[549] Instead, NHTSA is compelled "to weigh the benefits to the nation of a higher fuel economy standard against the difficulties of individual automobile manufacturers." *Id.* The law permits CAFE standards exceeding the projected capability of any particular manufacturer as long as the standard is economically practicable for the industry as a whole. Thus, while a particular CAFE standard may pose difficulties for one manufacturer, it may also present opportunities for another. The CAFE program is not necessarily intended to maintain the competitive positioning of each particular company. Rather, it is intended to enhance fuel economy of the vehicle fleet on American roads, while protecting motor vehicle safety and being mindful of the risk of harm to the overall United States economy.

(3) The Effect of Other Motor Vehicle Standards of the Government on Fuel Economy

"The effect of other motor vehicle standards of the Government on fuel economy," involves an analysis of the effects of compliance with emission,[550] safety, noise, or damageability standards on fuel economy capability and thus on average fuel economy. In previous CAFE rulemakings, the agency has said that pursuant to this provision, it considers the adverse effects of other motor vehicle standards on fuel economy. It said so because, from the CAFE program's earliest years[551] until present, the effects of such compliance on fuel economy capability over the history of the CAFE program have been negative ones. For example, safety standards that have the effect of increasing vehicle weight lower vehicle

[547] *See Center for Biological Diversity* v. *NHTSA,* 538 F.3d. 1172, 1195 (9th Cir. 2008) ("The EPCA clearly requires the agency to consider these four factors, but it gives NHTSA discretion to decide how to balance the statutory factors—as long as NHTSA's balancing does not undermine the fundamental purpose of the EPCA: energy conservation.")

[548] 67 FR 77015, 77021 (Dec. 16, 2002).

[549] *CEI–I,* 793 F.2d 1322, 1352 (DC Cir. 1986).

[550] In the case of emission standards, this includes standards adopted by the Federal government and can include standards adopted by the States as well, since in certain circumstances the Clean Air Act allows States to adopt and enforce State standards different from the Federal ones.

[551] 42 FR 63184, 63188 (Dec. 15, 1977). *See* also 42 FR 33534, 33537 (Jun. 30, 1977).

fuel economy capability and thus decrease the level of average fuel economy that the agency can determine to be feasible.

NHTSA also recognizes that in some cases the effect of other motor vehicle standards of the Government on fuel economy may be neutral or positive. For example, to the extent the GHG standards set by EPA and California result in increases in fuel economy, they would do so almost exclusively as a result of inducing manufacturers to install the same types of technologies used by manufacturers in complying with the CAFE standards. The primary exception would involve lower-GHG-producing air conditioners. The agency considered EPA's standards and the harmonization benefits of the National Program in developing its own standards.

(4) The Need of the United States To Conserve Energy

"The need of the United States to conserve energy" means "the consumer cost, national balance of payments, environmental, and foreign policy implications of our need for large quantities of petroleum, especially imported petroleum." [552] Environmental implications principally include reductions in emissions of criteria pollutants and carbon dioxide. Prime examples of foreign policy implications are energy independence and security concerns.

(a) Fuel Prices and the Value of Saving Fuel

Projected future fuel prices are a critical input into the preliminary economic analysis of alternative CAFE standards, because they determine the value of fuel savings both to new vehicle buyers and to society. In this rule, NHTSA relies on fuel price projections from the U.S. Energy Information Administration's (EIA) Annual Energy Outlook (AEO) for this analysis. Federal government agencies generally use EIA's projections in their assessments of future energy-related policies.

(b) Petroleum Consumption and Import Externalities

U.S. consumption and imports of petroleum products impose costs on the domestic economy that are not reflected in the market price for crude petroleum, or in the prices paid by consumers of petroleum products such as gasoline. These costs include (1) higher prices for petroleum products resulting from the effect of U.S. oil import demand on the world oil price; (2) the risk of disruptions to the U.S. economy caused by sudden reductions in the supply of imported oil to the U.S.; and (3) expenses for maintaining a U.S. military presence to secure imported oil supplies from unstable regions, and for maintaining the strategic petroleum reserve (SPR) to provide a response option should a disruption in commercial oil supplies threaten the U.S. economy, to allow the United States to meet part of its International Energy Agency obligation to maintain emergency oil stocks, and to provide a national defense fuel reserve. Higher U.S. imports of crude oil or refined petroleum products increase the magnitude of these external economic costs, thus increasing the true economic cost of supplying transportation fuels above the resource costs of producing them. Conversely, reducing U.S. imports of crude petroleum or refined fuels or reducing fuel consumption can reduce these external costs.

(c) Air Pollutant Emissions

While reductions in domestic fuel refining and distribution that result from lower fuel consumption will reduce U.S. emissions of various pollutants, additional vehicle use associated with the rebound effect [553] from higher fuel economy will increase emissions of these pollutants. Thus, the net effect of stricter CAFE standards on emissions of each pollutant depends on the relative magnitudes of its reduced emissions in fuel refining and distribution, and increases in its emissions from vehicle use.

Fuel savings from stricter CAFE standards also result in lower emissions of CO_2, the main greenhouse gas emitted as a result of refining, distribution, and use of transportation fuels. Lower fuel consumption reduces carbon dioxide emissions directly, because the primary source of transportation-related CO_2 emissions is fuel combustion in internal combustion engines.

NHTSA has considered environmental issues, both within the context of EPCA and the National Environmental Policy Act, in making decisions about the setting of standards from the earliest days of the CAFE program. As courts of appeal have noted in three decisions stretching over the last 20 years,[554] NHTSA defined the "need of the Nation to conserve energy" in the late 1970s as including "the consumer cost, national balance of payments, environmental, and foreign policy implications of our need for large quantities of petroleum, especially imported petroleum." [555] Pursuant to that view, NHTSA declined in the past to include diesel engines in determining the appropriate level of standards for passenger cars and for light trucks because particulate emissions from diesels were then both a source of concern and unregulated.[556] In 1988, NHTSA included climate change concepts in its CAFE notices and prepared its first environmental assessment addressing that subject.[557] It cited concerns about climate change as one of its reasons for limiting the extent of its reduction of the CAFE standard for MY 1989 passenger cars.[558] Since then, NHTSA has considered the benefits of reducing tailpipe carbon dioxide emissions in its fuel economy rulemakings pursuant to the statutory requirement to consider the nation's need to conserve energy by reducing fuel consumption.

ii. Other Factors Considered by NHTSA

NHTSA considers the potential for adverse safety consequences when in establishing CAFE standards. This practice is recognized approvingly in case law.[559] Under the universal or "flat" CAFE standards that NHTSA was previously authorized to establish, manufacturers were encouraged to respond to higher standards by building smaller, less safe vehicles in order to "balance out" the larger, safer vehicles that the public generally preferred to

[552] 42 FR 63184, 63188 (1977).

[553] The "rebound effect" refers to the tendency of drivers to drive their vehicles more as the cost of doing so goes down, as when fuel economy improves.

[554] *Center for Auto Safety* v. *NHTSA,* 793 F.2d 1322, 1325 n. 12 (DC Cir. 1986); *Public Citizen* v. *NHTSA,* 848 F.2d 256, 262–3 n. 27 (DC Cir. 1988) (noting that "NHTSA itself has interpreted the factors it must consider in setting CAFE standards as including environmental effects"); and *Center for Biological Diversity* v. *NHTSA,* 538 F.3d 1172 (9th Cir. 2007).

[555] 42 FR 63184, 63188 (Dec. 15, 1977) (emphasis added).

[556] For example, the final rules establishing CAFE standards for MY 1981–84 passenger cars, 42 FR 33533, 33540–1 and 33551 (Jun. 30, 1977), and for MY 1983–85 light trucks, 45 FR 81593, 81597 (Dec. 11, 1980).

[557] 53 FR 33080, 33096 (Aug. 29, 1988).

[558] 53 FR 39275, 39302 (Oct. 6, 1988).

[559] *See, e.g., Center for Auto Safety* v. *NHTSA* (CAS), 793 F. 2d 1322 (DC Cir. 1986) (Administrator's consideration of market demand as component of economic practicability found to be reasonable); Public Citizen 848 F.2d 256 (Congress established broad guidelines in the fuel economy statute; agency's decision to set lower standard was a reasonable accommodation of conflicting policies). As the United States Court of Appeals pointed out in upholding NHTSA's exercise of judgment in setting the 1987–1989 passenger car standards, "NHTSA has always examined the safety consequences of the CAFE standards in its overall consideration of relevant factors since its earliest rulemaking under the CAFE program." *Competitive Enterprise Institute* v. *NHTSA* (CEI I), 901 F.2d 107, 120 at n.11 (DC Cir. 1990).

buy, which resulted in a higher mass differential between the smallest and the largest vehicles, with a correspondingly greater risk to safety. Under the attribute-based standards being proposed today, that risk is reduced because building smaller vehicles would tend to raise a manufacturer's overall CAFE obligation, rather than only raising its fleet average CAFE, and because all vehicles are required to continue improving their fuel economy.

In addition, the agency considers consumer demand in establishing new standards and in assessing whether already established standards remained feasible. In the 1980s, the agency relied in part on the unexpected drop in fuel prices and the resulting unexpected failure of consumer demand for small cars to develop in explaining the need to reduce CAFE standards for a several year period in order to give manufacturers time to develop alternative technology-based strategies for improving fuel economy.

iii. Factors That NHTSA Is Statutorily Prohibited From Considering in Setting Standards

EPCA provides that in determining the level at which it should set CAFE standards for a particular model year, NHTSA may not consider the ability of manufacturers to take advantage of several EPCA provisions that facilitate compliance with the CAFE standards and thereby reduce the costs of compliance.[560] As noted below, manufacturers can earn compliance credits by exceeding the CAFE standards and then use those credits to achieve compliance in years in which their measured average fuel economy falls below the standards. Manufacturers can also increase their CAFE levels through MY 2019 by producing alternative fuel vehicles. EPCA provides an incentive for producing these vehicles by specifying that their fuel economy is to be determined using a special calculation procedure that results in those vehicles being assigned a high fuel economy level.

iv. Weighing and Balancing of Factors

NHTSA has broad discretion in balancing the above factors in determining the average fuel economy level that the manufacturers can achieve. Congress "specifically delegated the process of setting * * * fuel economy standards with *broad* guidelines concerning the factors that the agency must consider. The breadth of those guidelines, the absence of any statutorily prescribed formula for balancing the factors, the fact that the relative weight to be given to the various factors may change from rulemaking to rulemaking as the underlying facts change, and the fact that the factors may often be conflicting with respect to whether they militate toward higher or lower standards give NHTSA discretion to decide what weight to give each of the competing policies and concerns and then determine how to balance them as long as NHTSA's balancing does not undermine the fundamental purpose of the EPCA: Energy conservation, and as long as that balancing reasonably accommodates 'conflicting policies that were committed to the agency's care by the statute.' "

Thus, EPCA does not mandate that any particular number be adopted when NHTSA determines the level of CAFE standards. Rather, any number within a zone of reasonableness may be, in NHTSA's assessment, the level of stringency that manufacturers can achieve. *See, e.g., Hercules Inc.* v. *EPA,* 598 F. 2d 91, 106 (DC Cir. 1978) ("In reviewing a numerical standard we must ask whether the agency's numbers are within a zone of reasonableness, not whether its numbers are precisely right").

v. Other Requirements Related to Standard Setting

The standards for passenger cars and those for light trucks must increase ratably each year. This statutory requirement is interpreted, in combination with the requirement to set the standards for each model year at the level determined to be the maximum feasible level that manufacturers can achieve for that model year, to mean that the annual increases should not be disproportionately large or small in relation to each other.

The standards for passenger cars and light trucks must be based on one or more vehicle attributes, like size or weight, that correlate with fuel economy and must be expressed in terms of a mathematical function. Fuel economy targets are set for individual vehicles and increase as the attribute decreases and vice versa. For example, size-based (*i.e.,* size-indexed) standards assign higher fuel economy targets to smaller (and generally, but not necessarily, lighter) vehicles and lower ones to larger (and generally, but not necessarily, heavier) vehicles. The fleet-wide average fuel economy that a particular manufacturer is required to achieve depends on the size mix of its fleet, *i.e.,* the proportion of the fleet that is small-, medium- or large-sized.

This approach can be used to require virtually all manufacturers to increase significantly the fuel economy of a broad range of both passenger cars and light trucks, *i.e.,* the manufacturer must improve the fuel economy of all the vehicles in its fleet. Further, this approach can do so without creating an incentive for manufacturers to make small vehicles smaller or large vehicles larger, with attendant implications for safety.

b. Test Procedures for Measuring Fuel Economy

EPCA provides EPA with the responsibility for establishing CAFE test procedures. Current test procedures measure the effects of many fuel saving technologies. The principal exception is improvements in air conditioning efficiency. By statutory law in the case of passenger cars and by administrative regulation in the case of light trucks, air conditioners are not turned on during fuel economy testing.

The fuel economy test procedures for light trucks could be amended through rulemaking to provide for air conditioner operation during testing and to take other steps for improving the accuracy and representativeness of fuel economy measurements. NHTSA sought comment in the NPRM regarding implementing such amendments beginning in MY 2017 and also on the more immediate interim alternative step of providing CAFE program credits under the authority of 49 U.S.C. 32904(c) for light trucks equipped with relatively efficient air conditioners for MYs 2012–2016, but decided against finalizing either option for purposes of this final rule, choosing to defer the matter for now. Modernizing the passenger car test procedures, or even providing similar credits, would not be possible under EPCA as currently written.

c. Enforcement and Compliance Flexibility

EPA is responsible for measuring automobile manufacturers' CAFE so that NHTSA can determine compliance with the CAFE standards. When NHTSA finds that a manufacturer is not in compliance, it notifies the manufacturer. Surplus credits generated from the five previous years can be used to make up the deficit. The amount of credit earned is determined by multiplying the number of tenths of a mpg by which a manufacturer exceeds a standard for a particular category of automobiles by the total volume of automobiles of that category manufactured by the manufacturer for a given model year. If there are no (or not

[560] 49 U.S.C. 32902(h).

enough) credits available, then the manufacturer can either pay the fine, or submit a carry back plan to NHTSA. A carry back plan describes what the manufacturer plans to do in the following three model years to earn enough credits to make up for the deficit. NHTSA must examine and determine whether to approve the plan.

In the event that a manufacturer does not comply with a CAFE standard, even after the consideration of credits, EPCA provides for the assessing of civil penalties, unless, as provided below, the manufacturer has earned credits for exceeding a standard in an earlier year or expects to earn credits in a later year.[561] The Act specifies a precise formula for determining the amount of civil penalties for such a noncompliance. The penalty, as adjusted for inflation by law, is $5.50 for each tenth of a mpg that a manufacturer's average fuel economy falls short of the standard for a given model year multiplied by the total volume of those vehicles in the affected fleet (*i.e.,* import or domestic passenger car, or light truck), manufactured for that model year. The amount of the penalty may not be reduced except under the unusual or extreme circumstances specified in the statute.

Unlike the National Traffic and Motor Vehicle Safety Act, EPCA does not provide for recall and remedy in the event of a noncompliance. The presence of recall and remedy provisions[562] in the Safety Act and their absence in EPCA is believed to arise from the difference in the application of the safety standards and CAFE standards. A safety standard applies to individual vehicles; that is, each vehicle must possess the requisite equipment or feature that must provide the requisite type and level of performance. If a vehicle does not, it is noncompliant. Typically, a vehicle does not entirely lack an item or equipment or feature. Instead, the equipment or features fails to perform adequately. Recalling the vehicle to repair or replace the noncompliant equipment or feature can usually be readily accomplished.

In contrast, a CAFE standard applies to a manufacturer's entire fleet for a model year. It does not require that a particular individual vehicle be equipped with any particular equipment or feature or meet a particular level of fuel economy. It does require that the manufacturer's fleet, as a whole, comply. Further, although under the attribute-based approach to setting CAFE standards fuel economy targets are established for individual vehicles based on their footprints, the vehicles are not required to comply with those targets. However, as a practical matter, if a manufacturer chooses to design some vehicles that fall below their target levels of fuel economy, it will need to design other vehicles that exceed their targets if the manufacturer's overall fleet average is to meet the applicable standard.

Thus, under EPCA, there is no such thing as a noncompliant vehicle, only a noncompliant fleet. No particular vehicle in a noncompliant fleet is any more, or less, noncompliant than any other vehicle in the fleet.

C. Development and Feasibility of the Final Standards

1. How was the baseline and reference vehicle fleet developed?

a. Why do the agencies establish a baseline and reference vehicle fleet?

As also discussed in Section II.B above, in order to determine what levels of stringency are feasible in future model years, the agencies must project what vehicles will exist in those model years, and then evaluate what technologies can feasibly be applied to those vehicles in order to raise their fuel economy and lower their CO_2 emissions. The agencies therefore established a baseline vehicle fleet representing those vehicles, based on the best available transparent information. Each agency then developed a separate reference fleet, accounting (via their respective analytical models) for the effect that the MY 2011 CAFE standards have on the baseline fleet. This reference fleet is then used for comparisons of technologies' incremental cost and effectiveness, as well as for other relevant comparisons in the rule.

Because NHTSA and EPA have different established practices, the agencies' rulemaking documents (the **Federal Register** notice, Joint Technical Support Document, agency-specific Regulatory Impact Analyses, and NHTSA Environmental Impact Analysis) have some differences in terminology. In connection with its first-ever GHG emissions rule under the CAA, EPA has used the term "baseline fleet" to refer to the MY 2008 fleet (*i.e.,* from EPA certification and fuel economy data for MY 2008) prior to adjustment to reflect projected shifts in market composition. NHTSA, as in recent CAFE rulemakings, refers to the resultant market forecast, as specified in CAFE model input files (and corresponding input files for EPA's OMEGA model), as the "baseline" fleet. EPA refers to this fleet as the "reference fleet." NHTSA refers to the "no action" standards identified in the EIS (that is, the MY 2011 standards carried forward through MY 2016) as defining the "baseline" scenario, and refers to the fleet to which technologies have been added in response to these standards as the "adjusted baseline" fleet.[563] EPA refers to this as the "final reference fleet." These differences in terminology are summarized in the following table:

Fleet description	EPA terminology	NHTSA terminology
MY 2008 Fleet with MY 2008 Production Volumes	Baseline	MY 2008 Fleet
MY 2008 Fleet Adjusted to Reflect Projected Market Shifts	Reference Fleet	Baseline [Market Forecast]
MY 2008 Fleet Adjusted to Reflected Projected Market Shifts and Response to MY 2011 CAFE Standards.	[Final] Reference Fleet	Adjusted Baseline

The agencies have retained this mixed terminology in order to facilitate comparison to past rulemakings. In general, EPA's RIA and the Joint TSD apply EPA's nomenclature, NHTSA's RIA and EIS apply NHTSA's nomenclature, and the joint **Federal Register** notice uses EPA's nomenclature when focusing on GHG emissions standards, and NHTSA's nomenclature when focusing on CAFE standards.

b. What data did the agencies use to construct the baseline, and how did they do so?

As explained in the Technical Support Document (TSD) prepared

[561] EPCA does not provide authority for seeking to enjoin violations of the CAFE standards.

[562] 49 U.S.C. 30120, Remedies for defects and noncompliance.

[563] Some manufacturers' baseline fleets (as reflected in the agencies' market forecast) do not, without applying additional technology and/or CAFE credits, show compliance with the baseline standards.

jointly by NHTSA and EPA, both agencies used a baseline vehicle fleet constructed beginning with EPA fuel economy certification data for the 2008 model year, the most recent model year for which final data is currently available from manufacturers. These data were used as the source for MY 2008 production volumes and some vehicle engineering characteristics, such as fuel economy ratings, engine sizes, numbers of cylinders, and transmission types.

Some information important for analyzing new CAFE standards is not contained in the EPA fuel economy certification data. EPA staff estimated vehicle wheelbase and track widths using data from Motortrend.com and Edmunds.com. This information is necessary for estimating vehicle footprint, which is required for the analysis of footprint-based standards. Considerable additional information regarding vehicle engineering characteristics is also important for estimating the potential to add new technologies in response to new CAFE standards. In general, such information helps to avoid "adding" technologies to vehicles that already have the same or a more advanced technology. Examples include valvetrain configuration (*e.g.,* OHV, SOHC, DOHC), presence of cylinder deactivation, and fuel delivery (*e.g.,* MPFI, SIDI). To the extent that such engineering characteristics were not available in certification data, EPA staff relied on data published by Ward's Automotive, supplementing this with information from Internet sites such as Motortrend.com and Edmunds.com. NHTSA staff also added some more detailed engineering characteristics (*e.g.,* type of variable valve timing) using data available from ALLDATA® Online. Combined with the certification data, all of this information yielded the MY 2008 baseline vehicle fleet.

After the baseline was created the next step was to project the sales volumes for 2011–2016 model years. EPA used projected car and truck volumes for this period from Energy Information Administration's (EIA's) 2009 Annual Energy Outlook (AEO).[564] However, AEO projects sales only at the car and truck level, not at the manufacturer and model-specific level, which are needed in order to estimate the effects new standards will have on individual manufacturers. Therefore, EPA purchased data from CSM–Worldwide and used their projections of the number of vehicles of each type predicted to be sold by manufacturers in 2011–2015.[565] This provided the year-by-year percentages of cars and trucks sold by each manufacturer as well as the percentages of each vehicle segment. The changes between company market share and industry market segments were most significant from 2011–2014, while for 2014–2015 the changes were relatively small. Noting this, and lacking a credible forecast of company and segment shares after 2015, the agencies assumed 2016 market share and market segments to be the same as for 2015. Using these percentages normalized to the AEO projected volumes then provided the manufacturer-specific market share and model-specific sales for model years 2011–2016.

The processes for constructing the MY 2008 baseline vehicle fleet and subsequently adjusting sales volumes to construct the MY 2011–2016 baseline vehicle fleet are presented in detail in Chapter 1 of the Joint Technical Support Document accompanying today's final rule.

c. How is this different from NHTSA's historical approach and why is this approach preferable?

As discussed above in Section II.B.4, NHTSA has historically based its analysis of potential new CAFE standards on detailed product plans the agency has requested from manufacturers planning to produce light-duty vehicles for sale in the United States. In contrast, the current market forecast is based primarily on information sources which are all either in the public domain or available commercially. There are advantages to this approach, namely transparency and the potential to reduce some errors due to manufacturers' misunderstanding of NHTSA's request for information. There are also disadvantages, namely that the current market forecast does not represent certain changes likely to occur in the future vehicle fleet as opposed to the MY 2008 vehicle fleet, such as vehicles being discontinued and newly introduced. On balance, however, the agencies have carefully considered these advantages and disadvantages of using a market forecast derived from public and commercial sources rather than from manufacturers' product plans, and conclude that the advantages outweigh the disadvantages.

Although manufacturers did not comment on the agency's proposal to rely on public and commercial information rather than manufacturers' confidential product plans when developing a market forecast, those organizations that did comment on this issue supported this change. The California Air Resources Board (CARB) and Center for Biological Diversity (CBD) both commended the resultant increase in transparency. CARB further indicated that the use of public and commercial information should produce a better forecast. On the other hand, as discussed above in Section I, CBD and the Northeast States for Coordinated Air Use Management (NESCAUM) both raised concerns regarding the resultant omission of some new vehicle models, and the inclusion of some vehicles to be discontinued, while CARB suggested that the impact of these inaccuracies should be minor.

As discussed above in Section II.B.4, while a baseline developed using publicly and commercially available sources has both advantages and disadvantages relative to a baseline developed using manufacturers' product plans, NHTSA has concluded for today's rule that the advantages outweigh the disadvantages. Today's approach is much more transparent than the agency's past approach of relying on product plans, and as discussed in Section II.B.4, any inaccuracies related to new or discontinued vehicle models should have only a minor impact on the agency's analysis.

For subsequent rulemakings, NHTSA remains hopeful that manufacturers will agree to make public their plans for model years that are very near, so that this information could be incorporated into analysis available for public review and comment. In any event, because NHTSA is releasing market inputs used in the agency's analysis of this final rule, all interested parties can review these inputs fully, as intended in adopting the transparent approach. More information on the advantages and disadvantages of the current approach and the agencies' decision to follow it is available in Section II.B.4.

d. How is this baseline different quantitatively from the baseline that NHTSA used for the MY 2011 (March 2009) final rule?

As discussed above, the current baseline was developed from adjusted MY 2008 compliance data and covers MYs 2011–2016, while the baseline that NHTSA used for the MY 2011 CAFE rule was developed from confidential

[564] Available at *http://www.eia.doe.gov/oiaf/aeo/index.html* (last accessed March 15, 2010). Specifically, while the total volume of both cars and trucks was obtained from AEO 2010, the car-truck split was obtained from AEO 2009. The agencies have also used fuel price forecasts from AEO 2010. Both agencies regard AEO a credible source not only of such forecasts, but also of many underlying forecasts, including forecasts of the size of the future light vehicle market.

[565] EPA also considered other sources of similar information, such as J.D. Powers, and concluded that CSM was more appropriate for purposes of this rulemaking analysis.

manufacturer product plans for MY 2011. This section describes, for the reader's comparison, some of the differences between the current baseline and the MY 2011 CAFE rule baseline. This comparison provides a basis for understanding general characteristics and measures of the difference, in this case, between using publicly (and commercially) available sources and using manufacturers' confidential product plans. The current baseline, while developed using the same methods as the baseline used for MYs 2012–2016 NPRM, reflects updates to the underlying commercially-available forecast of manufacturer and market segment shares of the future light vehicle market. These changes are discussed above in Section II.B.

Estimated vehicle sales:

The sales forecasts, based on the Energy Information Administration's (EIA's) Annual Energy Outlook 2010 (AEO 2010), used in the current baseline indicate that the total number of light vehicles expected to be sold during MYs 2011–2015 is 77 million, or about 15.4 million vehicles annually.[566] NHTSA's MY 2011 final rule forecast, based on AEO 2008, of the total number of light vehicles likely to be sold during MY 2011 through MY 2015 was 83 million, or about 16.6 million vehicles annually. Light trucks are expected to make up 41 percent of the MY 2011 baseline market forecast in the current baseline, compared to 42 percent of the baseline market forecast in the MY 2011 final rule. These changes in both the overall size of the light vehicle market and the relative market shares of passenger cars and light trucks reflect changes in the economic forecast underlying AEO, and changes in AEO's forecast of future fuel prices.

The figures below attempt to demonstrate graphically the difference between the variation of fuel economy with footprint for passenger cars under the current baseline and MY 2011 final rule, and for light trucks under the current baseline and MY 2011 final rule, respectively. Figures IV.C.1–1 and 1–2 show the variation of fuel economy with footprint for passenger car models in the current baseline and in the MY 2011 final rule, while Figures IV.C.1–3 and 1–4 show the variation of fuel economy with footprint for light truck models in the current baseline and in the MY 2011 final rule. However, it is difficult to draw meaningful conclusions by comparing figures from the current baseline with those of the MY 2011 final rule. In the current baseline the number of make/models, and their associated fuel economy and footprint, are fixed and do not vary over time—this is why the number of data points in the current baseline figures appears smaller as compared to the number of data points in the MY 2011 final rule baseline. In contrast, the baseline fleet used in the MY 2011 final rule varies over time as vehicles (with different fuel economy and footprint characteristics) are added to and dropped from the product mix.

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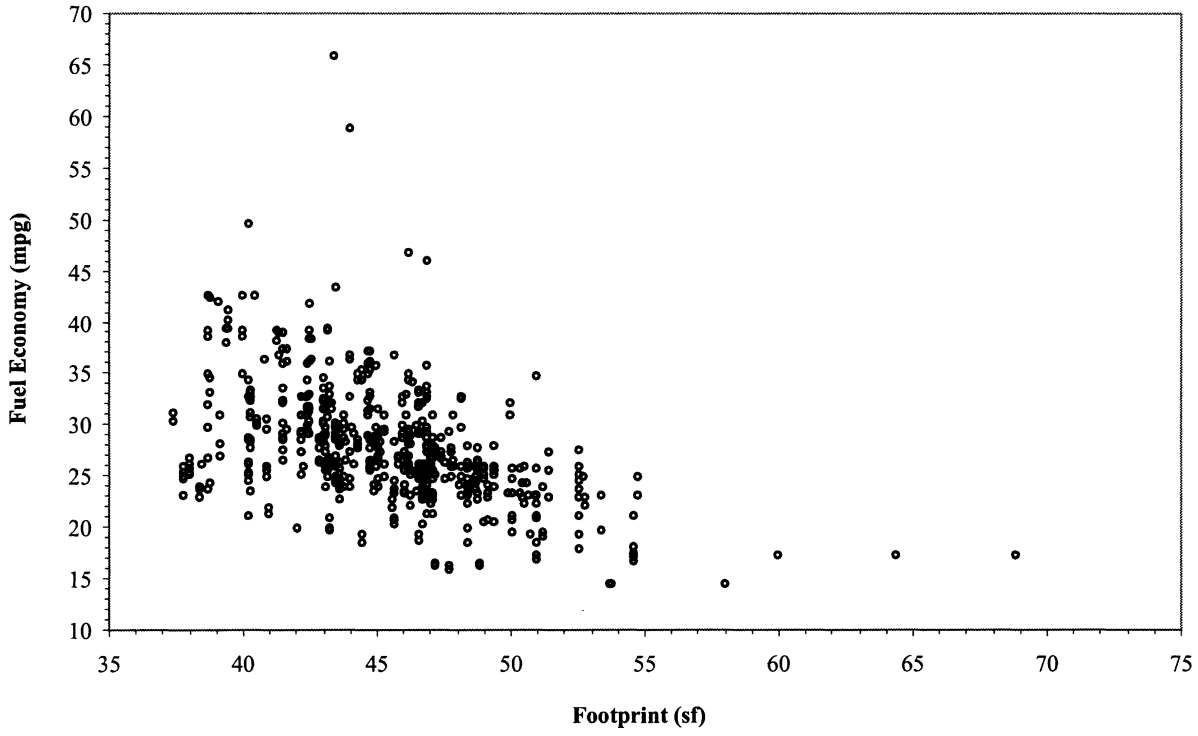
Figure IV.C.1-1 Planned Fuel Economy vs. Footprint, Passenger Cars in Current Baseline



[566] *Please see* Section II.B above and Chapter 1 of the Joint TSD for more discussion on the agencies' use of AEO 2010 to determine the sales forecasts for light vehicles during the model years covered by the rulemaking, as well as the memo available at Docket No. NHTSA–2009–059–0222.

Figure IV.C.1-2 Planned Fuel Economy vs. Footprint, Passenger Cars in MY 2011 Final Rule

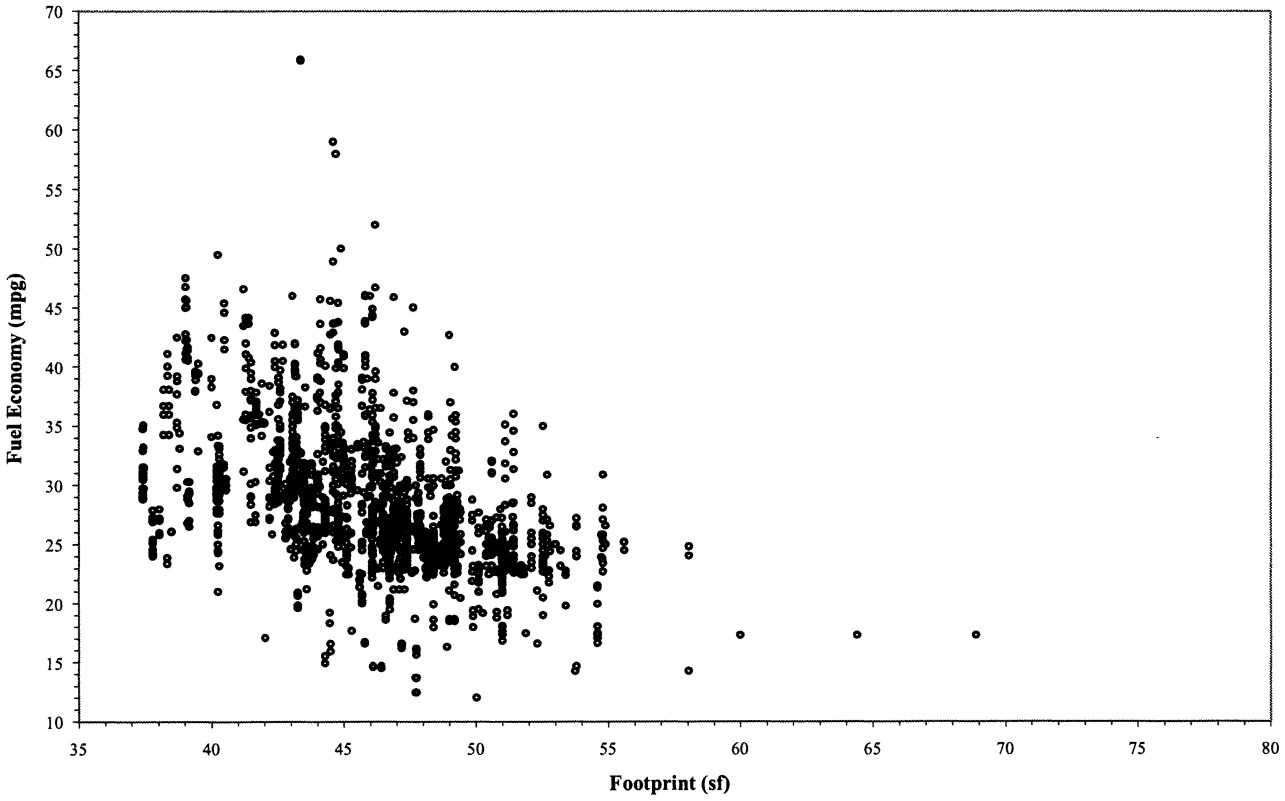


Figure IV.C.1-3 Planned Fuel Economy vs. Footprint, Light Trucks in Current Baseline

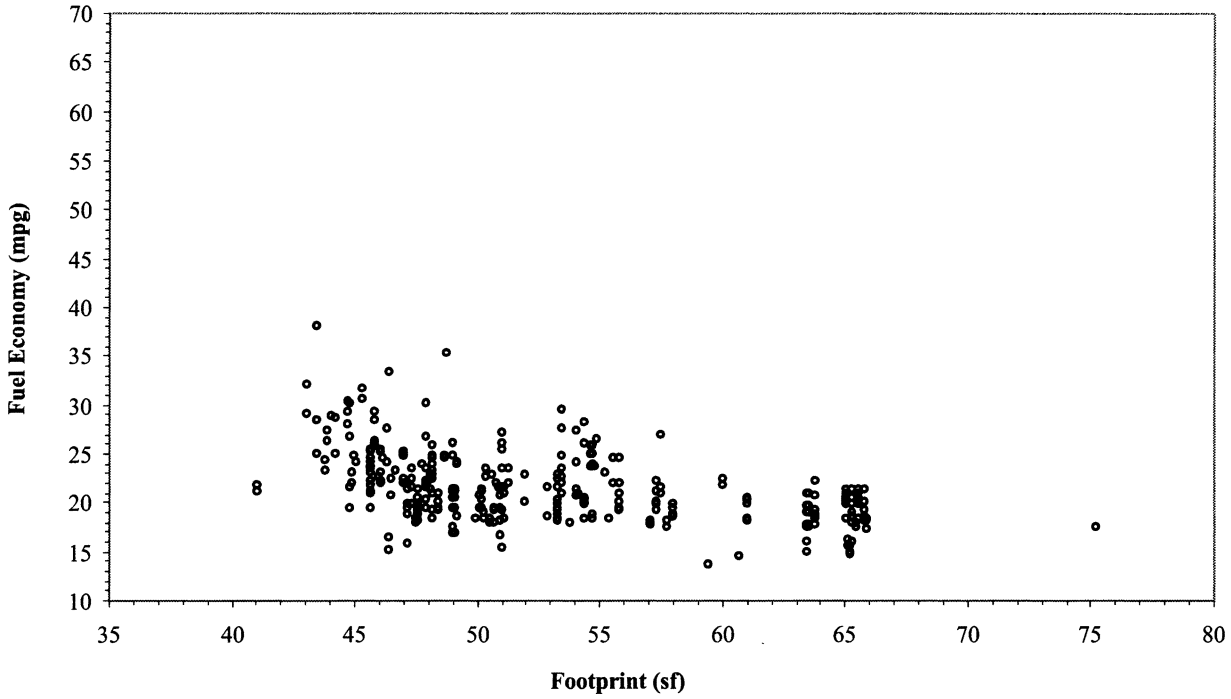
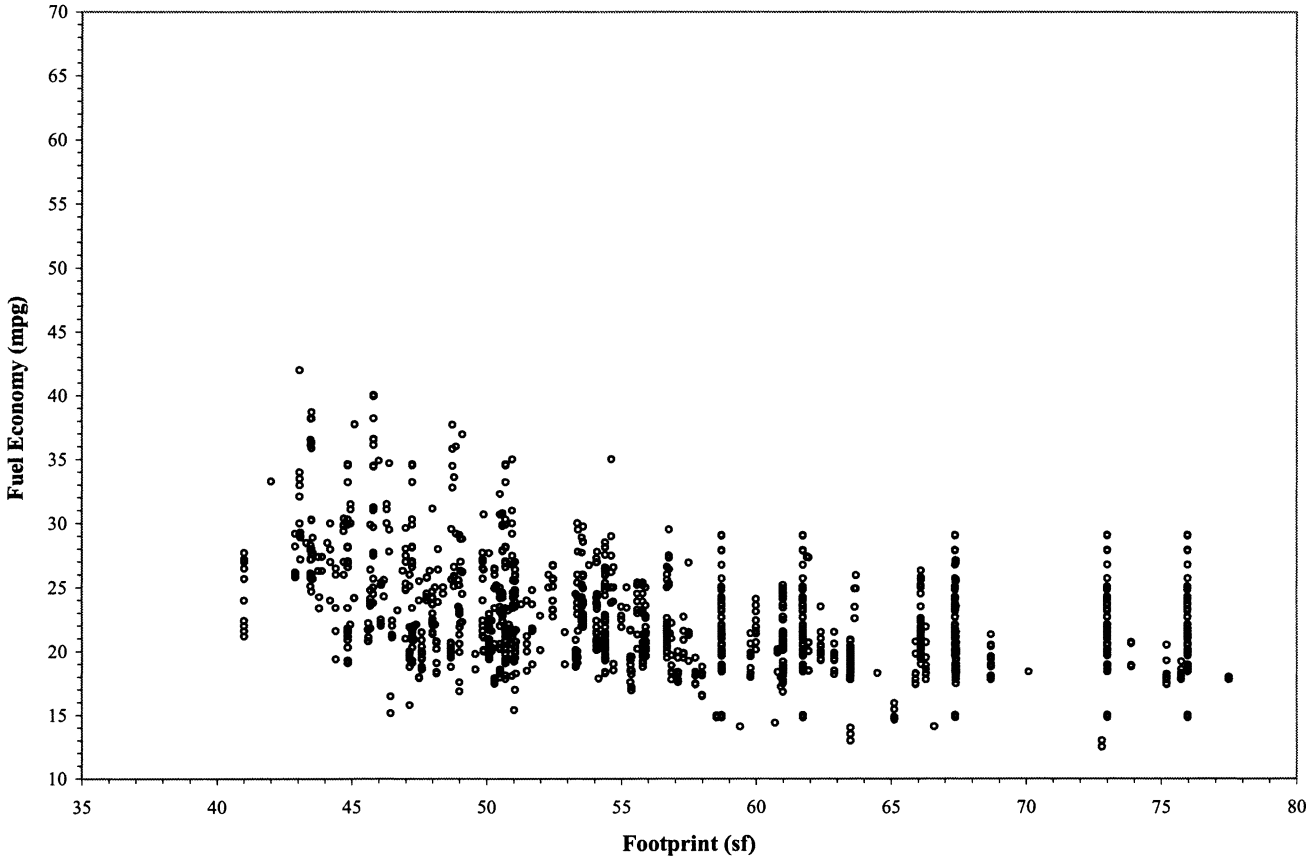


Figure IV.C.1-4 Planned Fuel Economy vs. Footprint, Light Trucks in MY 2011 Final Rule



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Estimated manufacturer market shares:

NHTSA's expectations regarding manufacturers' market shares (the basis for which is discussed below) have also changed since the MY 2011 final rule, given that the agency is relying on different sources of material for these assumptions as discussed in Section II.B above and Chapter 1 of the Joint TSD. These changes are reflected below in Table IV.C.1–1, which shows the agency's sales forecasts for passenger cars and light trucks under the current baseline and the MY 2011 final rule.[567]

TABLE IV.C.1–1—SALES FORECASTS

[Production for U.S. sale in MY 2011, thousand units]

Manufacturer	Current baseline		MY 2011 Final rule	
	Passenger	Nonpassenger	Passenger	Nonpassenger
Chrysler	326	737	707	1,216
Ford	1,344	792	1,615	1,144
General Motors	1,249	1,347	1,700	1,844
Honda	851	585	1,250	470
Hyundai	382	46	655	221
Kia	306	88	.....	.....
Nissan	612	331	789	479
Toyota	1,356	888	1,405	1,094
Other Asian	664	246	441	191
European	833	396	724	190
Total	7,923	5,458	9,286	6,849

[567] As explained below, although NHTSA normalized each manufacturer's overall market share to produce a realistically-sized fleet, the product mix for each manufacturer that submitted product plans was preserved. The agency has reviewed manufacturers' product plans in detail, and understands that manufacturers do not sell the same mix of vehicles in every model year.

Dual-fueled vehicles:

Manufacturers have also, during and since MY 2008, indicated to the agency that they intend to sell more dual-fueled or flexible-fuel vehicles (FFVs) in MY 2011 than indicated in the current baseline of adjusted MY 2008 compliance data. FFVs create a potential market for alternatives to petroleum-based gasoline and diesel fuel. For purposes of determining compliance with CAFE standards, the fuel economy of a FFV is, subject to limitations, adjusted upward to account for this potential.[568] However, NHTSA is precluded from "taking credit" for the compliance flexibility by accounting for manufacturers' ability to earn and use credits in setting the level of the standards."[569] Some manufacturers plan to produce a considerably greater share of FFVs than can earn full credit under EPCA. The projected average FFV share of the market in MY 2011 is 7 percent for the current baseline, versus 17 percent for the MY 2011 final rule. NHTSA notes that in MY 2008 (the model year providing the vehicle models upon which today's market forecast is based), the three U.S.-based OEMs produced most of the FFVs offered for sale in the U.S., yet these OEMs account are projected to account for a smaller share of the future market in the forecast the agency has used to develop and analyze today's rule than in the forecast the agency used to develop and analyze the MY 2011 standards.

Estimated achieved fuel economy levels:

Because manufacturers' product plans also reflect simultaneous changes in fleet mix and other vehicle characteristics, the relationship between increased technology utilization and increased fuel economy cannot be isolated with any certainty. To do so would require an apples-to-apples "counterfactual" fleet of vehicles that are, except for technology and fuel economy, identical—for example, in terms of fleet mix and vehicle performance and utility. The current baseline market forecast shows industry-wide average fuel economy levels somewhat lower in MY 2011 than shown in the MY 2011 final rule and the MYs 2012–2016 NPRM. Under the current baseline, average fuel economy for MY 2011 is 26.4 mpg, versus 26.5 mpg under the baseline in the MY 2011 final rule, and 26.7 mpg under the baseline in the MYs 2012–2016 NPRM. The 0.3 mpg change relative to the MYs 2012–2016 baseline is the result of changes in manufacturer and market segment shares of the MY 2011 market.

These differences are shown in greater detail below in Table IV.C.1–2, which shows manufacturer-specific CAFE levels (not counting FFV credits that some manufacturers expect to earn) from the current baseline versus the MY 2011 final rule baseline (from manufacturers' 2008 product plans) for passenger cars and light trucks. Table IV.C.1–3 shows the combined averages of these planned CAFE levels in the respective baseline fleets. These tables demonstrate that, while the difference at the industry level is not so large, there are significant differences in CAFE at the manufacturer level between the current baseline and the MY 2011 final rule baseline. For example, while Volkswagen is essentially the same under both, Toyota and Nissan show increased combined CAFE levels under the current baseline (by 1.9 and 0.7 mpg respectively), while Chrysler, Ford, and GM show decreased combined CAFE levels under the current baseline (by 1.4, 1.1, and 0.8 mpg, respectively) relative to the MY 2011 final rule baseline.

TABLE IV.C.1–2—CURRENT BASELINE PLANNED CAFE LEVELS IN MY 2011 VERSUS MY 2011 FINAL RULE PLANNED CAFE LEVELS

[Passenger and nonpassenger]

Manufacturer	Current baseline CAFE levels		MY 2011 planned CAFE levels	
	Passenger	Nonpassenger	Passenger	Nonpassenger
BMW	27.2	23.0	27.0	23.0
Chrysler	27.8	21.8	28.2	23.1
Ford	28.0	21.0	29.3	22.5
Subaru	29.2	26.1	28.6	28.6
General Motors	28.2	21.2	30.3	21.4
Honda	33.5	25.0	32.3	25.2
Hyundai	32.5	24.3	31.7	26.0
Tata	24.6	19.6	24.7	23.9
Kia[570]	31.7	23.7		
Mazda[571]	30.6	26.0		
Daimler	26.4	21.0	25.2	20.6
Mitsubishi	29.4	23.6	29.3	26.7
Nissan	31.7	21.7	31.3	21.4
Porsche	26.2	20.0	27.2	20.0
Ferrari[572]			16.2	
Maserati[573]			18.2	
Suzuki	30.9	23.3	28.7	24.0
Toyota	35.1	23.7	33.2	22.7
Volkswagen	29.1	20.2	28.5	20.1
Total/Average	30.3	22.2	30.4	22.6

[568] *See* 49 U.S.C. 32905 and 32906.

[569] 49 U.S.C. 32902(h).

[570] Again, Kia is not listed in the table for the MY 2011 final rule because it was considered as part of Hyundai for purposes of that analysis (*i.e.,* Hyundai-Kia).

[571] Mazda is not listed in the table for the MY 2011 final rule because it was considered as part of Ford for purposes of that analysis.

[572] EPA did not include Ferrari in the current baseline based on the conclusion that including them would not impact the results, and therefore Ferrari is not listed in the table for the current baseline.

[573] EPA did not include Maserati in the current baseline based on the conclusion that including them would not impact the results, and therefore Maserati is not listed in the table for the current baseline.

TABLE IV.C.1–3—CURRENT BASELINE PLANNED CAFE LEVELS IN MY 2011 VERSUS MY 2011 FINAL RULE PLANNED CAFE LEVELS (COMBINED)

Manufacturer	Current baseline	MY 2011 Final Rule baseline
BMW	25.0	26.0
Chrysler	23.3	24.7
Ford	24.9	26.0
Subaru	27.9	28.6
General Motors	24.1	24.9
Honda	29.5	30.0
Hyundai	31.3	30.0
Tata	21.4	24.4
Kia	29.5	
Mazda	29.8	
Daimler	24.4	23.6
Mitsubishi	27.4	29.1
Nissan	27.3	26.6
Porsche	23.7	22.0
Ferrari		16.2
Maserati		18.2
Suzuki	29.7	27.8
Toyota	29.5	27.6
Volkswagen	27.0	27.1
Total/Average	26.4	26.5

Tables IV.C.1–4 through 1–6 summarize other differences between the current baseline and manufacturers' product plans submitted to NHTSA in 2008 for the MY 2011 final rule. These tables present average vehicle footprint, curb weight, and power-to-weight ratios for each manufacturer represented in the current baseline and of the seven largest manufacturers represented in the product plan data used in that rulemaking, and for the overall industry. The tables containing product plan data do not identify manufacturers by name, and do not present them in the same sequence.

Tables IV.C.1–4a and 1–4b show that the current baseline reflects a slight decrease in overall average passenger vehicle size relative to the manufacturers' plans. This is a reflection of the market segment shifts underlying the sales forecasts of the current baseline.

TABLE IV.C.1–4a—CURRENT BASELINE AVERAGE MY 2011 VEHICLE FOOTPRINT

[Square feet]

Manufacturer	PC	LT	Avg.
BMW	45.4	49.9	47.5
Chrysler	46.8	52.8	50.9
Daimler	47.1	53.3	49.0
Ford	46.3	56.1	49.9
General Motors	46.4	58.2	52.5
Honda	44.3	49.1	46.3
Hyundai	44.4	48.7	44.8
Kia	45.2	51.0	46.5
Mazda	44.4	47.3	44.9
Mitsubishi	43.8	46.5	44.6
Nissan	45.3	53.9	48.3
Porsche	38.6	51.0	42.8
Subaru	43.1	46.2	44.3
Suzuki	40.8	47.2	41.6
Tata	50.3	47.8	48.8
Toyota	44.0	53.0	47.6
Volkswagen	43.5	52.6	45.1
Industry Average	45.2	53.5	48.6

TABLE IV.C.1–4b—MY 2011 FINAL RULE AVERAGE PLANNED MY 2011 VEHICLE FOOTPRINT

[Square feet]

	PC	LT	Avg.
Manufacturer 1	46.7	58.5	52.8
Manufacturer 2	46.0	50.4	47.1
Manufacturer 3	44.9	52.8	48.4
Manufacturer 4	45.4	55.8	49.3
Manufacturer 5	45.2	57.5	50.3
Manufacturer 6	48.5	54.7	52.4
Manufacturer 7	45.1	49.9	46.4
Industry Average	45.6	55.1	49.7

Tables IV.C.1–5a and 1–5b show that the current baseline reflects a decrease in overall average vehicle weight relative to the manufacturers' plans. As above, this is most likely a reflection of the market segment shifts underlying the sales forecasts of the current baseline.

TABLE IV.C.1–5a—CURRENT BASELINE AVERAGE MY 2011 VEHICLE CURB WEIGHT

[Pounds]

Manufacturer	PC	LT	Avg.
BMW	3,535	4,648	4,055
Chrysler	3,572	4,469	4,194
Daimler	3,583	5,127	4,063
Ford	3,526	4,472	3,877
General Motors	3,528	4,978	4,281
Honda	3,040	4,054	3,453
Hyundai	3,014	4,078	3,129
Kia	3,035	4,007	3,252
Mazda	3,258	3,803	3,348
Mitsubishi	3,298	3,860	3,468
Nissan	3,251	4,499	3,689
Porsche	3,159	4,906	3,760
Subaru	3,176	3,470	3,391
Suzuki	2,842	3,843	2,965
Tata	3,906	5,171	4,627
Toyota	3,109	4,321	3,589
Volkswagen	3,445	5,672	3,839
Industry Average	3,313	4,499	3,797

TABLE IV.C.1–5b—MY 2011 FINAL RULE AVERAGE PLANNED MY 2011 VEHICLE CURB WEIGHT

[Pounds]

	PC	LT	Avg.
Manufacturer 1	3,197	4,329	3,692
Manufacturer 2	3,691	4,754	4,363
Manufacturer 3	3,293	4,038	3,481
Manufacturer 4	3,254	4,191	3,510
Manufacturer 5	3,547	5,188	4,401
Manufacturer 6	3,314	4,641	3,815
Manufacturer 7	3,345	4,599	3,865
Industry Average	3,380	4,687	3,935

Tables IV.C.1–6a and IV.C.1–6b show that the current baseline reflects a decrease in average performance relative to that of the manufacturers' product plans. This decreased performance is most likely a reflection of the market segment shifts underlying the sales forecasts of the current baseline, that is, an assumed shift away from higher performance vehicles.

TABLE IV.C.1–6a—CURRENT BASELINE AVERAGE MY 2011 VEHICLE POWER-TO-WEIGHT RATIO

[hp/lb]

Manufacturer	PC	LT	Avg.
BMW	0.072	0.061	0.067
Chrysler	0.055	0.052	0.053
Daimler	0.068	0.056	0.064
Ford	0.058	0.054	0.056
General Motors	0.057	0.056	0.056
Honda	0.056	0.054	0.056
Hyundai	0.052	0.055	0.052
Kia	0.050	0.056	0.051
Mazda	0.052	0.055	0.052
Mitsubishi	0.053	0.056	0.054
Nissan	0.059	0.057	0.058
Porsche	0.105	0.073	0.094
Subaru	0.060	0.056	0.058
Suzuki	0.049	0.062	0.051
Tata	0.077	0.057	0.065
Toyota	0.053	0.062	0.056
Volkswagen	0.057	0.052	0.056
Industry Average	0.057	0.056	0.056

TABLE IV.C.1–6b—MY 2011 FINAL RULE AVERAGE PLANNED MY 2011 VEHICLE POWER-TO-WEIGHT RATIO

[hp/lb]

	PC	LT	Avg.
Manufacturer 1	0.065	0.058	0.060
Manufacturer 2	0.061	0.065	0.062
Manufacturer 3	0.053	0.059	0.056
Manufacturer 4	0.060	0.058	0.059
Manufacturer 5	0.060	0.057	0.059
Manufacturer 6	0.063	0.065	0.065
Manufacturer 7	0.053	0.055	0.053
Industry Average	0.060	0.059	0.060

As discussed above, the agencies' market forecast for MY 2012–2016 holds the performance and other characteristics of individual vehicle models constant, adjusting the size and composition of the fleet from one model year to the next.

Refresh and redesign schedules (for application in NHTSA's modeling):

Expected model years in which each vehicle model will be redesigned or freshened constitute another important aspect of NHTSA's market forecast. As discussed in Section IV.C.2.c below, NHTSA's analysis supporting the current rulemaking times the addition of nearly all technologies to coincide with either a vehicle redesign or a vehicle freshening. Product plans submitted to NHTSA preceding the MY 2011 final rule contained manufacturers' estimates of vehicle redesign and freshening schedules and NHTSA's estimates of the timing of the five-year redesign cycle and the two- to three-year refresh cycle were made with reference to those plans. In the current baseline, in contrast, estimates of the timing of the refresh and redesign cycles were based on historical dates—*i.e.,* counting forward from known redesigns occurring in or prior to MY 2008 for each vehicle in the fleet and assigning refresh and redesign years accordingly. After applying these estimates, the shares of manufacturers' passenger car and light truck estimated to be redesigned in MY 2011 were as summarized below for the current baseline and the MY 2011 final rule. Table IV.C.1–7 below shows the percentages of each manufacturer's fleets expected to be redesigned in MY 2011 for the current baseline. Table IV.C.1–8 presents corresponding estimates from the market forecast used by NHTSA in the analysis supporting the MY 2011 final rule (again, to protect confidential information, manufacturers are not identified by name).

TABLE IV.C.1–7—CURRENT BASELINE, SHARE OF FLEET REDESIGNED IN MY 2011

Manufacturer	PC (percent)	LT (percent)	Avg. (percent)
BMW	32	37	34
Chrysler	0	13	9
Daimler	0	0	0
Ford	12	8	11
General Motors	17	3	9
Honda	29	26	28
Hyundai	26	0	23
Kia	38	83	48
Mazda	0	0	0
Mitsubishi	0	59	18
Nissan	5	25	12
Porsche	0	100	34
Subaru	0	42	16
Suzuki	4	21	6
Tata	28	100	69
Toyota	5	15	9
Volkswagen	16	0	13
Industry Average	13	15	14

TABLE IV.C.1–8—MY 2011 FINAL RULE, SHARE OF FLEET REDESIGNED IN MY 2011

	PC (percent)	LT (percent)	Avg. (percent)
Manufacturer 1	19	0	11
Manufacturer 2	34	27	29
Manufacturer 3	5	0	3
Manufacturer 4	7	0	5
Manufacturer 5	19	0	11
Manufacturer 6	34	28	33
Manufacturer 7	27	28	28
Overall	20	9	15

We continue, therefore, to estimate that manufacturers' redesigns will not be uniformly distributed across model years. This is in keeping with standard industry practices, and reflects what manufacturers actually do—NHTSA has observed that manufacturers in fact do redesign more vehicles in some years than in others. NHTSA staff have closely examined manufacturers' planned redesign schedules, contacting some manufacturers for clarification of some plans, and confirmed that these plans remain unevenly distributed over time. For example, although Table IV.C.1–8 shows that NHTSA expects Company 2 to redesign 34 percent of its passenger car models in MY 2011, current information indicates that this company will then redesign only (a different) 10 percent of its passenger cars in MY 2012. Similarly, although Table IV.C.1–8 shows that NHTSA expects four of the largest seven light truck manufacturers to redesign virtually no light truck models in MY 2011, current information also indicates that these four manufacturers will redesign 21–49 percent of their light trucks in MY 2012.

e. How does manufacturer product plan data factor into the baseline used in this rule?

As discussed in Section II.B.5 above, while the agencies received updated product plans in Spring and Fall 2009 in response to NHTSA's requests, the baseline data used in this final rule is not informed by these product plans, except with respect to specific engineering characteristics (*e.g.,* GVWR) of some MY 2008 vehicle models, because these product plans contain confidential business information that the agencies are legally required to protect from disclosure, and because the agencies have concluded that, for purposes of this final rule, a transparent baseline is preferable.

For the NPRM, NHTSA conducted a separate analysis that did make use of these product plans. NHTSA performed this separate analysis for purposes of comparison only. For today's final rule NHTSA used the publicly available baseline for all analysis related to the development and evaluation of the new CAFE standards. As discussed above in Section II.B.4, while a baseline developed using publicly and commercially available sources has both advantages and disadvantages relative to a baseline developed using manufacturers' product plans, NHTSA has concluded for today's rule that the advantages outweigh the disadvantages. NHTSA plans to consider these advantages and disadvantages further in connection with future rulemakings, taking into account changes in the market, changes in the scope and quality of publicly and commercially available data, and any changes in manufacturers' willingness to make some product planning information publicly available.

2. How were the technology inputs developed?

As discussed above in Section II.E, for developing the technology inputs for the MY 2012–2016 CAFE and GHG standards, the agencies primarily began with the technology inputs used in the MY 2011 CAFE final rule and in the July 2008 EPA ANPRM, and then reviewed, as requested by President Obama in his January 26 memorandum, the technology assumptions that NHTSA used in setting the MY 2011 standards and the comments that NHTSA received in response to its May 2008 Notice of Proposed Rulemaking, as well as the comments received to the NPRM for this rule. In addition, the agencies supplemented their review with updated information from the FEV tear-down studies contracted by EPA, more current literature, new product plans and from EPA certification testing. More detail is available regarding how the agencies developed the technology inputs for this final rule above in Section II.E, in Chapter 3 of the Joint TSD, and in Section V of NHTSA's FRIA.

a. What technologies does NHTSA consider?

Section I*I.E.*1 above describes the fuel-saving technologies considered by the agencies that manufacturers could use to improve the fuel economy of their vehicles during MYs 2012–2016. The majority of the technologies described in this section are readily available, well known, and could be incorporated into vehicles once production decisions are made. As discussed, the technologies considered fall into five broad categories: engine technologies, transmission technologies, vehicle technologies, electrification/accessory technologies, and hybrid technologies. Table IV.C.2–1 below lists all the technologies considered and provides the abbreviations used for them in the Volpe model,[574] as well as their year of availability, which for purposes of NHTSA's analysis means the first model year in the rulemaking period that the Volpe model is allowed to apply a technology to a manufacturer's fleet.[575] Year of availability recognizes that technologies must achieve a level of technical viability before they can be implemented in the Volpe model, and are thus a means of constraining technology use until such time as it is considered to be technologically feasible. For a more detailed description of each technology and their costs and effectiveness, we refer the reader to Chapter 3 of the Joint TSD and Section V of NHTSA's FRIA.

[574] The abbreviations are used in this section both for brevity and for the reader's reference if they wish to refer to the expanded decision trees and the model input and output sheets, which are available in Docket No. NHTSA–2009–0059–0156 and on NHTSA's Web site.

[575] A date of 2011 means the technology can be applied in all model years, while a date of 2014 means the technology can only be applied in model years 2014 through 2016.

TABLE IV.C.2–1—LIST OF TECHNOLOGIES IN NHTSA'S ANALYSIS

Technology	Model abbreviation	Year available
Low Friction Lubricants	LUB	2011
Engine Friction Reduction	EFR	2011
VVT—Coupled Cam Phasing (CCP) on SOHC	CCPS	2011
Discrete Variable Valve Lift (DVVL) on SOHC	DVVLS	2011
Cylinder Deactivation on SOHC	DEACS	2011
VVT—Intake Cam Phasing (ICP)	ICP	2011
VVT—Dual Cam Phasing (DCP)	DCP	2011
Discrete Variable Valve Lift (DVVL) on DOHC	DVVLD	2011
Continuously Variable Valve Lift (CVVL)	CVVL	2011
Cylinder Deactivation on DOHC	DEACD	2011
Cylinder Deactivation on OHV	DEACO	2011
VVT—Coupled Cam Phasing (CCP) on OHV	CCPO	2011
Discrete Variable Valve Lift (DVVL) on OHV	DVVLO	2011
Conversion to DOHC with DCP	CDOHC	2011
Stoichiometric Gasoline Direct Injection (GDI)	SGDI	2011
Combustion Restart	CBRST	2014
Turbocharging and Downsizing	TRBDS	2011
Exhaust Gas Recirculation (EGR) Boost	EGRB	2013
Conversion to Diesel following CBRST	DSLC	2011
Conversion to Diesel following TRBDS	DSLT	2011
6-Speed Manual/Improved Internals	6MAN	2011
Improved Auto. Trans. Controls/Externals	IATC	2011
Continuously Variable Transmission	CVT	2011
6/7/8-Speed Auto. Trans with Improved Internals	NAUTO	2011
Dual Clutch or Automated Manual Transmission	DCTAM	2011
Electric Power Steering	EPS	2011
Improved Accessories	IACC	2011
12V Micro-Hybrid	MHEV	2011
Belt Integrated Starter Generator	BISG	2011
Crank Integrated Starter Generator	CISG	2011
Power Split Hybrid	PSHEV	2011
2-Mode Hybrid	2MHEV	2011
Plug-in Hybrid	PHEV	2011
Mass Reduction 1 (1.5%)	MS1	2011
Mass Reduction 2 (3.5%–8.5%)	MS2	2014
Low Rolling Resistance Tires	ROLL	2011
Low Drag Brakes	LDB	2011
Secondary Axle Disconnect 4WD	SAX	2011
Aero Drag Reduction	AERO	2011

For purposes of this final rule and as discussed in greater detail in the Joint TSD, NHTSA and EPA carefully reviewed the list of technologies used in the agency's analysis for the MY 2011 final rule. NHTSA and EPA concluded that the considerable majority of technologies were correctly defined and continued to be appropriate for use in the analysis supporting the final standards. However, some refinements were made as discussed in the NPRM.[576] Additionally, the following refinements were made for purposes of the final rule.

Specific to its modeling, NHTSA has revised two technologies used in the final rule analysis from those considered in the NPRM. These revisions were based on comments received in response to the NPRM and the identification of area to improve accuracy. In the NPRM, a diesel engine option (DSLT or DSLC) was not available for small vehicles because it did not appear to be a cost-effective option. However, based on comments received in response to the NPRM, the agency added a diesel engine option for small vehicles. Additionally, in the NPRM, the mass reduction/material substitution technology, MS1, assumed engine downsizing. However, for purposes of the final rule, engine downsizing is no longer assumed for MS1, thus slightly lowering the effectiveness estimate to better reflect how manufacturers might implement small amounts of mass reduction/material substitution. Chapter 3 of the Joint TSD and Section V of NHTSA's FRIA provide a more detailed explanation of these revisions.

b. How did NHTSA determine the costs and effectiveness of each of these technologies for use in its modeling analysis?

Building on NHTSA's estimates developed for the MY 2011 CAFE final rule and EPA's Advanced Notice of Proposed Rulemaking, which relied on EPA's 2008 Staff Technical Report,[577] the agencies took a fresh look at technology cost and effectiveness values and incorporated additional FEV tear-down study results for purposes of this final rule. This joint work is reflected in Chapter 3 of the Joint TSD and in Section II of this preamble, as summarized below. For more detailed information on the effectiveness and cost of fuel-saving technologies, please refer to Chapter 3 of the Joint TSD and Section V of NHTSA's FRIA. NHTSA and EPA are confident that the thorough review conducted for purposes of this final rule led to the best available conclusions regarding technology costs and effectiveness estimates for the current rulemaking and resulted in excellent consistency between the agencies' respective analyses for

[576] 74 FR at 49655–56 (Sept. 28, 2009).

[577] EPA Staff Technical Report: Cost and Effectiveness Estimates of Technologies Used to Reduce Light-Duty Vehicle Carbon Dioxide Emissions. EPA420–R–08–008, March 2008. *Available at* Docket No. NHTSA–2009–0059–0027.

developing the CAFE and CO_2 standards.

Generally speaking, while NHTSA and EPA found that much of the cost information used in NHTSA's MY 2011 final rule and EPA's 2008 Staff Report was consistent to a great extent, the agencies, in reconsidering information from many sources revised several component costs of several major technologies for purposes of the NRPM: mild and strong hybrids, diesels, SGDI, and Valve Train Lift Technologies. In addition, based on FEV tear-down studies, the costs for turbocharging/downsizing, 6-, 7-, 8-speed automatic transmissions, and dual clutch transmissions were revised for this final rule. These revisions are discussed at length in the Joint TSD and in NHTSA's FRIA.

Most effectiveness estimates used in both the MY 2011 final rule and the 2008 EPA Staff Report were determined to be accurate and were carried forward without significant change into this rulemaking. When NHTSA and EPA's estimates for effectiveness diverged slightly due to differences in how the agencies apply technologies to vehicles in their respective models, we report the ranges for the effectiveness values used in each model. For purposes of the final rule analysis, NHTSA made only a couple of changes to the effectiveness estimates. Specifically, in reviewing the NPRM effectiveness estimates for this final rule NHTSA discovered that the DCTAM effectiveness value for Subcompact and Compact subclasses was incorrect; the (lower) wet clutch effectiveness estimate had been used instead of the intended (higher) dry clutch estimate for these vehicle classes.[578] Thus, NHTSA corrected these effectiveness estimates. Additionally, as discussed above, the effectiveness estimate for MS1 was revised (lowered) to better represent the impact of reducing mass at a refresh. For much more information on the costs and effectiveness of individual technologies, we refer the reader to Chapter 3 of the Joint TSD and Section V of NHTSA's FRIA.

As a general matter, NHTSA received relatively few comments related to technology cost and effectiveness estimates as compared to the number received on these issues in previous CAFE rulemakings. The California Air Resources Board (CARB) generally agreed with cost estimates used in the NPRM analysis. NHTSA also received comments from the Aluminum Association, General Motors, Honeywell, International Council on Clean Transportation (ICCT), Manufacturers of Emission Controls Association (MECA), Motor and Equipment Manufacturers Association (MEMA) and the New Jersey Department of Environmental Protection related to cost and effectiveness estimates for specific technologies, including but not limited to hybrids, diesels, turbocharging and downsizing, and mass reduction/material substitution. A detailed description of these comments and NHTSA's responses can be found in Section V of NHTSA's FRIA.

NHTSA notes that, in developing technology cost and effectiveness estimates, the agencies have made every effort to hold constant aspects of vehicle performance and utility typically valued by consumers, such as horsepower, carrying capacity, and towing and hauling capacity. For example, NHTSA includes in its analysis technology cost and effectiveness estimates that are specific to performance passenger cars (*i.e.,* sports cars), as compared to non-performance passenger cars. NHTSA sought comment on the extent to which commenters believed that the agencies have been successful in holding constant these elements of vehicle performance and utility in developing the technology cost and effectiveness estimates, but received relatively little in response. NHTSA thus concludes that commenters had no significant issues with its approach for purposes of this rulemaking, but the agency will continue to analyze this issue going forward.

Additionally, NHTSA notes that the technology costs included in this final rule take into account only those associated with the initial build of the vehicle. The agencies sought comment on the additional lifetime costs, if any, associated with the implementation of advanced technologies, including warranty, maintenance and replacement costs, such as the replacement costs for low rolling resistance tires, low friction lubricants, and hybrid batteries, and maintenance costs for diesel aftertreatment components, but received no responses. The agency will continue to examine this issue closely for subsequent rulemakings, particularly as manufacturers turn increasingly to even more advanced technologies in the future that may have more significant lifetime costs.

The tables below provide examples of the incremental cost and effectiveness estimates employed by the agency in developing this final rule, according to the decision trees used in the Volpe modeling analysis. Thus, the effectiveness and cost estimates are not absolute to a single reference vehicle, but are incremental to the technology or technologies that precede it.

TABLE IV.C.2–2—TECHNOLOGY EFFECTIVENESS ESTIMATES EMPLOYED IN THE VOLPE MODEL FOR CERTAIN TECHNOLOGIES

	Subcomp. car	Compact car	Midsize car	Large car	Perform. subcomp. car	Perform. compact car	Perform. midsize car	Perform. large car	Minivan LT	Small LT	Midsize LT	Large LT
VEHICLE TECHNOLOGY INCREMENTAL FUEL CONSUMPTION REDUCTION (−%)												
Low Friction Lubricants	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
VVT—Dual Cam Phasing (DCP)	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0
Discrete Variable Valve Lift (DVVL) on DOHC	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0	1.0–3.0
Cylinder Deactivation on OHV	n.a.	n.a.	n.a.	3.9–5.5	n.a.	3.9–5.5	3.9–5.5	3.9–5.5	3.9–5.5	n.a.	3.9–5.5	3.9–5.5

[578] "Dry clutch" DCTAMs and "wet clutch" DCTAMs have different characteristics and different uses. A dry clutch DCTAM is more efficient and less expensive than a wet clutch DCTAM, which requires a wet-clutch-type hydraulic system to cool the clutches. However, without a cooling system, a dry clutch DCTAM has a lower torque capacity. Dry clutch DCTAMs are thus ideal for smaller vehicles with lower torque ratings, like those in the Subcompact and Compact classes, while wet clutch DCTAMs would be more appropriate for, *e.g.,* larger trucks. Thus, it is appropriate to distinguish accordingly in DCTAM effectiveness between subclasses.

TABLE IV.C.2–2—TECHNOLOGY EFFECTIVENESS ESTIMATES EMPLOYED IN THE VOLPE MODEL FOR CERTAIN TECHNOLOGIES—Continued

	Subcomp. car	Compact car	Midsize car	Large car	Perform. subcomp. car	Perform. compact car	Perform. midsize car	Perform. large car	Minivan LT	Small LT	Midsize LT	Large LT
Stoichiometric Gasoline Direct Injection (GDI)	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0
Turbocharging and Downsizing	4.2–4.8	4.2–4.8	4.2–4.8	1.8–1.9	4.2–4.8	1.8–1.9	1.8–1.9	1.8–1.9	1.8–1.9	4.2–4.8	1.8–1.9	1.8–1.9
6/7/8–Speed Auto. Trans with Improved Internals	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4	1.4–3.4
Electric Power Steering	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0	1.0–2.0
12V Micro-Hybrid	2.0–3.0	2.0–3.0	2.0–3.0	2.5–3.5	2.0–3.0	2.5–3.5	2.5–3.5	3.0–4.0	2.5–3.5	2.0–3.0	2.5–3.5	n.a.
Crank mounted Integrated Starter Generator	8.6–8.9	8.6–8.9	8.6–8.9	8.7–8.9	8.6–8.9	8.7–8.9	8.7–8.9	8.7–8.9	8.7–8.9	8.6–8.9	8.7–8.9	14.1–16.3
Power Split Hybrid	6.3–12.4	6.3–12.4	6.3–12.4	6.3–12.4	6.3–12.4	6.3–12.4	6.3–12.4	6.3–12.4	6.3–12.4	6.3–12.4	6.3–12.4	n.a.
Aero Drag Reduction	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0	2.0–3.0

TABLE IV.C.2–3—TECHNOLOGY COST ESTIMATES EMPLOYED IN THE VOLPE MODEL FOR CERTAIN TECHNOLOGIES

	Subcomp. car	Compact car	Midsize car	Large car	Perform. subcomp. car	Perform. compact car	Perform. midsize car	Perform. large car	Minivan LT	Small LT	Midsize LT	Large LT
VEHICLE TECHNOLOGY ICM COSTS PER VEHICLE ($)												
Nominal baseline engine (for cost purpose)	(*)	(*)	(*)	V6	(*)	V6	V6	V8	V6	(*)	V6	V8
Low Friction Lubricants	3	3	3	3	3	3	3	3	3	3	3	3
VVT—Dual Cam Phasing (DCP)	38	38	38	82	38	82	82	82	82	38	82	82
Discrete Variable Valve Lift (DVVL) on DOHC	142	142	142	206	142	206	206	294	206	142	206	294
Cylinder Deactivation on OHV	n.a.	n.a.	n.a.	168	n.a.	168	168	192	168	n.a.	168	192
Stoichiometric Gasoline Direct Injection (GDI)	236	236	236	342	236	342	342	392	342	236	342	392
Turbocharging and Downsizing	445	445	445	325	445	325	325	919	325	445	325	919
6/7/8-Speed Auto. Trans with Improved Internals	112	112	112	112	112–214	112–214	112–214	112–214	112–214	112	112–214	112–214
Electric Power Steering	106	106	106	106	106	106	106	106	106	106	106	106
12V Micro-Hybrid	288	311	342	367	314	337	372	410	337	325	376	n.a.
Crank mounted Integrated Starter Generator	2,791	3,107	3,319	3,547	2,839	3,149	3,335	3,571	3,149	3,141	3,611	5,124
Power Split Hybrid	1,600	2,133	2,742	3,261	3,661	4,018	5,287	6,723	4,018	2,337	3,462	n.a.
Aero Drag Reduction	48	48	48	48	48	48	48	48	48	48	48	48

* Inline 4.

c. How does NHTSA use these assumptions in its modeling analysis?

NHTSA relies on several inputs and data files to conduct the compliance analysis using the Volpe model, as discussed further below and in Section V of the FRIA. For the purposes of applying technologies, the Volpe model primarily uses two data files, one that contains data on the vehicles expected to be manufactured in the model years covered by the rulemaking and identifies the appropriate stage within the vehicle's life-cycle for the technology to be applied, and one that contains data/parameters regarding the available technologies the model can apply. These inputs are discussed below.

As discussed above, the Volpe model begins with an initial state of the domestic vehicle market, which in this case is the market for passenger cars and light trucks to be sold during the period covered by the final standards. The vehicle market is defined on a model-by-model, engine-by-engine, and transmission-by-transmission basis, such that each defined vehicle model refers to a separately defined engine and a separately defined transmission.

For the current standards, which cover MYs 2012–2016, the light-duty vehicle (passenger car and light truck) market forecast was developed jointly by NHTSA and EPA staff using MY 2008 CAFE compliance data. The MY 2008 compliance data includes about 1,100 vehicle models, about 400 specific engines, and about 200 specific transmissions, which is a somewhat lower level of detail in the representation of the vehicle market than that used by NHTSA in recent CAFE analyses—previous analyses would count a vehicle as "new" in any year when significant technology differences are made, such as at a redesign.[579] However, within the limitations of information that can be made available to the public, it provides the foundation for a realistic analysis of manufacturer-specific costs and the analysis of attribute-based CAFE standards, and is much greater than the level of detail used by many other models and analyses relevant to light-duty vehicle fuel economy.[580]

In addition to containing data about each vehicle, engine, and transmission, this file contains information for each technology under consideration as it pertains to the specific vehicle (whether the vehicle is equipped with it or not), the estimated model year the vehicle is undergoing redesign, and information about the vehicle's subclass for purposes of technology application. In essence, the model considers whether it is appropriate to apply a technology to a vehicle.

Is a vehicle already equipped, or can it not be equipped, with a particular technology?

The market forecast file provides NHTSA the ability to identify, on a technology by technology basis, which technologies may already be present (manufactured) on a particular vehicle, engine, or transmission, or which technologies are not applicable (due to technical considerations) to a particular vehicle, engine, or transmission. These identifications are made on a model-by-model, engine-by-engine, and transmission-by-transmission basis. For example, if the market forecast file indicates that Manufacturer X's Vehicle Y is manufactured with Technology Z, then for this vehicle Technology Z will be shown as used. Additionally, NHTSA has determined that some technologies are only suitable or unsuitable when certain vehicle, engine, or transmission conditions exist. For example, secondary axle disconnect is only suitable for 4WD vehicles, and cylinder deactivation is unsuitable for any engine with fewer than 6 cylinders, while CVTs can only be applied to unibody vehicles. Similarly, comments received to the 2008 NPRM indicated that cylinder deactivation could not likely be applied to vehicles equipped with manual transmissions during the rulemaking timeframe, due primarily to the cylinder deactivation system not being able to anticipate gear shifts. The Volpe model employs "engineering constraints" to address issues like these, which are a programmatic method of controlling technology application that is independent of other constraints. Thus, the market forecast file would indicate that the technology in question should not be applied to the particular vehicle/engine/transmission (*i.e.,* is unavailable). Since multiple vehicle models may be equipped with an engine or transmission, this may affect multiple models. In using this aspect of the market forecast file, NHTSA ensures the Volpe model only applies technologies in an appropriate manner, since before any application of a technology can occur, the model checks the market forecast to see if it is either already present or unavailable.

In response to the NPRM, NHTSA received comments from GM that included a description of technical considerations, concerns, limitations and risks that need to be considered when implementing turbocharging and downsizing technologies on full size trucks. These include concerns related to engine knock, drivability, control of boost pressure, packaging complexity, enhanced cooling for vehicles that are designed for towing or hauling, and noise, vibration and harshness. NHTSA judges that the expressed technical considerations, concerns, limitations and risks are well recognized within the industry and it is standard industry practice to address each during the design and development phases of applying turbocharging and downsizing technologies. Cost and effectiveness estimates used in the final rule are based on analysis that assumes each of these factors is addressed prior to production implementation of the technologies. In comments related to full size trucks, GM commented that potential to address knock limit concerns through various alternatives, which include use of higher octane premium fuel and/or the addition of a supplemental ethanol injection system. For this rulemaking, NHTSA has not assumed that either of these approaches is implemented to address knock limit concerns, and these technologies are not included in assessment of turbocharging and downsizing feasibility, cost or effectiveness.[581] In addition, NHTSA has received confidential business information from a manufacturer that supports that turbocharging and downsizing is feasible on a full size truck product during the rulemaking period.

[579] The market file for the MY 2011 final rule, which included data for MYs 2011–2015, had 5500 vehicles, about 5 times what we are using in this analysis of the MY 2008 certification data.

[580] Because CAFE standards apply to the average performance of each manufacturer's fleet of cars and light trucks, the impact of potential standards on individual manufacturers cannot be credibly estimated without analysis of the fleets that manufacturers can be expected to produce in the future. Furthermore, because required CAFE levels under an attribute-based CAFE standard depend on manufacturers' fleet composition, the stringency of an attribute-based standard cannot be predicted without performing analysis at this level of detail.

[581] Note that for one of the teardown analysis cost studies of turbocharging and downsizing conducted by FEV, in which a 2.4L I4 DOHC naturally aspirated engine was replaced by a 1.6L I4 DOHC SGDI turbocharged engine, the particular 1.6L turbocharged engine chosen for the study was a premium octane fuel engine. For this rulemaking, NHTSA intends that a turbocharged and downsized engine achieve comparable performance to a baseline engine without requiring premium octane fuel. For the FEV study of the 1.6L turbocharged engine, this could be achieved through the specification of an engine with a displacement of slightly greater than 1.6L. NHTSA judges that a slightly larger engine would have small effect on the overall cost analysis used in this rulemaking. For all other teardown studies conducted by FEV, both the naturally aspirated engine and the replacement turbocharged and downsized engine were specified to use regular octane fuel.

Is a vehicle being redesigned or refreshed?

Manufacturers typically plan vehicle changes to coincide with certain stages of a vehicle's life cycle that are appropriate for the change, or in this case the technology being applied. In the automobile industry there are two terms that describe *when* technology changes to vehicles occur: Redesign and refresh (*i.e.,* freshening). Vehicle *redesign* usually refers to significant changes to a vehicle's appearance, shape, dimensions, and powertrain. Redesign is traditionally associated with the introduction of "new" vehicles into the market, often characterized as the "next generation" of a vehicle, or a new platform. Vehicle *refresh* usually refers to less extensive vehicle modifications, such as minor changes to a vehicle's appearance, a moderate upgrade to a powertrain system, or small changes to the vehicle's feature or safety equipment content. Refresh is traditionally associated with mid-cycle cosmetic changes to a vehicle, within its current generation, to make it appear "fresh." Vehicle refresh generally occurs no earlier than two years after a vehicle redesign, or at least two years before a scheduled redesign. For the majority of technologies discussed today, manufacturers will only be able to apply them at a refresh or redesign, because their application would be significant enough to involve some level of engineering, testing, and calibration work.[582]

Some technologies (*e.g.,* those that require significant revision) are nearly always applied only when the vehicle is expected to be redesigned, like turbocharging and engine downsizing, or conversion to diesel or hybridization. Other technologies, like cylinder deactivation, electric power steering, and aerodynamic drag reduction can be applied either when the vehicle is expected to be refreshed or when it is expected to be redesigned, while a few others, like low friction lubricants, can be applied at any time, regardless of whether a refresh or redesign event is conducted. Accordingly, the model will only apply a technology at the particular point deemed suitable. These constraints are intended to produce results consistent with manufacturers' technology application practices. For each technology under consideration, NHTSA stipulates whether it can be applied any time, at refresh/redesign, or only at redesign. The data forms another input to the Volpe model. NHTSA develops redesign and refresh schedules for each of a manufacturer's vehicles included in the analysis, essentially based on the last known redesign year for each vehicle and projected forward in a 5-year redesign and a 2–3 year refresh cycle, and this data is also stored in the market forecast file. We note that this approach is different than NHTSA has employed previously for determining redesign and refresh schedules, where NHTSA included the redesign and refresh dates in the market forecast file as provided by manufacturers in confidential product plans. The new approach is necessary given the nature of the new baseline which as a single year of data does not contain its own refresh and redesign cycle cues for future model years, and to ensure the complete transparency of the agency's analysis. Vehicle redesign/refresh assumptions are discussed in more detail in Section V of the FRIA and in Chapter 3 of the TSD.

NHTSA received comments from the Center for Biological Diversity (CBD) and Ferrari regarding redesign cycles. CBD stated that manufacturers do not necessarily adhere to the agencies' assumed five-year redesign cycle, and may add significant technologies by redesigning vehicles at more frequent intervals, albeit at higher costs. CBD argued that NHTSA should analyze the costs and benefits of manufacturers choosing to redesign vehicles more frequently than a 5-year average. Conversely, Ferrari agreed with the agencies that major technology changes are introduced at vehicle redesigns, rather than at vehicle freshenings, stating further that as compared to full-line manufacturers, small-volume manufacturers in fact may have 7 to 8-year redesign cycles. In response, NHTSA recognizes that not all manufacturers follow a precise five-year redesign cycle for every vehicle they produce,[583] but continues to believe that the five-year redesign cycle assumption is a reasonable estimate of how often manufacturers can make major technological changes for purposes of its modeling analysis.[584] NHTSA has considered attempting to quantify the increased cost impacts of setting standards that rise in stringency so rapidly that manufacturers are forced to apply "usual redesign" technologies at non-redesign intervals, but such an analysis would be exceedingly complex and is beyond the scope of this rulemaking given the timeframe and the current condition of the industry. NHTSA emphatically disagrees that the redesign cycle is a barrier to increasing penetration of technologies as CBD suggests, but we also believe that standards so stringent that they would require manufacturers to abandon redesign cycles entirely would be beyond the realm of economic practicability and technological feasibility, particularly in this rulemaking timeframe given lead time and capital constraints. Manufacturers can and will accomplish much improvement in fuel economy and GHG reductions while applying technology consistent with their redesign schedules.

Once the model indicates that a technology should be applied to a vehicle, the model must evaluate which technology should be applied. This will depend on the vehicle subclass to which the vehicle is assigned; what

[582] For example, applying material substitution through weight reduction, or even something as simple as low rolling-resistance tires, to a vehicle will likely require some level of validation and testing to ensure that the vehicle may continue to be certified as compliant with NHTSA's Federal Motor Vehicle Safety Standards (FMVSS). Weight reduction might affect a vehicle's crashworthiness; low rolling-resistance tires might change a vehicle's braking characteristics or how it performs in crash avoidance tests.

[583] In prior NHTSA rulemakings, the agency was able to account for shorter redesign cycles on some models (*e.g.,* some sedans), and longer redesign cycles on others (*e.g.,* cargo vans), but has standardized the redesign cycle in this analysis using the transparent baseline.

[584] In the MY 2011 final rule, NHTSA noted that the CAR report submitted by the Alliance, prepared by the Center for Automotive Research and EDF, stated that "For a given vehicle line, the time from conception to first production may span two and one-half to five years," but that "The time from first production ("Job#1") to the last vehicle off the line ("Balance Out") may span from four to five years to eight to ten years or more, depending on the dynamics of the market segment," The CAR report then stated that "At the point of final production of the current vehicle line, a new model with the same badge and similar characteristics may be ready to take its place, continuing the cycle, or the old model may be dropped in favor of a different product." *See* NHTSA–2008–0089–0170.1, Attachment 16, at 8 (393 of pdf). NHTSA explained that this description, which states that a vehicle model will be redesigned or dropped after 4–10 years, was consistent with other characterizations of the redesign and freshening process, and supported the 5-year redesign and 2–3 year refresh cycle assumptions used in the MY 2011 final rule. See *id.,* at 9 (394 of pdf). Given that the situation faced by the auto industry today is not so wholly different from that in March 2009, when the MY 2011 final rule was published, and given that the commenters did not present information to suggest that these assumptions are unreasonable (but rather simply that different manufacturers may redesign their vehicles more or less frequently, as the range of cycles above indicates), NHTSA believes that the assumptions remain reasonable for purposes of this final rule analysis. *See also* "Car Wars 2009–2012, The U.S. automotive product pipeline," John Murphy, Research Analyst, Merrill Lynch research paper, May 14, 2008 and "Car Wars 2010–2013, The U.S. automotive product pipeline," John Murphy, Research Analyst, Bank of America/Merrill Lynch research paper, July 15, 2009. *Available at http://www.autonews.com/assets/PDF/CA66116716.PDF* (last accessed March 15, 2010).

technologies have already been applied to the vehicle (*i.e.,* where in the "decision tree" the vehicle is); when the technology is first available (*i.e.,* year of availability); whether the technology is still available (*i.e.,* "phase-in caps"); and the costs and effectiveness of the technologies being considered. Technology costs may be reduced, in turn, by learning effects, while technology effectiveness may be increased or reduced by synergistic effects between technologies. In the technology input file, NHTSA has developed a separate set of technology data variables for each of the twelve vehicle subclasses. Each set of variables is referred to as an "input sheet," so for example, the subcompact input sheet holds the technology data that is appropriate for the subcompact subclass. Each input sheet contains a list of technologies available for members of the particular vehicle subclass. The following items are provided for each technology: The name of the technology, its abbreviation, the decision tree with which it is associated, the (first) year in which it is available, the upper and lower cost and effectiveness (fuel consumption reduction) estimates, the learning type and rate, the cost basis, its applicability, and the phase-in values.

To which vehicle subclass is the vehicle assigned?

As part of its consideration of technological feasibility, the agency evaluates whether each technology could be implemented on all types and sizes of vehicles, and whether some differentiation is necessary in applying certain technologies to certain types and sizes of vehicles, and with respect to the cost incurred and fuel consumption and CO_2 emissions reduction achieved when doing so. The 2002 NAS Report differentiated technology application using ten vehicle "classes" (4 car classes and 6 truck classes),[585] but did not determine how cost and effectiveness values differ from class to class. NAS's purpose in separating vehicles into these classes was to create groups of "like" vehicles, *i.e.,* vehicles similar in size, powertrain configuration, weight, and consumer use, and for which similar technologies are applicable. NHTSA similarly differentiates vehicles by "subclass" for the purpose of applying technologies to "like" vehicles and assessing their incremental costs and effectiveness. NHTSA assigns each vehicle manufactured in the rulemaking period to one of 12 subclasses: For passenger cars, Subcompact, Subcompact Performance, Compact, Compact Performance, Midsize, Midsize Performance, Large, and Large Performance; and for light trucks, Small SUV/Pickup/Van, Midsize SUV/Pickup/Van, Large SUV/Pickup/Van, and Minivan.

For this final rule as for the NPRM, NHTSA divides the vehicle fleet into subclasses based on model inputs, and applies subclass-specific estimates, also from model inputs, of the applicability, cost, and effectiveness of each fuel-saving technology. Therefore, the model's estimates of the cost to improve the fuel economy of each vehicle model depend upon the subclass to which the vehicle model is assigned.

Each vehicle's subclass is stored in the market forecast file. When conducting a compliance analysis, if the Volpe model seeks to apply technology to a particular vehicle, it checks the market forecast to see if the technology is available and if the refresh/redesign criteria are met. If these conditions are satisfied, the model determines the vehicle's subclass from the market data file, which it then uses to reference another input called the technology input file. NHTSA reviewed its methodology for dividing vehicles into subclasses for purposes of technology application that it used in the MY 2011 final rule, and concluded that the same methodology would be appropriate for this final rule for MYs 2012–2016. No comments were received on the vehicle subclasses employed in the agency's NPRM analysis, and NHTSA has retained the subclasses and the methodology for dividing vehicles among them for the final rule analysis. Vehicle subclasses are discussed in more detail in Section V of the FRIA and in Chapter 3 of the TSD.

For the reader's reference, the subclasses and example vehicles from the market forecast file are provided in the tables below.

PASSENGER CAR SUBCLASSES EXAMPLE (MY 2008) VEHICLES

Class	Example vehicles
Subcompact	Chevy Aveo, Hyundai Accent.
Subcompact Performance	Mazda MX–5, BMW Z4.
Compact	Chevy Cobalt, Nissan Sentra and Altima.
Compact Performance	Audi S4, Mazda RX–8.
Midsize	Chevy Impala, Toyota Camry, Honda Accord, Hyundai Azera.
Midsize Performance	Chevy Corvette, Ford Mustang (V8), Nissan G37 Coupe.
Large	Audi A8, Cadillac CTS and DTS.
Large Performance	Bentley Arnage, Daimler CL600.

LIGHT TRUCK SUBCLASSES EXAMPLE (MY 2008) VEHICLES

Class	Example vehicles
Minivans	Dodge Caravan, Toyota Sienna.
Small SUV/Pickup/Van	Ford Escape & Ranger, Nissan Rogue.
Midsize SUV/Pickup/Van	Chevy Colorado, Jeep Wrangler, Toyota Tacoma.
Large SUV/Pickup/Van	Chevy Silverado, Ford E-Series, Toyota Sequoia.

What technologies have already been applied to the vehicle (i.e., where in the "decision trees" is it)?

NHTSA's methodology for technology application analysis developed out of the approach taken by NAS in the 2002 Report, and evaluates the application of individual technologies and their incremental costs and effectiveness.

[585] The NAS classes included subcompact cars, compact cars, midsize cars, large cars, small SUVs, midsize SUVs, large SUVs, small pickups, large pickups, and minivans.

Incremental costs and effectiveness of individual technologies are relative to the prior technology state, which means that it is crucial to understand what technologies are already present on a vehicle in order to determine correct incremental cost and effectiveness values. The benefit of the incremental approach is transparency in accounting, insofar as when individual technologies are added incrementally to individual vehicles, it is clear and easy to determine how costs and effectiveness add up as technology levels increase.

To keep track of incremental costs and effectiveness and to know which technology to apply and in which order, the Volpe model's architecture uses a logical sequence, which NHTSA refers to as "decision trees," for applying fuel economy-improving technologies to individual vehicles. In the MY 2011 final rule, NHTSA worked with Ricardo to modify previously-employed decision trees in order to allow for a much more accurate application of technologies to vehicles. For purposes of the final rule, NHTSA reviewed the technology sequencing architecture and updated, as appropriate, the decision trees used in the analysis reported in the final rule for MY 2011 and in the MY 2012–2016 NPRM.

In general, and as described in great detail in the MY 2011 final rule and in Section V of the current FRIA, each technology is assigned to one of the five following categories based on the system it affects or impacts: engine, transmission, electrification/accessory, hybrid or vehicle. Each of these categories has its own decision tree that the Volpe model uses to apply technologies sequentially during the compliance analysis. The decision trees were designed and configured to allow the Volpe model to apply technologies in a cost-effective, logical order that also considers ease of implementation. For example, software or control logic changes are implemented before replacing a component or system with a completely redesigned one, which is typically a much more expensive option. In some cases, and as appropriate, the model may combine the sequential technologies shown on a decision tree and apply them simultaneously, effectively developing dynamic technology packages on an as-needed basis. For example, if compliance demands indicate, the model may elect to apply LUB, EFR, and ICP on a dual overhead cam engine, if they are not already present, in one single step. An example simplified decision tree for engine technologies is provided below; the other simplified decision trees may be found in Chapter 3 of the Joint TSD and in the FRIA. Expanded decision trees are available in the docket for this final rule.

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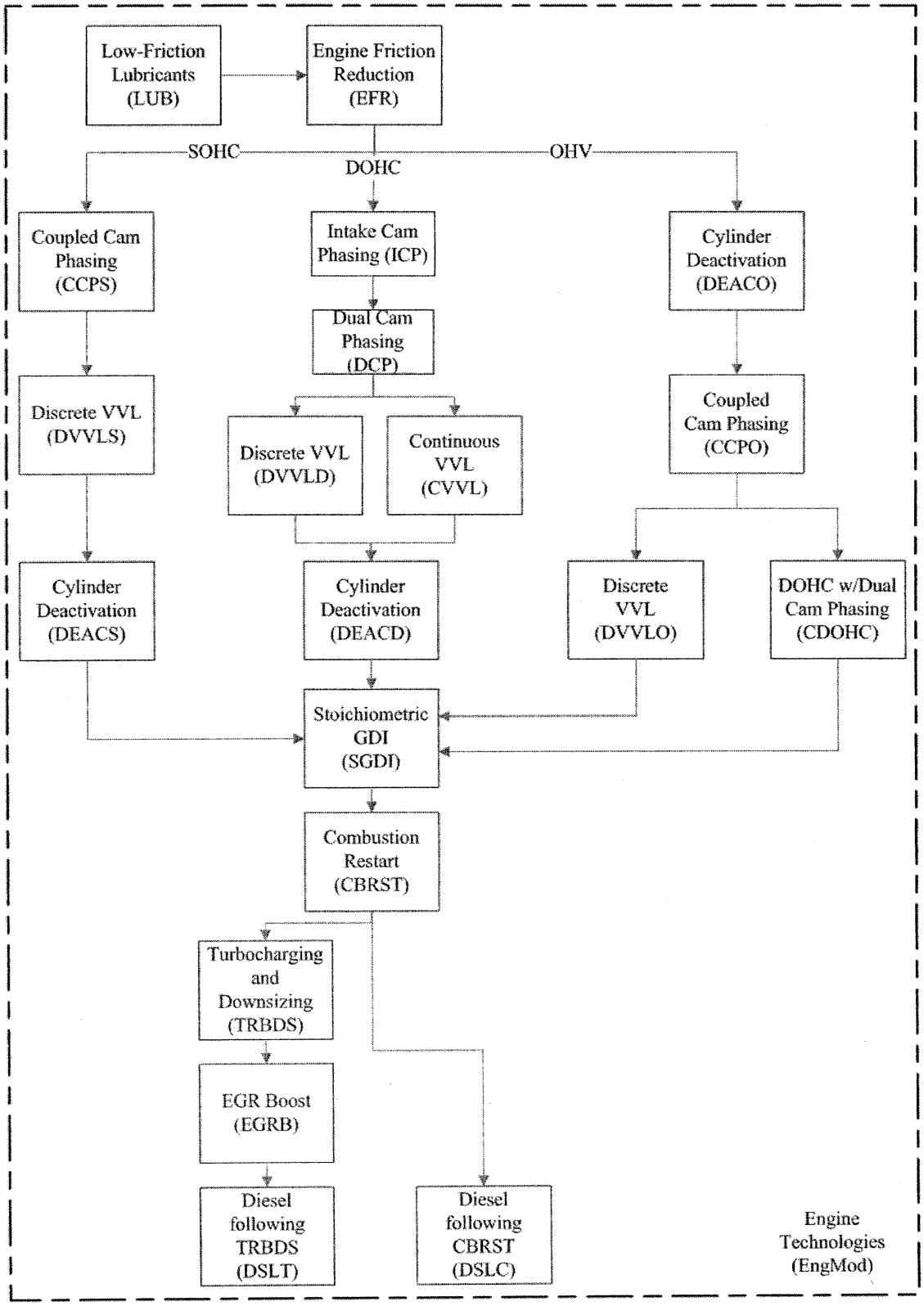
Figure IV.C.2-1 Engine Technology (EngMod) Decision Tree



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Each technology within the decision trees has an incremental cost and an incremental effectiveness estimate associated with it, and estimates are specific to a particular vehicle subclass (*see* the tables in Section V of the FRIA). Each technology's incremental estimate takes into account its position in the decision tree path. If a technology is located further down the decision tree, the estimates for the costs and effectiveness values attributed to that technology are influenced by the incremental estimates of costs and effectiveness values for prior technology applications. In essence, this approach accounts for "in-path" effectiveness synergies, as well as cost effects that occur between the technologies in the same path. When comparing cost and effectiveness estimates from various sources and those provided by commenters in this and the previous CAFE rulemakings, it is important that the estimates evaluated are analyzed in the proper context, especially as concerns their likely position in the decision trees and other technologies that may be present or missing. Not all estimates available in the public domain or that have been offered for the agencies' consideration can be evaluated in an "apples-to-apples" comparison with those used by the Volpe model, since in some cases the order of application, or included technology content, is inconsistent with that assumed in the decision tree.

The MY 2011 final rule discussed in detail the revisions and improvements made to the Volpe model and decision trees during that rulemaking process, including the improved handling and accuracy of valve train technology application and the development and implementation of a method for accounting path-dependent correction factors in order to ensure that technologies are evaluated within the proper context. The reader should consult the MY 2011 final rule documents for further information on these modeling techniques, all of which continued to be utilized in developing this final rule.[586] To the extent that the decision trees have changed for purposes of the NPRM and this final rule, it was due not to revisions in the order of technology application, but rather to redefinitions of technologies or addition or subtraction of technologies.

NHTSA did not receive any comments related to the use or ordering of the decision trees, and the agency continued to use the decision trees as they were proposed in the NPRM.

Is the next technology available in this model year?

As discussed above, the majority of technologies considered are available on vehicles today, and thus will be available for application (albeit in varying degrees) in the model years covered by this rule. Some technologies, however, will not become available for purposes of NHTSA's analysis until later in the rulemaking time frame. When the model is considering whether to add a technology to a vehicle, it checks its year of availability—if the technology is available, it may be added; if it is not available, the model will consider whether to switch to a different decision tree to look for another technology, or will skip to the next vehicle in a manufacturer's fleet. The year of availability for each technology is provided above in Table IV.C.2–1.

CBD commented that because many of the technologies considered in the NPRM are currently available, manufacturers should be able to attain mpg levels equivalent to the MY 2016 standards in MY 2009. In response, as discussed above, technology "availability" is not determined based simply on whether the technology exists, but depends also on whether the technology has achieved a level of technical viability that makes it appropriate for widespread application. This depends in turn on component supplier constraints, capital investment and engineering constraints, and manufacturer product cycles, among other things. Moreover, even if a technology is available for application, it may not be available for every vehicle. Some technologies may have considerable fuel economy benefits, but cannot be applied to some vehicles due to technological constraints—for example, cylinder deactivation cannot be applied to vehicles with current 4-cylinder engines (because not enough cylinders are present to deactivate some and continue moving the vehicle) or on vehicles with manual transmissions within the rulemaking timeframe. The agencies have provided for increases over time to reach the mpg level of the MY 2016 standards precisely because of these types of constraints, because they have a real effect on how quickly manufacturers can apply technology to vehicles in their fleets.

Has the technology reached the phase-in cap for this model year?

Besides the refresh/redesign cycles used in the Volpe model, which constrain the rate of technology application at the vehicle level so as to ensure a period of stability following any modeled technology applications, the other constraint on technology application employed in NHTSA's analysis is "phase-in caps." Unlike vehicle-level cycle settings, phase-in caps constrain technology application at the vehicle manufacturer level.[587] They are intended to reflect a manufacturer's overall resource capacity available for implementing new technologies (such as engineering and development personnel and financial resources), thereby ensuring that resource capacity is accounted for in the modeling process. At a high level, phase-in caps and refresh/redesign cycles work in conjunction with one another to avoid the modeling process out-pacing an OEM's limited pool of available resources during the rulemaking time frame, especially in years where many models may be scheduled for refresh or redesign. This helps to ensure technological feasibility and economic practicability in determining the stringency of the standards.

NHTSA has been developing the concept of phase-in caps for purposes of the agency's modeling analysis over the course of the last several CAFE rulemakings, as discussed in greater detail in the MY 2011 final rule,[588] and in Section V of the FRIA and Chapter 3 of the Joint TSD. The MY 2011 final rule employed non-linear phase-in caps (that is, caps that varied from year to year) that were designed to respond to comments raising lead-time concerns in reference to the agency's proposed MY 2011–2015 standards, but because the final rule covered only one model year, many phase-in caps for that model year were lower than had originally been proposed. NHTSA emphasized that the MY 2011 phase-in caps were based on assumptions for the full five year period of the proposal (2011–2015), and stated that it would reconsider the phase-in settings for all years beyond 2011 in a future rulemaking analysis.[589]

[586] *See, e.g.,* 74 FR 14238–46 (Mar. 30, 2009) for a full discussion of the decision trees in NHTSA's MY 2011 final rule, and Docket No. NHTSA–2009–0062–0003.1 for an expanded decision tree used in that rulemaking.

[587] While phase-in caps are expressed as specific percentages of a manufacturer's fleet to which a technology may be applied in a given model year, phase-in caps cannot always be applied as precise limits, and the Volpe model in fact allows "override" of a cap in certain circumstances. When only a small portion of a phase-in cap limit remains, or when the cap is set to a very low value, or when a manufacturer has a very limited product line, the cap might prevent the technology from being applied at all since any application would cause the cap to be exceeded. Therefore, the Volpe model evaluates and enforces each phase-in cap constraint after it has been exceeded by the application of the technology (as opposed to evaluating it before application), which can result in the described overriding of the cap.

[588] 74 FR 14268–14271 (Mar. 30, 2009).

[589] *See* 74 FR at 14269 (Mar. 20, 2009).

For purposes of this final rule for MYs 2012–2016, as in the MY 2011 final rule, NHTSA combines phase-in caps for some groups of similar technologies, such as valve phasing technologies that are applicable to different forms of engine design (SOHC, DOHC, OHV), since they are very similar from an engineering and implementation standpoint. When the phase-in caps for two technologies are combined, the maximum total application of either or both to any manufacturer's fleet is limited to the value of the cap.[590] In contrast to the phase-in caps used in the MY 2011 final rule, NHTSA has increased the phase-in caps for most of the technologies, as discussed below.

In developing phase-in cap values for purposes of this final rule, NHTSA initially considered the fact that many of the technologies commonly applied by the model, those placed near the top of the decision trees, such as low friction lubes, valve phasing, electric power steering, improved automatic transmission controls, and others, have been commonly available to manufacturers for several years now. Many technologies, in fact, precede the 2002 NAS Report, which estimated that such technologies would take 4 to 8 years to penetrate the fleet. Since this final rule would take effect in MY 2012, nearly 10 years beyond the NAS report, and extends to MY 2016, and in the interest of harmonization with EPA's proposal, NHTSA determined that higher phase-in caps were likely justified. Additionally, NHTSA considered the fact that manufacturers, as part of the agreements supporting the National Program, appear to be anticipating higher technology application rates than those used in the MY 2011 final rule. This also supported higher phase-in caps for purposes of the analysis underlying this final rule.

Thus, while phase-in caps for the MY 2011 final rule reached a maximum of 50 percent for a couple of technologies and generally fell in the range between 0 and 20 percent, phase-in caps for this final rule for the majority of technologies are set to reach 85 or 100 percent by MY 2016, although more advanced technologies like diesels and strong hybrids reach only 15 percent by MY 2016.

NHTSA received comments from the Alliance and ICCT relating to phase-in caps. The Alliance commented that the higher phase-in caps in the NPRM analysis (as compared to the MY 2011 final rule) "ignore OEM engine architecture differences/limitations," arguing that the agency must consider manufacturing investment and lead time implications when defining phase-in caps. ICCT did not raise the issue of phase-in caps directly, but commented that the agencies had not provided information in the proposal documents explaining when each manufacturer can implement the different technologies and how long it will take the technologies to spread across the fleet. ICCT argued that this information was crucial to considering how quickly the stringency of the standards could be increased, and at what cost.

In response to the Alliance comments, the phase-in cap constraint is, in fact, exactly intended to account for manufacturing investment and lead time implications, as discussed above: phase-in caps are intended to reflect a manufacturer's overall resource capacity available for implementing new technologies (such as engineering and development personnel and financial resources), to help ensure that resource capacity is accounted for in the modeling process. Although the phase-in caps for the analysis supporting these standards are higher than the phase-in caps employed in the MY 2011 final rule, as stated in the NPRM, the agencies considered the fact that manufacturers, as part of the agreements supporting the National Program, appear to be anticipating higher technology application rates during the rulemaking timeframe—indicating that the values selected for the phase-in caps are more likely within the range of practicability. Additionally, the agencies did not receive any comments from manufacturers indicating a direct concern with the proposed application rates, which they were able to review in the detailed manufacturer level model outputs. The agencies believe that as manufacturers focus their resources (*i.e.,* engineering, capital investment, etc.) on fuel economy-improving technologies, many of which have been in production for many years, the application rates being modeled are appropriate for the timeframe being analyzed.

In response to ICCT's comments, the combination of phase-in caps, refresh/redesign cycles, engineering constraints, etc., are intended to simulate manufacturers' technology application decisions, and ultimately define the technology application/implementation rates for each manufacturer. NHTSA has used the best public data available to define refresh and redesign schedules to define technology implementation, which allows us to apply technologies at the specific times each manufacturer is planning. There was full notice of not just the phase-in caps themselves, but their specific application as well. NHTSA notes that the PRIA and the FRIA do contain manufacturer-specific application/implementation rates for prominent technologies, and that manufacturer-specific technology application as employed in the agency's analysis is available in full in the Volpe model outputs available on NHTSA's Web site. The model outputs present the resultant application of technologies at the industry, manufacturer, and vehicle levels.

Theoretically, significantly higher phase-in caps, such as those used in the current proposal and final rule as compared to those used in the MY 2011 final rule, should result in higher levels of technology penetration in the modeling results. Reviewing the modeling output does not, however, indicate unreasonable levels of technology penetration for the final standards.[591] NHTSA believes that this is due to the interaction of the various changes in methodology for this final rule—changes to phase-in caps are but one of a number of revisions to the Volpe model and its inputs that could potentially impact the rate at which technologies are applied in the modeling analysis for this final rule as compared to prior rulemakings. Other revisions that could impact modeled application rates include the use of transparent CAFE certification data in baseline fleet formulation and the use of other data for projecting it forward,[592] or the use of a multi-year planning programming technique to apply technology retroactively to earlier-MY vehicles, both of which may have a direct impact on the modeling process. Conversely the model and inputs remain unchanged in other areas that also could impact technology application, such as in the refresh/redesign cycle settings, estimates used for the technologies, both of which remain largely unchanged from the MY 2011 final rule. These changes together make it difficult to predict how phase-in caps should be expected to function in the new modeling process.

Thus, after reviewing the output files, NHTSA concludes that the higher phase-in caps, and the resulting technology application rates produced by the Volpe model, at both the industry and manufacturer level, are appropriate for the analysis underlying these final

[590] *See* 74 FR at 14270 (Mar. 30, 2009) for further discussion and examples.

[591] The modeling output for the analysis underlying these final standards is available on NHTSA's Web site.

[592] The baseline fleet sets the starting point, from a technology point of view, for where the model begins the technology application process, so changes have a direct impact on the projected net application of technology.

standards, achieving a suitable level of stringency without requiring unrealistic or unachievable penetration rates.

Is the technology less expensive due to learning effects?

Historically, NHTSA did not explicitly account for the cost reductions a manufacturer might realize through learning achieved from experience in actually applying a technology. Since working with EPA to develop the 2008 NPRM for MYs 2011–2015, and with Ricardo to refine the concept for the March 2009 MY 2011 final rule, NHTSA has accounted for these cost reductions through two kinds of mutually exclusive learning, "volume-based" and "time-based" which it continues to use in this rule, as discussed below.

In the 2008 NPRM, NHTSA applied learning factors to technology costs for the first time. These learning factors were developed using the parameters of learning threshold, learning rate, and the initial cost, and were based on the "experience curve" concept which describes reductions in production costs as a function of accumulated production volume. The typical curve shows a relatively steep initial decline in cost which flattens out to a gentle downwardly sloping line as the volume increase to large values. In the NPRM, NHTSA applied a learning rate discount of 20 percent for each successive doubling of production volume (on a per manufacturer basis), and a learning threshold of 25,000 units was assumed (thus a technology was viewed as being fully learned out at 100,000 units). The factor was only applied to certain technologies that were considered emerging or newly implemented on the basis that significant cost improvements would be achieved as economies of scale were realized (*i.e.,* the technologies were on the steep part of the curve).

In the MY 2011 final rule, NHTSA continued to use this learning factor, referring to it as volume-based learning since the cost reductions were determined by production volume increases, and again only applied it to emerging technologies. However, and in response to comments, NHTSA revised its assumptions on learning threshold, basing them instead on an industry-wide production basis, and increasing the threshold to 300,000 units annually.

Commenters to the 2008 NPRM also described another type of learning factor which NHTSA decided to adopt and implement in the MY 2011 final rule. Commenters described a relatively small negotiated cost decrease that occurred on an annual basis through contractual agreements with first tier component and systems suppliers for readily available, high volume technologies commonly in use by multiple OEMs. Based on the same experience curve principal, however at production volumes that were on the flatter part of the curve (and thus the types of volumes that represent annual industry volumes), NHTSA adopted this type learning and referred to it as time-based learning. An annual cost reduction of 3 percent in the second and each subsequent year, which was consistent with estimates from commenters and supported by work Ricardo conducted for NHTSA, was used in the final rule.

In developing the proposed standards, NHTSA and EPA reviewed both types of learning factors, and the thresholds (300,000) and reduction rates (20 percent for volume, 3 percent for time-based) they rely on, and as implemented in the MY 2011 final rule, and agreed that both factors continue to be accurate and appropriate; each agency thus implemented time- and volume-based learning in their analyses. Noting that only one type of learning can be applied to any single technology, if any learning is applied at all, the agencies reviewed each to determine which learning factor was appropriate. Volume-based learning was applied to the higher complexity hybrid technologies, while no learning was applied to technologies likely to be affected by commodity costs (LUB, ROLL) or that have loosely-defined BOMs (EFR, LDB), as was the case in the MY 2011 final rule. Chapter 3 of the Joint TSD shows the specific learning factors that NHTSA has applied in this analysis for each technology, and discusses learning factors and each agencies' use of them further.

ICCT and Ferrari commented on learning curves. ICCT stated the agencies could improve the accuracy of the learning curve assumptions if they used a more dynamic or continuous learning curve that is more technology-specific, rather than using step decreases as the current time- and volume-based learning curves appear to do. ICCT also commented on the appropriate application of volume- versus time-based learning, and stated further that worldwide production volumes should be taken into account when developing learning curves. Ferrari commented that is more difficult for small-volume manufacturers to negotiate cost decreases from things like cost learning effects with their suppliers, implying that learning effects may not be applicable equally for all manufacturers.

NHTSA agrees that a continuous curve, if implemented correctly, could potentially improve the accuracy of modeling cost-learning effects, although the agency cannot estimate at this time how significant the improvement would be. To implement a continuous curve, however, NHTSA would need to develop a learning curve cost model to be integrated into the agency's existing model for CAFE analysis. Due to time constraints the agencies were not able to investigate fully the use of a continuous cost-learning effects curve for each technology, but we will investigate the applicability of this approach for future rulemakings. For purposes of the final rule analysis, however, NHTSA believes that while more detailed cost learning approaches may eventually be possible, the approach taken for this final rule is valid.

Additionally, while the agencies agree that worldwide production volumes can impact learning curves, the agencies do not forecast worldwide vehicle production volumes in addition to the already complex task of forecasting the U.S. market. That said, the agencies do consider current and projected worldwide technology proliferation when determining the maturity of a particular technology used to determine the appropriateness of applying time- or volume-based learning, which helps to account for the effect of globalized production.

With regard to ICCT's comments on the appropriate application of volume- versus time-based learning, however, it seems as though ICCT is referencing a study that defines volume- and time-based learning in a different manner than the current definitions used by the agencies, and so is not directly relevant. The agencies use "volume-based" learning for non-mature technologies that have the potential for significant cost reductions through learning, while "time-based" learning is used for mature technologies that have already had significant cost reductions and only have the potential for smaller cost reductions. For "time-based" learning, the agencies chose to emulate the small year-over-year cost reductions manufacturers realize through defined cost reductions, approximately 3 percent per year, negotiated into contracts with suppliers. A more detailed description of how the agencies define volume- and time-based learning can be found in NHTSA's PRIA.

And finally, in response to Ferrari's comment, NHTSA recognizes that cost negotiations can be different for different manufacturers, but believes that on balance, cost learning at the supplier level will generally impact costs to all purchasers. Thus, if cost reductions are realized for a particular

technology, all entities that purchase the technology will benefit from these cost reductions.

Is the technology more or less effective due to synergistic effects?

When two or more technologies are added to a particular vehicle model to improve its fuel efficiency and reduce CO_2 emissions, the resultant fuel consumption reduction may sometimes be higher or lower than the product of the individual effectiveness values for those items.[593] This may occur because one or more technologies applied to the same vehicle partially address the same source (or sources) of engine, drivetrain or vehicle losses. Alternately, this effect may be seen when one technology shifts the engine operating points, and therefore increases or reduces the fuel consumption reduction achieved by another technology or set of technologies. The difference between the observed fuel consumption reduction associated with a set of technologies and the product of the individual effectiveness values in that set is referred to for purposes of this rulemaking as a "synergy." Synergies may be positive (increased fuel consumption reduction compared to the product of the individual effects) or negative (decreased fuel consumption reduction). An example of a positive synergy might be a vehicle technology that reduces road loads at highway speeds (*e.g.,* lower aerodynamic drag or low rolling resistance tires), that could extend the vehicle operating range over which cylinder deactivation may be employed. An example of a negative synergy might be a variable valvetrain system technology, which reduces pumping losses by altering the profile of the engine speed/load map, and a six-speed automatic transmission, which shifts the engine operating points to a portion of the engine speed/load map where pumping losses are less significant. As the complexity of the technology combinations is increased, and the number of interacting technologies grows accordingly, it becomes increasingly important to account for these synergies.

NHTSA and EPA determined synergistic impacts for this rulemaking using EPA's "lumped parameter" analysis tool, which EPA described at length in its March 2008 Staff Technical Report.[594] The lumped parameter tool is a spreadsheet model that represents energy consumption in terms of average performance over the fuel economy test procedure, rather than explicitly analyzing specific drive cycles. The tool begins with an apportionment of fuel consumption across several loss mechanisms and accounts for the average extent to which different technologies affect these loss mechanisms using estimates of engine, drivetrain and vehicle characteristics that are averaged over the EPA fuel economy drive cycle. Results of this analysis were generally consistent with those of full-scale vehicle simulation modeling performed in 2007 by Ricardo, Inc.

For the current rulemaking, NHTSA used the lumped parameter tool as modified in the MY 2011 CAFE final rule. NHTSA modified the lumped parameter tool from the version described in the EPA Staff Technical Report in response to public comments received in that rulemaking. The modifications included updating the list of technologies and their associated effectiveness values to match the updated list of technologies used in the final rule. NHTSA also expanded the list of synergy pairings based on further consideration of the technologies for which a competition for losses would be expected. These losses are described in more detail in Section V of the FRIA.

NHTSA and EPA incorporate synergistic impacts in their analyses in slightly different manners. Because NHTSA applies technologies individually in its modeling analysis, NHTSA incorporates synergistic effects between pairings of individual technologies. The use of discrete technology pair incremental synergies is similar to that in DOE's National Energy Modeling System (NEMS).[595] Inputs to the Volpe model incorporate NEMS-identified pairs, as well as additional pairs from the set of technologies considered in the Volpe model.

NHTSA notes that synergies that occur within a decision tree are already addressed within the incremental values assigned and therefore do not require a synergy pair to address. For example, all engine technologies take into account incremental synergy factors of preceding engine technologies, and all transmission technologies take into account incremental synergy factors of preceding transmission technologies. These factors are expressed in the fuel consumption improvement factors in the input files used by the Volpe model.

For applying incremental synergy factors in separate path technologies, the Volpe model uses an input table (see the tables in Chapter 3 of the TSD and in the FRIA) which lists technology pairings and incremental synergy factors associated with those pairings, most of which are between engine technologies and transmission/electrification/hybrid technologies. When a technology is applied to a vehicle by the Volpe model, all instances of that technology in the incremental synergy table which match technologies already applied to the vehicle (either pre-existing or previously applied by the Volpe model) are summed and applied to the fuel consumption improvement factor of the technology being applied. Synergies for the strong hybrid technology fuel consumption reductions are included in the incremental value for the specific hybrid technology block since the model applies technologies in the order of the most effectiveness for least cost and also applies all available electrification and transmission technologies before applying strong hybrid technologies.

NHTSA received only one comment regarding synergies, from MEMA, who commented that NHTSA's Volpe model adequately addressed synergistic effects. Having received no information to the contrary, NHTSA finalized the synergy approach and values for the final rule.

d. Where can readers find more detailed information about NHTSA's technology analysis?

Much more detailed information is provided in Section V of the FRIA, and a discussion of how NHTSA and EPA jointly reviewed and updated technology assumptions for purposes of this final rule is available in Chapter 3 of the TSD. Additionally, all of NHTSA's model input and output files are now public and available for the reader's review and consideration. The technology input files can be found in the docket for this final rule, Docket No. NHTSA–2009–0059, and on NHTSA's

[593] More specifically, the products of the differences between one and the technology-specific levels of effectiveness in reducing fuel consumption. For example, not accounting for interactions, if technologies A and B are estimated to reduce fuel consumption by 10 percent (*i.e.,* 0.1) and 20 percent (*i.e.,* 0.2) respectively, the "product of the individual effectiveness values" would be 1–0.1 times 1–0.2, or 0.9 times 0.8, which equals 0.72, corresponding to a combined effectiveness of 28 percent rather than the 30 percent obtained by adding 10 percent to 20 percent. The "synergy factors" discussed in this section further adjust these multiplicatively combined effectiveness values.

[594] EPA Staff Technical Report: Cost and Effectiveness Estimates of Technologies Used to Reduce Light-duty Vehicle Carbon Dioxide Emissions; EPA420–R–08–008, March 2008. *Available at* Docket No. NHTSA–2009–0059–0027.

[595] U.S. Department of Energy, Energy Information Administration, *Transportation Sector Module of the National Energy Modeling System: Model Documentation 2007,* May 2007, Washington, DC, DOE/EIAM070(2007), at 29–30. *Available at http://tonto.eia.doe.gov/ftproot/modeldoc/m070(2007).pdf* (last accessed March 15, 2010).

Web site. And finally, because much of NHTSA's technology analysis for purposes of this final rule builds on the work that was done for the MY 2011 final rule, we refer readers to that document as well for background information concerning how NHTSA's methodology for technology application analysis has evolved over the past several rulemakings, both in response to comments and as a result of the agency's growing experience with this type of analysis.[596]

3. How did NHTSA develop its economic assumptions?

NHTSA's analysis of alternative CAFE standards for the model years covered by this rulemaking relies on a range of forecast variables, economic assumptions, and parameter values. This section describes the sources of these forecasts, the rationale underlying each assumption, and the agency's choices of specific parameter values. These economic values play a significant role in determining the benefits of alternative CAFE standards, as they have for the last several CAFE rulemakings. Under those alternatives where standards would be established by reference to their costs and benefits, these economic values also affect the levels of the CAFE standards themselves. Some of these variables have more important effects on the level of CAFE standards and the benefits from requiring alternative increases in fuel economy than do others.

In reviewing these variables and the agency's estimates of their values for purposes of this final rule, NHTSA reconsidered previous comments it had received and comments received to the NPRM, as well as reviewed newly available literature. As a consequence, the agency elected to revise some of its economic assumptions and parameter estimates from previous rulemakings at the NPRM stage, while retaining others. Some of the most important changes, which are discussed in greater detail below, as well as in Chapter 4 of the Joint TSD and in Chapter VIII of the FRIA, include significant revisions to the markup factors for technology costs; reducing the rebound effect from 15 to 10 percent; and revising the value of reducing CO_2 emissions based on recent interagency efforts to develop estimates of this value for government-wide use. The comments the agency received and its responses are discussed in detail below, as well as in the TSD and FRIA. For the reader's reference, Table IV.C.3–1 below summarizes the values used to calculate the economic benefits from each alternative.

TABLE IV.C.3–1—ECONOMIC VALUES FOR BENEFITS COMPUTATIONS

[2007$]

Fuel Economy Rebound Effect	10%
"Gap" between test and on-road MPG	20%
Value of refueling time per ($ per vehicle-hour)	$24.64
Average percentage of tank refilled per refueling	55%
Percent of drivers refueling in response to low fuel level	100%
Annual growth in average vehicle use	1.15%
Fuel Prices (2012–50 average, $/gallon)	
Retail gasoline price	$3.66
Pre-tax gasoline price	$3.29
Economic Benefits from Reducing Oil Imports ($/gallon)	
"Monopsony" Component	$0.00
Price Shock Component	$0.17
Military Security Component	$0.00
Total Economic Costs ($/gallon)	$0.17
Emission Damage Costs (2020, $/ton or $/metric ton)	
Carbon monoxide	$0
Volatile organic compounds (VOC)	$1,300
Nitrogen oxides (NO_x)—vehicle use	$5,300
Nitrogen oxides (NO_x)—fuel production and distribution	$5,100
Particulate matter ($PM_{2.5}$)—vehicle use	$290,000
Particulate matter ($PM_{2.5}$)—fuel production and distribution	$240,000
Sulfur dioxide (SO_2)	$31,000
Carbon dioxide (CO_2)	$21 [597]
Annual Increase in CO_2 Damage Cost	Varies by year.
External Costs from Additional Automobile Use ($/vehicle-mile)	
Congestion	$0.054
Accidents	$0.023
Noise	$0.001
Total External Costs	$0.078
External Costs from Additional Light Truck Use ($/vehicle-mile)	
Congestion	$0.048
Accidents	$0.026
Noise	$0.001
Total External Costs	$0.075
Discount Rate Applied to Future Benefits	3%, 7%

[596] 74 FR 14233–308 (Mar. 30, 2009).

[597] The $21 value is for CO_2 emissions in 2010, which rises to $45/ton in 2050, at an average discount rate of 3 percent.

a. Costs of Fuel Economy-Improving Technologies

NHTSA and EPA previously developed detailed estimates of the costs of applying fuel economy-improving technologies to vehicle models for use in analyzing the impacts of alternative standards considered in the proposed rulemaking, including varying cost estimates for applying certain fuel economy technologies to vehicles of different sizes and body styles. These estimates were modified for purposes of this analysis as a result of extensive consultations among engineers from NHTSA, EPA, and the Volpe Center. Building on NHTSA's estimates developed for the MY 2011 CAFE final rule and EPA's Advanced Notice of Proposed Rulemaking, which relied on EPA's 2008 Staff Technical Report, the two agencies took a fresh look at technology cost and effectiveness values and incorporated FEV tear-down study results for purposes of this joint final rule under the National Program.

While NHTSA generally found that much of the cost information used in the MY 2011 final rule and EPA's 2008 Staff Report was consistent to a great extent, the agencies, in reconsidering information from many sources, revised the component costs of several major technologies including: turbocharging/downsizing, mild and strong hybrids, diesels, SGDI, and Valve Train Lift Technologies for purposes of the NPRM. In addition, based on FEV tear-down studies, the costs for turbocharging/downsizing, 6-, 7-, 8-speed automatic transmissions, and dual clutch transmissions were revised for this final rule.

The technology cost estimates used in this analysis are intended to represent manufacturers' direct costs for high-volume production of vehicles with these technologies and sufficient experience with their application so that all remaining cost reductions due to "learning curve" effects have been fully realized. However, NHTSA recognizes that manufacturers' actual costs for employing these technologies include additional outlays for accompanying design or engineering changes to models that use them, development and testing of prototype versions, recalibrating engine operating parameters, and integrating the technology with other attributes of the vehicle. Manufacturers' indirect costs for employing these technologies also include expenses for product development and integration, modifying assembly processes and training assembly workers to install them, increased expenses for operation and maintaining assembly lines, higher initial warranty costs for new technologies, any added expenses for selling and distributing vehicles that use these technologies, and manufacturer and dealer profit.

In previous CAFE rulemakings and in NHTSA's safety rulemakings, the agency has accounted for these additional costs by using a Retail Price Equivalent (RPE) multiplier of 1.5. For purposes of this rulemaking, based on recent work by EPA, NHTSA has applied indirect cost multipliers ranging from 1.11 to 1.64 to the estimates of vehicle manufacturers' direct costs for producing or acquiring each technology to improve fuel economy.[598] These multipliers vary with the complexity of each technology and the time frame over which costs are estimated. More complex technologies are associated with higher multipliers because of the larger increases in manufacturers' indirect costs for developing, producing (or procuring), and deploying these more complex technologies. The appropriate multipliers decline over time for technologies of all complexity levels, since increased familiarity and experience with their application is assumed to reduce manufacturers' indirect costs for employing them.

NHTSA and EPA received far fewer specific comments on technology cost estimates than in previous CAFE rulemakings, which suggests that most, although not all, stakeholders generally agreed with the agencies' assumptions. Several commenters supported the agencies' use of tear-down studies for developing some of the technology costs, largely citing the agencies' own reasons in support of that methodology. Some specific comments were received with regard to hybrid and other technology costs, to which the agencies are responding directly in Chapter 3 of the Joint TSD and in the agencies' respective FRIAs. Generally speaking, however, to the extent that commenters disagreed with the agencies' cost estimates, often the disagreement stemmed from assumptions about the technology's maturity, which the agencies have tried to account for in the analysis. These issues are discussed further in Chapter 3 of the TSD. Additionally, we note that technology costs will also be addressed in the upcoming revised NAS report.

With regard to the indirect cost multiplier approach, commenters also generally supported the higher level of specificity provided by the ICM approach compared to the RPE approach, although some commenters suggested specific refinements to the measurement of ICMs. For example, while the automotive dealer organization NADA argued that all dealer costs of sales should be included in "dealer profit," another commenter noted expressly that the ICM does not include profits. Comments from ICCT also argued in favor of revising the "technology complexity" component of the ICM to account for the complexity of integrating a new technology into a vehicle, rather than for only the complexity of producing the technology itself. These comments and others on the ICM are addressed in Chapter 3 of the Joint TSD and in the agencies' respective FRIAs. NHTSA notes that profits were not included in the indirect cost estimates of this rule, and also that NHTSA's sensitivity analysis, presented in Chapter X of the FRIA, indicates that using the 1.5 RPE multiplier would result in higher costs compared to today's final rule costs incorporating the ICM multiplier, although even with those higher costs the 1.5 RPE analysis still resulted in significant net benefits for the rulemaking as a whole. NHTSA continues to study this issue and may employ a different approach in future rulemakings.

b. Potential Opportunity Costs of Improved Fuel Economy

An important concern is whether achieving the fuel economy improvements required by alternative CAFE standards might result in manufacturers compromising the performance, carrying capacity, safety, or comfort of their vehicle models. To the extent that it does so, the resulting sacrifice in the value of these attributes to consumers represents an additional cost of achieving the required improvements in fuel economy. (This possibility is addressed in detail in Section IV.G.6.) Although exact dollar values of these attributes to consumers are difficult to infer, differences in vehicle purchase prices and buyers' choices among competing models that feature varying combinations of these characteristics clearly demonstrate that changes in these attributes affect the utility and economic value that vehicles offer to potential buyers.[599]

[598] NHTSA notes that in addition to the technology cost analysis employing this "ICM" approach, the FRIA contains a sensitivity analysis using a technology cost multiplier of 1.5.

[599] *See, e.g.,* Kleit A.N., 1990. "The Effect of Annual Changes in Automobile Fuel Economy Standards." Journal of Regulatory Economics 2: 151–172 (Docket EPA–HQ–OAR–2009–0472–0015); Berry, Steven, James Levinsohn, and Ariel Pakes, 1995. "Automobile Prices in Market Equilibrium," Econometrica 63(4): 841–940 (Docket NHTSA–2009–0059–0031); McCarthy, Patrick S., 1996.

NHTSA and EPA have approached this potential problem by developing cost estimates for fuel economy-improving technologies that include any additional manufacturing costs that would be necessary to maintain the originally planned levels of performance, comfort, carrying capacity, and safety of any light-duty vehicle model to which those technologies are applied. In doing so, the agencies followed the precedent established by the 2002 NAS Report, which estimated "constant performance and utility" costs for fuel economy technologies. NHTSA has used these as the basis for its continuing efforts to refine the technology costs it uses to analyze manufacturer's costs for complying with alternative passenger car and light truck CAFE standards for MYs 2012–2016. Although the agency has revised its estimates of manufacturers' costs for some technologies significantly for use in this rulemaking, these revised estimates are still intended to represent costs that would allow manufacturers to maintain the performance, carrying capacity, and utility of vehicle models while improving their fuel economy.

Although we believe that our cost estimates for fuel economy-improving technologies include adequate provision for accompanying outlays that are necessary to prevent any significant degradation in other attributes that vehicle owners value, it is possible that they do not include adequate allowance for the necessary efforts by manufacturers to prevent sacrifices in these attributes on all vehicle models. If this is the case, the true economic costs of achieving higher fuel economy should include the opportunity costs to vehicle owners of any sacrifices in vehicles' performance, carrying capacity, and utility, and omitting these will cause the agency's estimated technology costs to underestimate the true economic costs of improving fuel economy.

Recognizing this possibility, it would be desirable to estimate explicitly the changes in vehicle buyers' welfare from the combination of higher prices for new vehicle models, increases in their fuel economy, and any accompanying changes in vehicle attributes such as performance, passenger- and cargo-carrying capacity, or other dimensions of utility. The *net* change in buyer's welfare that results from the combination of these changes would provide a more accurate estimate of the true economic costs for improving fuel economy. Although the agency has been unable to develop a procedure for doing so as part of this rulemaking, Section IV.G.6. below includes a detailed analysis and discussion of how omitting possible changes in vehicle attributes other than their prices and fuel economy might affect its estimates of benefits and costs resulting from the standards this rule establishes.

c. The On-Road Fuel Economy "Gap"

Actual fuel economy levels achieved by light-duty vehicles in on-road driving fall somewhat short of their levels measured under the laboratory-like test conditions used by EPA to establish its published fuel economy ratings for different models. In analyzing the fuel savings from alternative CAFE standards, NHTSA has previously adjusted the actual fuel economy performance of each light truck model downward from its rated value to reflect the expected size of this on-road fuel economy "gap." On December 27, 2006, EPA adopted changes to its regulations on fuel economy labeling, which were intended to bring vehicles' rated fuel economy levels closer to their actual on-road fuel economy levels.[600]

In its Final Rule, EPA estimated that actual on-road fuel economy for light-duty vehicles averages 20 percent lower than published fuel economy levels. For example, if the overall EPA fuel economy rating of a light truck is 20 mpg, the on-road fuel economy actually achieved by a typical driver of that vehicle is expected to be 16 mpg (20*.80). NHTSA employed EPA's revised estimate of this on-road fuel economy gap in its analysis of the fuel savings resulting from alternative CAFE standards evaluated in the MY 2011 final rule.

For purposes of this final rule, NHTSA conducted additional analysis of this issue. The agency used data on the number of passenger cars and light trucks of each model year that were registered for use during calendar years 2000 through 2006, average rated fuel economy for passenger cars and light trucks produced during each model year, and estimates of average miles driven per year by cars and light trucks of different ages. These data were combined to develop estimates of the average fuel economy that the U.S. passenger vehicle fleet *would have achieved* from 2000 through 2006 if cars and light trucks of each model year achieved the same fuel economy levels in actual on-road driving as they did under test conditions when new.

NHTSA compared these estimates to the Federal Highway Administration's (FHWA) published values of actual on-road fuel economy for passenger cars and light trucks during each of those years.[601] FHWA's estimates of actual fuel economy for passenger cars averaged 22 percent lower than NHTSA's estimates of its fleet-wide average value under test conditions over this period, while FHWA's estimates for light trucks averaged 17 lower than NHTSA's estimates of average light truck fuel economy under test conditions. These results appear to confirm that the 20 percent on-road fuel economy discount or gap represents a reasonable estimate for use in evaluating the fuel savings likely to result from alternative CAFE standards for MY 2012–2016 vehicles.

NHTSA received no comments on this issue in response to the NPRM. Accordingly, it has not revised its estimate of the on-road fuel economy gap from the 20 percent figure used previously.

d. Fuel Prices and the Value of Saving Fuel

Projected future fuel prices are a critical input into the economic analysis of alternative CAFE standards, because they determine the value of fuel savings both to new vehicle buyers and to society. NHTSA relied on the most recent fuel price projections from the U.S. Energy Information Administration's (EIA) *Annual Energy Outlook* (AEO) for this analysis. Specifically, we used the AEO 2010 Early Release (December 2009) Reference Case forecasts of inflation-adjusted (constant-dollar) retail gasoline and diesel fuel prices, which represent the EIA's most up-to-date estimate of the most likely course of future prices for petroleum products.[602] This forecast is

"Market Price and Income Elasticities of New Vehicle Demands." Review of Economics and Statistics 78: 543–547 (Docket NHTSA–2009–0059–0039); and Goldberg, Pinelopi K., 1998. "The Effects of the Corporate Average Fuel Efficiency Standards in the U.S.," *Journal of Industrial Economics* 46(1): 1–33 (Docket EPA–HQ–OAR–2009–0472–0017).

[600] 71 FR 77871 (Dec. 27, 2006).

[601] Federal Highway Administration, Highway Statistics, 2000 through 2006 editions, Table VM–1; *See http://www.fhwa.dot.gov/policy/ohpi/hss/hsspubs.cfm* (last accessed March 1, 2010).

[602] Energy Information Administration, Annual Energy Outlook 2010 Early Release, Reference Case (December 2009), Table A12. *Available at http://www.eia.doe.gov/oiaf/aeo/pdf/appa.pdf, p. 25* (last accessed March 1, 2010). These forecasts reflect the provisions of the Energy Independence and Security Act of 2007 (EISA), including the requirement that the combined mpg level of U.S. cars and light trucks reach 35 miles per gallon by model year 2020. Because this provision would be expected to reduce future U.S. demand for gasoline and lead to a decline in its future price, there is some concern about whether the AEO 2010 forecast of fuel prices partly reflects the increases in CAFE standards considered in this rule, and thus whether it is suitable for valuing the projected reductions in fuel use. In response to this concern, the agency

Continued

somewhat lower than the AEO 2009 Reference Case forecast the agency relied upon in the analysis it conducted for the NPRM. Over the period from 2010 to 2030, the AEO 2010 Early Release Reference Case forecast of retail gasoline prices used in this analysis averages $3.18 per gallon (in 2007 dollars), in contrast to the $3.38 per gallon average price for that same period forecast in the earlier AEO 2009 Reference Case and used in the NPRM analysis.

While NHTSA relied on the forecasts of fuel prices presented in AEO 2008 High Price Case in the MY 2011 final rule, we noted at the time that we were relying on that estimate primarily because volatility in the oil market appeared to have overtaken the Reference Case. We also anticipated that the Reference Case forecasts would be significantly higher in subsequent editions of AEO, and that in future rulemaking analyses the agency would be likely to rely on the Reference Case rather than High Price Case forecasts. In fact, both EIA's AEO 2009 Reference Case and its subsequent AEO 2010 Early Release Reference Case forecasts project *higher* retail fuel prices in most future years than those forecast in the High Price Case from AEO 2008. NHTSA is thus confident that the AEO 2010 Early Release Reference Case is an appropriate forecast for projected future fuel prices.

NHTSA and EPA received relatively few comments on the fuel prices used in the NPRM analysis, compared to previous CAFE rulemakings. Two commenters, CARB and NADA, supported the use of AEO's Reference Case for use in the agencies' analysis, although they disagreed on the agencies' use of the High and Low Price Cases for sensitivities. Both commenters emphasized the sensitivity of the market and the agencies' analysis to higher and lower gas prices, and on that basis, CARB supported the use of the High and Low Price Cases in sensitivity analysis but urged the agencies to caveat the "Reference Case" results more explicitly. In contrast, NADA argued that the agencies should not use the High and Low Price Cases, because EIA does not assign specific probabilities to either of them. Only one commenter, James Adcock, argued that the agencies should use forecasts of future fuel prices other than those reported in AEO; Adcock stated that future fuel prices should be assumed to be higher than current pump prices.

Measured in constant 2007 dollars, the AEO 2010 Early Release Reference Case forecast of retail gasoline prices during calendar year 2010 is $2.44 per gallon, and rises gradually to $3.83 by the year 2035 (these values include Federal, State and local taxes). However, the agency's analysis of the value of fuel savings over the lifetimes of MY 2012–2016 cars and light trucks requires forecasts extending through calendar year 2050, approximately the last year during which a significant number of MY 2016 vehicles will remain in service. To obtain fuel price forecasts for the years 2036 through 2050, the agency assumes that retail fuel prices will continue to increase after 2035 at the average annual rates projected for 2025 through 2035 in the AEO 2010 Early Release Reference Case.[603] This assumption results in a projected retail price of gasoline that reaches $4.49 in 2007 dollars during the year 2050.

The value of fuel savings resulting from improved fuel economy to buyers of light-duty vehicles is determined by the retail price of fuel, which includes Federal, State, and any local taxes imposed on fuel sales. The agency has updated the estimates of gasoline taxes it employed in the NPRM using the recent data on State fuel tax rates; expressed in 2007 dollars, Federal gasoline taxes are currently $0.178, while State and local gasoline taxes together average $0.231 per gallon, for a total tax burden of $0.401 per gallon. Because fuel taxes represent transfers of resources from fuel buyers to government agencies, however, rather than real resources that are consumed in the process of supplying or using fuel, NHTSA deducts their value from retail fuel prices to determine the true value of fuel savings resulting from more stringent CAFE standards to the U.S. economy.

NHTSA follows the assumptions used by EIA in AEO 2010 Early Release that State and local gasoline taxes will keep pace with inflation in nominal terms, and thus remain constant when expressed in constant dollars. In contrast, EIA assumes that Federal gasoline taxes will remain unchanged in *nominal* terms, and thus decline throughout the forecast period when expressed in constant dollars. These differing assumptions about the likely future behavior of Federal and State/local fuel taxes are consistent with recent historical experience, which reflects the fact that Federal as well as most State motor fuel taxes are specified on a cents-per-gallon rather than an *ad valorem* basis, and typically require legislation to change. The projected value of total taxes is deducted from each future year's forecast of retail gasoline and diesel prices to determine the economic value of each gallon of fuel saved during that year as a result of improved fuel economy. Subtracting fuel taxes from the retail prices forecast in AEO 2010 Early Release results in a projected value for saving gasoline of $2.04 per gallon during 2010, rising to $3.48 per gallon by the year 2035,and averaging $2.91 over this 25-year period.

Although the Early Release of AEO 2010 contains only the Reference Case forecast, EIA includes "High Price Case" and "Low Price Case" forecasts in each year's complete AEO, which reflect uncertainties regarding future levels of oil production and demand. For this final rule, NHTSA has continued to use the most recent "High Price Case" and "Low Price Case" forecasts available, which are those from AEO 2009. While NHTSA recognizes that these forecasts are not probabilistic, as NADA commented, we continue to believe that using them for sensitivity analyses provides valuable information for agency decision-makers, because it illustrates the sensitivity of the rule's primary economic benefit resulting from uncertainty about future growth in world demand for petroleum energy and the strategic behavior of oil suppliers.

These alternative scenarios project retail gasoline prices that range from a low of $2.02 to a high of $5.04 per gallon during 2020, and from $2.04 to $5.47 per gallon during 2030 (all figures in 2007 dollars). In conjunction with our assumption that fuel taxes will remain constant in real or inflation-adjusted terms over this period, these forecasts imply pre-tax values of saving fuel ranging from $1.63 to $4.65 per gallon during 2020, and from $1.66 to $5.09 per gallon in 2030 (again, all figures are in constant 2007 dollars). In conducting the analysis of uncertainty in benefits and costs from alternative CAFE standards required by OMB, NHTSA evaluated the sensitivity of its benefits estimates to these alternative forecasts of future fuel prices. Detailed

notes that EIA issued a revised version of AEO 2008 in June 2008, which modified its previous December 2007 Early Release of AEO 2008 to reflect the effects of then recently-passed EISA legislation. The fuel price forecasts reported in EIA's Revised Release of AEO 2008 differed by less than one cent per gallon throughout the entire forecast period (2008–2030) from those previously issued as part of its initial release of AEO 2008. Thus, the agencies are reasonably confident that the fuel price forecasts presented in AEO 2010 and used to analyze the value of fuel savings projected to result from this rule are not unduly affected by the CAFE provisions of EISA.

[603] This projection uses the rate of increase in fuel prices for 2020–2030 rather than that over the complete forecast period (2009–2030) because there is extreme volatility in the forecasts for the years 2009 through approximately 2020. Using the average rate of change over the complete 2009–2030 forecast period would result in projections of declining fuel prices after 2030.

results and discussion of this sensitivity analysis can be found in the FRIA. Generally, however, this analysis confirmed that as several commenters suggested, the primary economic benefit resulting from the rule—the value of fuel savings—is quite sensitive to forecast fuel prices.

e. Consumer Valuation of Fuel Economy and Payback Period

In estimating the impacts on vehicle sales that would result from alternative CAFE standards to potential vehicle buyers, NHTSA assumes, as in the MY 2011 final rule, that potential vehicle buyers value the resulting fuel savings over only part of the expected lifetime of the vehicles they purchase. Specifically, we assume that buyers value fuel savings over the first five years of a new vehicle's lifetime, and discount the value of these future fuel savings at a 3 percent annual rate. The five-year figure represents approximately the current average term of consumer loans to finance the purchase of new vehicles. We recognize that the period over which individual buyers finance new vehicle purchases may not correspond exactly to the time horizons they apply in valuing fuel savings from higher fuel economy.

The agency deducts the discounted present value of fuel savings over the first five years of a vehicle model's lifetime from the technology costs incurred by its manufacturer to improve that model's fuel economy to determine the increase in its "effective price" to buyers. The Volpe model uses these estimates of effective costs for increasing the fuel economy of each vehicle model to identify the order in which manufacturers would be likely to select models for the application of fuel economy-improving technologies in order to comply with stricter standards. The average value of the resulting increase in effective cost from each manufacturer's simulated compliance strategy is also used to estimate the impact of alternative standards on its total sales for future model years.

One commenter, NADA, supported the agency's assumption of a five-year period for buyers' valuation of fuel economy, on the basis that the considerable majority of consumers seek to recoup costs quickly. However, NADA also encouraged the agencies to ensure that purchaser finance costs, opportunity costs of vehicle ownership, and increased maintenance costs were accounted for. Another commenter, James Adcock, argued that the assumption of a five-year period was irrational, because it did not account for the fact that first purchasers will be able to sell a higher-mpg vehicle for more money than a lower-mpg vehicle.

In response to these comments, the agency notes that it estimates the aggregate value to the U.S. economy of fuel savings resulting from alternative standards—or their "social" value—over the *entire* expected lifetimes of vehicles manufactured under those standards, rather than over the shorter 5-year "payback period" we assume that manufacturers employ to represent the preferences of vehicle buyers. The 5-year payback period is only utilized to identify the likely sequence of improvements in fuel economy that manufacturers are likely to make to their different vehicle models. The procedure the agency uses for calculating lifetime fuel savings is discussed in detail in the following section, while alternative assumptions about the time horizon over which potential buyers consider fuel savings in their vehicle purchasing decisions are analyzed and discussed in detail in Section IV.G.6 below.

Valuing fuel savings over vehicles' entire lifetimes in effect recognizes the gains that future vehicle owners will receive, even if initial purchasers of higher-mpg models are not able to recover the entire remaining value of fuel savings when they re-sell those vehicles. The agency acknowledges, however, that it has not accounted for any effects of increased financing costs for purchasing vehicles with higher fuel economy or increased expenses for maintaining them on benefits to vehicle owners, over either the short-run payback period or the full lifetimes of vehicles.

f. Vehicle Survival and Use Assumptions

NHTSA's first step in estimating lifetime fuel consumption by vehicles produced during a model year is to calculate the number expected to remain in service during each year following their production and sale.[604] This is calculated by multiplying the number of vehicles originally produced during a model year by the proportion typically expected to remain in service at their age during each later year, often referred to as a "survival rate."

As discussed in more detail in Section II.B.3 above and in Chapter 1 of the TSD, to estimate production volumes of passenger cars and light trucks for individual manufacturers, NHTSA relied on a baseline market forecast constructed by EPA staff beginning with MY 2008 CAFE certification data. After constructing a MY 2008 baseline, EPA and NHTSA used projected car and truck volumes for this period from Energy Information Administration's (EIA's) Annual Energy Outlook (AEO) 2009 in the NPRM analysis.[605] For the analysis supporting this final rule, NHTSA substituted the revised forecasts of total volume reported in EIA's Annual Energy Outlook 2010 Early Release. However, Annual Energy Outlook forecasts only total car and light truck sales, rather than sales at the manufacturer and model-specific level, which the agencies require in order to estimate the effects new standards will have on individual manufacturers.[606]

To estimate sales of individual car and light truck models produced by each manufacturer, EPA purchased data from CSM Worldwide and used its projections of the number of vehicles of each type (car or truck) that will be produced and sold by manufacturers in model years 2011 through 2015.[607] This provided year-by-year estimates of the percentage of cars and trucks sold by each manufacturer, as well as the sales percentages accounted for by each vehicle market segment. (The distributions of car and truck sales by manufacturer and by market segment for the 2016 model year and beyond were assumed to be the same as CSM's forecast for the 2015 calendar year.) Normalizing these percentages to the

[604] Vehicles are defined to be of age 1 during the calendar year corresponding to the model year in which they are produced; thus for example, model year 2000 vehicles are considered to be of age 1 during calendar year 2000, age 2 during calendar year 2001, and to reach their maximum age of 26 years during calendar year 2025. NHTSA considers the maximum lifetime of vehicles to be the age after which less than 2 percent of the vehicles originally produced during a model year remain in service. Applying these conventions to vehicle registration data indicates that passenger cars have a maximum age of 26 years, while light trucks have a maximum lifetime of 36 years. See Lu, S., NHTSA, Regulatory Analysis and Evaluation Division, "Vehicle Survivability and Travel Mileage Schedules," DOT HS 809 952, 8–11 (January 2006). *Available at http://www-nrd.nhtsa.dot.gov/Pubs/809952.pdf* (last accessed March 1, 2010).

[605] *Available at http://www.eia.doe.gov/oiaf/aeo/index.html* (last accessed March 15, 2010). NHTSA and EPA made the simplifying assumption that projected sales of cars and light trucks during each calendar year from 2012 through 2016 represented the likely production volumes for the corresponding model year. The agency did not attempt to establish the exact correspondence between projected sales during individual calendar years and production volumes for specific model years.

[606] Because AEO 2009's "car" and "truck" classes did not reflect NHTSA's recent reclassification (in March 2009 for enforcement beginning MY 2011) of many two wheel drive SUVs from the nonpassenger (*i.e.,* light truck) fleet to the passenger car fleet, EPA staff made adjustments to account for such vehicles in the baseline.

[607] EPA also considered other sources of similar information, such as J.D. Powers, and concluded that CSM was better able to provide forecasts at the requisite level of detail for most of the model years of interest.

total car and light truck sales volumes projected for 2012 through 2016 in AEO 2009 provided manufacturer-specific market share and model-specific sales estimates for those model years. The volumes were then scaled to AEO 2010 total volume for each year.

To estimate the number of passenger cars and light trucks originally produced during model years 2012 through 2016 that will remain in use during each subsequent year, the agency applied age-specific survival rates for cars and light trucks to these adjusted forecasts of passenger car and light truck sales. In 2008, NHTSA updated its previous estimates of car and light truck survival rates using the most current registration data for vehicles produced during recent model years, in order to ensure that they reflected recent increases in the durability and expected life spans of cars and light trucks.[608]

The next step in estimating fuel use is to calculate the total number of miles that model year 2012–2016 cars and light trucks remaining in use will be driven each year. To estimate total miles driven, the number projected to remain in use during each future year is multiplied by the average number of miles they are expected to be driven at the age they will reach in that year. The agency estimated annual usage of cars and light trucks of each age using data from the Federal Highway Administration's 2001 National Household Transportation Survey (NHTS).[609] Because these estimates reflect the historically low gasoline prices that prevailed at the time the 2001 NHTS was conducted, however, NHTSA adjusted them to account for the effect on vehicle use of subsequent increases in fuel prices. Details of this adjustment are provided in Chapter VIII of the FRIA and Chapter 4 of the Joint TSD.

Increases in average annual use of cars and light trucks have been an important source of historical growth in the total number of miles they are driven each year. To estimate future growth in their average annual use for purposes of this rulemaking, NHTSA calculated the rate of growth in the adjusted mileage schedules derived from the 2001 NHTS necessary for *total* car and light truck travel to increase at the rate forecast in the AEO 2010 Early Release Reference Case.[610] This rate was calculated to be consistent with future changes in the overall size and age distributions of the U.S. passenger car and light truck fleets that result from the agency's forecasts of total car and light truck sales and updated survival rates. The resulting growth rate in average annual car and light truck use of 1.15 percent per year was applied to the mileage figures derived from the 2001 NHTS to estimate annual mileage during each year of the expected lifetimes of MY 2012–2016 cars and light trucks.[611]

Finally, the agency estimated total fuel consumption by passenger cars and light trucks remaining in use each year by dividing the total number of miles surviving vehicles are driven by the fuel economy they are expected to achieve under each alternative CAFE standard. Each model year's total lifetime fuel consumption is the sum of fuel use by the cars or light trucks produced during that model year during each year of their life spans. In turn, the *savings* in a model year's lifetime fuel use that will result from each alternative CAFE standard is the difference between its lifetime fuel use at the fuel economy level it attains under the Baseline alternative, and its lifetime fuel use at the higher fuel economy level it is projected to achieve under that alternative standard.[612]

NHTSA and EPA received no comments on their respective NPRMs indicating that these assumptions should be updated or reconsidered. Thus the agencies have continued to employ them in the analysis supporting this final rule.

g. Accounting for the Fuel Economy Rebound Effect

The fuel economy rebound effect refers to the fraction of fuel savings expected to result from an increase in vehicle fuel economy—particularly an increase required by the adoption of higher CAFE standards—that is offset by additional vehicle use. The increase in vehicle use occurs because higher fuel economy reduces the fuel cost of driving, typically the largest single component of the monetary cost of operating a vehicle, and vehicle owners respond to this reduction in operating costs by driving slightly more. By lowering the marginal cost of vehicle use, improved fuel economy may lead to an increase in the number of miles vehicles are driven each year and over their lifetimes. Even with their higher fuel economy, this additional driving consumes some fuel, so the rebound effect reduces the net fuel savings that result when new CAFE standards require manufacturers to improve fuel economy.

The magnitude of the rebound effect is an important determinant of the actual fuel savings that are likely to result from adopting stricter CAFE standards. Research on the magnitude of the rebound effect in light-duty vehicle use dates to the early 1980s, and generally concludes that a statistically significant rebound effect occurs when vehicle fuel efficiency improves.[613] The agency reviewed studies of the rebound effect it had previously relied upon, considered more recently published estimates, and developed new estimates of its magnitude for purposes of the NPRM.[614] Recent studies provide some evidence that the rebound effect has been declining over time, and may decline further over the immediate future if incomes rise faster than gasoline prices. This result appears

[608] Lu, S., NHTSA, Regulatory Analysis and Evaluation Division, "Vehicle Survivability and Travel Mileage Schedules," DOT HS 809 952, 8–11 (January 2006). *Available at http://www-nrd.nhtsa.dot.gov/Pubs/809952.pdf* (last accessed March 1, 2010). These updated survival rates suggest that the expected lifetimes of recent-model passenger cars and light trucks are 13.8 and 14.5 years.

[609] For a description of the Survey, *See http://nhts.ornl.gov/quickStart.shtml* (last accessed March 1, 2010).

[610] This approach differs from that used in the MY 2011 final rule, where it was assumed that future growth in the total number of cars and light trucks in use resulting from projected sales of new vehicles was adequate by itself to account for growth in total vehicle use, without assuming continuing growth in average vehicle use.

[611] While the adjustment for future fuel prices reduces average mileage at each age from the values derived from the 2001 NHTS, the adjustment for expected future growth in average vehicle use increases it. The net effect of these two adjustments is to increase expected lifetime mileage by about 18 percent significantly for both passenger cars and about 16 percent for light trucks.

[612] To illustrate these calculations, the agency's adjustment of the AEO 2009 Revised Reference Case forecast indicates that 9.26 million passenger cars will be produced during 2012, and the agency's updated survival rates show that 83 percent of these vehicles, or 7.64 million, are projected to remain in service during the year 2022, when they will have reached an age of 10 years. At that age, passenger achieving the fuel economy level they are projected to achieve under the Baseline alternative are driven an average of about 800 miles, so surviving model year 2012 passenger cars will be driven a total of 82.5 billion miles (= 7.64 million surviving vehicles × 10,800 miles per vehicle) during 2022. Summing the results of similar calculations for each year of their 26-year maximum lifetime, model year 2012 passenger cars will be driven a total of 1,395 billion miles under the Baseline alternative. Under that alternative, they are projected to achieve a test fuel economy level of 32.4 mpg, which corresponds to actual on-road fuel economy of 25.9 mpg (= 32.4 mpg × 80 percent). Thus their lifetime fuel use under the Baseline alternative is projected to be 53.9 billion gallons (= 1,395 billion miles divided by 25.9 miles per gallon).

[613] Some studies estimate that the long-run rebound effect is significantly larger than the immediate response to increased fuel efficiency. Although their estimates of the adjustment period required for the rebound effect to reach its long-run magnitude vary, this long-run effect is most appropriate for evaluating the fuel savings and emissions reductions resulting from stricter standards that would apply to future model years.

[614] For details of the agency's analysis, see Chapter VIII of the PRIA and Chapter 4 of the draft Joint TSD accompanying this proposed rule.

plausible, because the responsiveness of vehicle use to variation in fuel costs is expected to decline as they account for a smaller proportion of the total monetary cost of driving, which has been the case until very recently. At the same time, rising personal incomes would be expected to reduce the sensitivity of vehicle use to fuel costs as the time component of driving costs—which is likely to be related to income levels—accounts for a larger fraction the total cost of automobile travel.

NHTSA developed new estimates of the rebound effect by using national data on light-duty vehicle travel over the period from 1950 through 2006 to estimate various econometric models of the relationship between vehicle miles-traveled and factors likely to influence it, including household income, fuel prices, vehicle fuel efficiency, road supply, the number of vehicles in use, vehicle prices, and other factors.[615] The results of NHTSA's analysis are consistent with the findings from other recent research: the average long-run rebound effect ranged from 16 percent to 30 percent over the period from 1950 through 2007, while estimates of the rebound effect in 2007 range from 8 percent to 14 percent. Projected values of the rebound effect for the period from 2010 through 2030, which the agency developed using forecasts of personal income, fuel prices, and fuel efficiency from AEO 2009's Reference Case, range from 4 percent to 16 percent, depending on the specific model used to generate them.

In light of these results, the agency's judgment is that the apparent decline over time in the magnitude of the rebound effect justifies using a value for future analysis that is lower than historical estimates, which average 15–25 percent. Because the lifetimes of vehicles affected by the alternative CAFE standards considered in this rulemaking will extend from 2012 until nearly 2050, a value that is significantly lower than historical estimates appears to be appropriate. Thus NHTSA used a 10 percent rebound effect in its analysis of fuel savings and other benefits from higher CAFE standards for the NPRM. The agency also sought comment on other alternatives for estimating the rebound effect, such as whether it would be appropriate to use the price elasticity of demand for gasoline, or other alternative approaches, to guide the choice of a value for the rebound effect.

[615] The agency used several different model specifications and estimation procedures to control for the effect of fuel prices on fuel efficiency in order to obtain accurate estimates of the rebound effect.

NHTSA and EPA received far fewer comments on the rebound effect than were previously received to CAFE rulemakings. Only one commenter, NJ DEP, expressly supported the agencies' assumption of 10 percent for the rebound effect; other commenters (CARB, CBD, ICCT) argued that 10 percent should be the absolute maximum value and that the rebound effect assumed by the agencies should be lower, and would also be expected to decline over time. ICCT added that the price elasticity of gasoline demand could be a useful comparison for the rebound effect, but should not be used to derive it. Other commenters argued that a rebound effect either was unlikely to occur (James Hyde), or was unlikely to produce a uniform increase in use of all vehicles with improved fuel economy (Missouri DNR). NADA argued, in contrast, that the agencies had not provided sufficient justification for lowering the rebound effect to 10 percent from the "historically justified" range of 15 to 30 percent.

The agency's interpretation of historical and recent evidence on the magnitude of the rebound effect is that a significant fuel economy rebound effect exists, and commenters did not provide any additional data or analysis to justify revising our initial estimates of the rebound effect. Therefore, the data available at this time do not justify using a rebound effect below the 10 percent figure employed in its NPRM analysis. NHTSA believes that projections of a *continued* decline in the magnitude of the rebound effect are unrealistic because they assume the rate at which it declines in response to increasing incomes remain constant, and in some cases imply that the rebound effect will become negative in the near future. In addition, the continued increases in fuel prices used in this analysis will tend to increase the magnitude of the rebound effect, thus offsetting part of the effect of rising incomes. As the preceding discussion indicates, there is a wide range of estimates for both the historical magnitude of the rebound effect and its projected future value, and there is some evidence that the magnitude of the rebound effect appears to be declining over time. Nevertheless, NHTSA requires a single point estimate for the rebound effect as an input to its analysis, although a range of estimates can be used to test the sensitivity to uncertainty about its exact magnitude. For the final rule, NHTSA chose to use 10 percent as its primary estimate of the rebound effect, with a range of 5–15 percent for use in sensitivity testing.

The 10 percent figure is well below those reported in almost all previous research, and it is also below most estimates of the historical and current magnitude of the rebound effect developed by NHTSA. However, other recent research—particularly that conducted by Small and Van Dender and by Greene—reports persuasive evidence that the magnitude of the rebound effect is likely to be declining over time, and the forecasts developed by NHTSA also suggest that this is likely to be the case. As a consequence, NHTSA concluded that a value below the historical estimates reported here is likely to provide a more reliable estimate of its magnitude during the future period spanned by NHTSA's analysis of the impacts of this rule. The 10 percent estimate meets this condition, since it lies below the 15–30 percent range of estimates for the historical rebound effect reported in most previous research, and at the upper end of the 5–10 percent range of estimates for the future rebound effect reported in the recent studies by Small and Van Dender and by Greene. It also lies within the 3–16 percent range of forecasts of the future magnitude of the rebound effect developed by NHTSA in its recent research. In summary, the 10 percent value was not derived from a single point estimate from a particular study, but instead represents a reasonable compromise between the historical estimates and the projected future estimates. NHTSA will continue to review this estimate of the rebound effect in future rulemakings, but the agency has continued to use the 10 percent rebound effect over the entire future period spanned by the analysis it conducted for this final rule.

h. Benefits From Increased Vehicle Use

The increase in vehicle use from the rebound effect provides additional benefits to their owners, who may make more frequent trips or travel farther to reach more desirable destinations. This additional travel provides benefits to drivers and their passengers by improving their access to social and economic opportunities away from home. As evidenced by their decisions to make more frequent or longer trips when improved fuel economy reduces their costs for driving, the benefits from this additional travel exceed the costs drivers and passengers incur in making more frequent or longer trips.

The agency's analysis estimates the economic benefits from increased rebound-effect driving as the sum of fuel costs drivers incur plus the consumer surplus they receive from the additional

accessibility it provides.[616] Because the increase in travel depends on the extent of improvement in fuel economy, the value of benefits it provides differs among model years and alternative CAFE standards. Under even those alternatives that would impose the highest standards, however, the magnitude of these benefits represents a small fraction of total benefits. Because no comments addressed this issue of benefits from increased vehicle use or the procedure used to estimate them, the agencies have finalized their proposed assumptions for purposes of the final rule analysis.

i. The Value of Increased Driving Range

Improving vehicles' fuel economy may also increase their driving range before they require refueling. By reducing the frequency with which drivers typically refuel, and by extending the upper limit of the range they can travel before requiring refueling, improving fuel economy thus provides some additional benefits to their owners.[617] NHTSA re-examined this issue for purposes of this rulemaking, and found no information in comments or elsewhere that would cause the agency to revise its previous approach. Since no direct estimates of the value of extended vehicle range are available, NHTSA calculates directly the reduction in the annual number of required refueling cycles that results from improved fuel economy, and applies DOT-recommended values of travel time savings to convert the resulting time savings to their economic value.[618]

As an illustration, a typical small light truck model has an average fuel tank size of approximately 20 gallons. Assuming that drivers typically refuel when their tanks are 55 percent full (*i.e.,* 11 gallons in reserve), increasing this model's actual on-road fuel economy from 24 to 25 mpg would extend its driving range from 216 miles (= 9 gallons × 24 mpg) to 225 miles (= 9 gallons × 25 mpg). Assuming that it is driven 12,000 miles/year, this reduces the number of times it needs to be refueled each year from 55.6 (= 12,000 miles per year/216 miles per refueling) to 53.3 (= 12,000 miles per year/225 miles per refueling), or by 2.3 refuelings per year.

Weighted by the nationwide mix of urban and rural driving, personal and business travel in urban and rural areas, and average vehicle occupancy for driving trips, the DOT-recommended values of travel time per vehicle-hour is $24.64 (in 2007 dollars).[619]Assuming that locating a station and filling up requires a total of five minutes, the annual value of time saved as a result of less frequent refueling amounts to $4.72 (calculated as $5/60 \times 2.3 \times \$24.64$). This calculation is repeated for each future year that model year 2012–2016 cars and light trucks would remain in service. Like fuel savings and other benefits, the value of this benefit declines over a model year's lifetime, because a smaller number of vehicles originally produced during that model year remain in service each year, and those remaining in service are driven fewer miles.

Although the agencies received no public comments on the procedures they used to estimate the benefits from less frequent refueling or the magnitude of those benefits, we note also that the estimated value of less frequent refueling events is subject to a number of uncertainties which we discuss in detail in Chapter 4.1.11 of the Joint TSD, and the actual value could be higher or lower than the value presented here. Specifically, the analysis makes three assumptions: (a) That manufacturers will not adjust fuel tank capacities downward (from the current average of 19.3 gallons) when they improve the fuel economy of their vehicle models. (b) that the average fuel purchase (55 percent of fuel tank capacity) is the typical fuel purchase. (c) that 100 percent of all refueling is demand-based; *i.e.,* that every gallon of fuel which is saved would reduce the need to return to the refueling station. NHTSA has planned a new research project which will include a detailed study of refueling events, and which is expected to improve upon these assumptions. These assumptions and the upcoming research project are discussed in detail in Joint TSD Chapter 4.2.10, as well as in Chapter VIII of NHTSA's FRIA.

j. Added Costs From Congestion, Crashes and Noise

Increased vehicle use associated with the rebound effect also contributes to increased traffic congestion, motor vehicle accidents, and highway noise. NHTSA relies on estimates of per-mile congestion, accident, and noise costs caused by increased use of automobiles and light trucks developed by the Federal Highway Administration to estimate these increased costs.[620] NHTSA employed these estimates previously in its analysis accompanying the MY 2011 final rule, and after reviewing the procedures used by FHWA to develop them and considering other available estimates of these values, continues to find them appropriate for use in this final rule. The agency multiplies FHWA's estimates of per-mile costs by the annual increases in automobile and light truck use from the rebound effect to yield the estimated increases in congestion, accident, and noise externality costs during each future year.

One commenter, Inrix, Inc., stated that "deeply connected vehicles," *i.e.,* those with built-in computer systems to help drivers identify alternative routes to avoid congestion, are better able to avoid congestion than conventional vehicles. The commenter argued that increased use of these models may be less likely to contribute to increased congestion, and urged the agencies to consider the impact of this on their estimates of fuel use and GHG emissions. NHTSA notes that the number of such vehicles is extremely small at present, and is likely to remain modest for the model years affected by this rule, and has thus continued to employ the estimates of congestion costs from additional rebound-effect vehicle use that it utilized in the NPRM analysis. The agency recognizes that these vehicles may become sufficiently common in the future that their effect on the fuel economy drivers actually experience could become significant, but notes that to the extent this occurs,

[616] The consumer surplus provided by added travel is estimated as one-half of the product of the decline in fuel cost per mile and the resulting increase in the annual number of miles driven.

[617] If manufacturers respond to improved fuel economy by reducing the size of fuel tanks to maintain a constant driving range, the resulting cost saving will presumably be reflected in lower vehicle sales prices.

[618] See Department of Transportation, Guidance Memorandum, "The Value of Saving Travel Time: Departmental Guidance for Conducting Economic Evaluations," Apr. 9, 1997. *http://ostpxweb.dot.gov/policy/Data/VOT97guid.pdf* (last accessed March 1, 2010); update *available at http://ostpxweb.dot.gov/policy/Data/VOTrevision1_2-11-03.pdf* (last accessed March 1, 2010).

[619] The hourly wage rate during 2008 is estimated to average $25.50 when expressed in 2007 dollars. Personal travel in urban areas (which represents 94 percent of urban travel) is valued at 50 percent of the hourly wage rate, while business travel (the remaining 6 percent of urban travel) is valued at 100 percent of the hourly wage rate. For intercity travel, personal travel (87 percent of total intercity travel) is valued at 70 percent of the wage rate, while business travel (13 percent) is valued at 100 percent of the wage rate. The resulting values of travel time are $12.67 for urban travel and $17.66 for intercity travel, and must be multiplied by vehicle occupancy (1.6) to obtain the estimated values of time per vehicle hour in urban and rural driving. Finally, about 66% of driving occurs in urban areas, while the remaining 34% takes place in rural areas, and these percentages are used to calculate a weighted average of the value of time in all driving.

[620] These estimates were developed by FHWA for use in its 1997 *Federal Highway Cost Allocation Study; See http://www.fhwa.dot.gov/policy/hcas/final/index.htm* (last accessed March 1, 2010).

it would be reflected in the gap between test and on-road fuel economy. NHTSA will continue to monitor the production of such vehicles and their representation in the vehicle fleet in its future rulemakings.

k. Petroleum Consumption and Import Externalities

U.S. consumption and imports of petroleum products also impose costs on the domestic economy that are not reflected in the market price for crude petroleum, or in the prices paid by consumers of petroleum products such as gasoline. These costs include (1) higher prices for petroleum products resulting from the effect of U.S. oil import demand on the world oil price; (2) the risk of disruptions to the U.S. economy caused by sudden reductions in the supply of imported oil to the U.S.; and (3) expenses for maintaining a U.S. military presence to secure imported oil supplies from unstable regions, and for maintaining the strategic petroleum reserve (SPR) to cushion against resulting price increases.[621]

Higher U.S. imports of crude oil or refined petroleum products increase the magnitude of these external economic costs, thus increasing the true economic cost of supplying transportation fuels above their market prices. Conversely, lowering U.S. imports of crude petroleum or refined fuels by reducing domestic fuel consumption can reduce these external costs, and any reduction in their total value that results from improved fuel economy represents an economic benefit of more stringent CAFE standards, in addition to the value of saving fuel itself.

NHTSA has carefully reviewed its assumptions regarding the appropriate value of these benefits for this final rule. In analyzing benefits from its recent actions to increase light truck CAFE standards for model years 2005–07 and 2008–11, NHTSA relied on a 1997 study by Oak Ridge National Laboratory (ORNL) to estimate the value of reduced economic externalities from petroleum consumption and imports.[622] More recently, ORNL updated its estimates of the value of these externalities, using the analytic framework developed in its original 1997 study in conjunction with recent estimates of the variables and parameters that determine their value.[623] The updated ORNL study was subjected to a detailed peer review comissioned by EPA, and ORNL's estimates of the value of oil import externalities were subsequently revised to reflect their comments and recommendations of the peer reviewers.[624] Finally, at the request of EPA, ORNL further revised its 2008 estimates of external costs from U.S. oil imports to reflect recent changes in the outlook for world petroleum prices, as well as continuing changes in the structure and characteristics of global petroleum supply and demand.

These most recent revisions increase ORNL's estimates of the "monopsony premium" associated with U.S. oil imports, which measures the increase in payments from U.S. oil purchasers to foreign oil suppliers *beyond* the increased purchase price of petroleum itself that results when increased U.S. import demand raises the world price of petroleum.[625] However, the monopsony premium represents a financial transfer from consumers of petroleum products to oil producers, which does not entail the consumption of real economic resources. Thus reducing the magnitude of the monopsony premium produces no savings in real economic resources globally or domestically, although it does reduce the value of the financial transfer from U.S. consumers of petroleum products to foreign suppliers of petroleum. Accordingly, NHTSA's analysis of the benefits from adopting proposed CAFE standards for MY 2012–2016 cars and light trucks excluded the reduced value of monopsony payments by U.S. oil consumers that might result from lower fuel consumption by these vehicles. The agency sought comment on whether it would be reasonable to include the reduction in monopsony payments by U.S. consumers of petroleum products in their estimates of total economic benefits from reducing U.S. fuel consumption.

Commenters from NYU School of Law argued that monopsony payments should be treated as a distributional effect, not a standard efficiency benefit. An individual commenter, A.G. Fraas, also supported the agencies' exclusion of the monopsony benefit, arguing that it represents a pecuniary externality that should not be considered in benefit-cost analyses of governmental actions—again, in essence, that it represents a distributional effect. These comments support the agency's decision to exclude any reduction in monopsony premium payments that results from lower U.S. petroleum imports from its accounting of benefits from reduced fuel consumption. Thus the agency continues to exclude any reduction in monopsony premium payments from its estimates of benefits for the stricter CAFE standards this final rule establishes.

ORNL's most recently revised estimates of the increase in the expected costs associated with potential disruptions in U.S. petroleum imports imply that each gallon of imported fuel or petroleum saved reduces the expected costs of oil supply disruptions to the U.S. economy by $0.169 per gallon (in 2007$). In contrast to reduced monopsony premium payments, the reduction in expected disruption costs represents a real savings in resources, and thus contributes economic benefits *in addition* to the savings in fuel production costs that result from increasing fuel economy. NHTSA employs this value in its analysis of the economic benefits from adopting higher CAFE standards for MY 2012–2016 cars and light trucks.

A.G. Fraas commented on this proposed rule and felt that that magnitude of the economic disruption portion of the energy security benefit may be too high. He cites a recent paper written by Stephen P.A. Brown and Hillard G. Huntington, entitled "Estimating U.S. Oil Security Premiums" (September 2009). He commented that the Brown and Huntington premium associated with replacing oil imports by increased domestic oil production while keeping U.S. oil consumption unchanged (*i.e.,* "the cost of displacing a barrel of domestic oil with a barrel of imported oil") ranges from $2.17 per barrel in 2015 to $2.37 per barrel in 2030 (2007$), or $0.052 to $0.056 per gallon.

In contrast, this rule is not a domestic oil supply initiative, but is one intended to reduce domestic oil consumption and thereby also to a significant extent reduce U.S. oil imports. When NHTSA

[621] See, *e.g.,* Bohi, Douglas R. and W. David Montgomery (1982). Oil Prices, Energy Security, and Import Policy Washington, DC: Resources for the Future, Johns Hopkins University Press; Bohi, D.R., and M.A. Toman (1993). "Energy and Security: Externalities and Policies," Energy Policy 21:1093–1109 (Docket NHTSA–2009–0062–24); and Toman, M.A. (1993). "The Economics of Energy Security: Theory, Evidence, Policy," in A.V. Kneese and J.L. Sweeney, eds. (1993) (Docket NHTSA–2009–0062–23). Handbook of Natural Resource and Energy Economics, Vol. III. Amsterdam: North-Holland, pp. 1167–1218.

[622] Leiby, Paul N., Donald W. Jones, T. Randall Curlee, and Russell Lee, *Oil Imports: An Assessment of Benefits and Costs,* ORNL–6851, Oak Ridge National Laboratory, November 1, 1997. *Available at http://pzl1.ed.ornl.gov/ORNL6851.pdf* (last accessed March 1, 2010).

[623] Leiby, Paul N. "Estimating the Energy Security Benefits of Reduced U.S. Oil Imports," Oak Ridge National Laboratory, ORNL/TM–2007/028, Revised July 23, 2007. *Available at http://pzl1.ed.ornl.gov/energysecurity.html* (click on link below "Oil Imports Costs and Benefits") (last accessed March 1, 2010).

[624] *Peer Review Report Summary: Estimating the Energy Security Benefits of Reduced U.S. Oil Imports,* ICF, Inc., September 2007. *Available at* Docket No. NHTSA–2009–0059–0160.

[625] The reduction in payments from U.S. oil purchasers to domestic petroleum producers is not included as a benefit, since it represents a transfer that occurs entirely within the U.S. economy.

used the ORNL Energy Security Premium Analysis to calculate the energy security premium for this rule, it based the energy security premium on decreased demand for oil and oil products. The agency estimated that most of the decreased demand for oil and oil products would come from decreased imports of oil, given the inelasticity of U.S. supply and the modest estimated change in world oil price. The Brown and Huntington estimates for this change, considering the disruption component alone, are much in line with the ORNL estimates. For a reduction in U.S. consumption that largely leads to a reduction in imports, Brown and Huntington estimate a midpoint premium of $4.98 per barrel in 2015 rising to $6.82 per barrel by 2030 (2007$). The 2015 disruption premium estimate has an uncertainty range of $1.10 to $14.35 (2007$). The corresponding 2030 estimate from ORNL is only about 19 percent higher ($8.12/bbl), with an uncertainty range—$3.90 to $13.04—completely enclosed by that of Brown and Huntington. Thus, we conclude that the ORNL disruption security premium estimates for this rule is roughly consistent with the Brown and Huntington results.

Commenters from the NYU School of Law agreed that reduced disruption costs should be counted as a benefit, but stated that the agencies should disaggregate and exclude any reduction in wealth transfers that occur during oil shocks from their calculation of this benefit. NHTSA acknowledges that for consistency with its exclusion of reductions in monopsony premium payments from the benefits of reduced fuel consumption and petroleum imports, it may be necessary to exclude reductions in the wealth transfer component of macroeconomic disruption costs from the benefits of reducing U.S. petroleum imports. In future rulemakings, the agency will assess the arguments for excluding the wealth transfer component of disruption costs from its accounting of benefits from reducing domestic fuel consumption and U.S. petroleum imports, and explore whether it is practical to estimate its value separately and exclude it from the benefits calculations.

NHTSA's analysis does not include savings in budgetary outlays to support U.S. military activities among the benefits of higher fuel economy and the resulting fuel savings.[626] NHTSA's analysis of benefits from alternative CAFE standards for MY 2012–2016 also excludes any cost savings from maintaining a smaller SPR from its estimates of the external benefits of reducing gasoline consumption and petroleum imports. This view concurs with that of the recent ORNL study of economic costs from U.S. oil imports, which concludes that savings in government outlays for these purposes are unlikely to result from reductions in consumption of petroleum products and oil imports on the scale of those resulting from higher CAFE standards.

Commenters from the NYU School of Law stated that the agencies were justified in not including a value for military security, as long as the agencies incorporate the increased protection value of the SPR into their calculation of disruption effects. CBD and James Adcock disagreed, and stated that the agencies should, in fact, include a value for military security—CBD cited several studies, and Mr. Adcock presented his own value of $0.275 per gallon. CARB stated simply that the agencies should include a sensitivity analysis for military security at $0.15 per gallon, in addition to the $0.05 per gallon already evaluated. EDF also cited studies claiming a benefit for increased national security.

In response to the comments from CBD and Mr. Adcock, NHTSA's examination of the historical record indicates that while costs for U.S. military security may vary over time in response to long-term changes in the level of oil imports into the U.S., these costs are unlikely to decline in response to the small reductions in U.S. oil imports (relative to total oil imports) that are typically projected to result from raising CAFE standards for light-duty vehicles. U.S. military activities in regions that represent vital sources of oil imports also serve a broader range of security and foreign policy objectives than simply protecting oil supplies, and as a consequence are unlikely to vary significantly in response to the modest changes in the level of oil imports likely to be prompted by higher CAFE standards.

The agency does not find evidence in the historical record that Congress or the Executive Branch has ever attempted to calibrate U.S. military expenditures, overall force levels, or specific deployments to any measure of global oil market activity or U.S. reliance on petroleum imports, or to any calculation of the projected economic consequences of hostilities arising in the Persian Gulf. Instead, changes in U.S. force levels, deployments, and thus military spending in that region have been largely governed by political events, emerging threats, and other military and political considerations, rather than by shifts in U.S. oil consumption or imports. NHTSA thus concludes that the levels of U.S. military activity and expenditures are likely to remain unaffected by even relatively large changes in light duty vehicle fuel consumption, and has continued to exclude any reduction in these outlays from its estimates of the economic benefits resulting from lower U.S. fuel consumption and petroleum imports.

In response to the comments from the NYU School of Law, NHTSA will explore how it might estimate the contribution of the SPR to reducing potential macroeconomic costs from oil supply disruptions, although the agency notes that to some extent the existence of the SPR may already be reflected in the magnitude of price elasticities of the supplies of foreign oil available for import to the U.S. However, the agency notes that the size of the SPR has not appeared to change significantly in response to historical variation in U.S. petroleum consumption or imports, suggesting that its effect on the magnitude of potential macroeconomic costs from disruptions in petroleum imports may be limited.

Finally, in response to the comment from EDF, the agency notes that the value of $0.05 per gallon for the reduction in military security outlays that is used for sensitivity analysis assumes that the *entire* reduction in U.S. petroleum imports resulting from higher CAFE standards would reflect lower imports from Persian Gulf suppliers, that the estimate of annual U.S. military costs for securing Persian Gulf oil supplies reported by Delucchi and Murphy is correct, and that Congress would reduce *half* of these outlays in proportion to any decline in U.S. oil imports from the region. The $0.15 per gallon estimate recommended by CARB would thus require that U.S. military outlays to protect Persian Gulf oil supplies are three times as large as Delucchi and Murphy estimate, or that Congress would reduce military spending in that region more than in proportion to any reduction in U.S. petroleum imports originating there. Because it views these possibilities as unrealistic, NHTSA has continued to use the $0.05 figure in its sensitivity analysis, rather than the higher figure suggested.

Based on a detailed analysis of differences in fuel consumption,

[626] However, the agency conducted a sensitivity analysis of the potential effect of assuming that some reduction military spending would result from fuel savings and reduced petroleum imports in order to investigate its impacts on the standards and fuel savings.

petroleum imports, and imports of refined petroleum products among the Reference Case, High Economic Growth, and Low Economic Growth Scenarios presented in AEO 2009, NHTSA estimated that approximately 50 percent of the reduction in fuel consumption resulting from adopting higher CAFE standards is likely to be reflected in reduced U.S. imports of refined fuel, while the remaining 50 percent would reduce domestic fuel refining.[627] Of this latter figure, 90 percent is anticipated to reduce U.S. imports of crude petroleum for use as a refinery feedstock, while the remaining 10 percent is expected to reduce U.S. domestic production of crude petroleum.[628] Thus on balance, each 100 gallons of fuel saved as a consequence of higher CAFE standards is anticipated to reduce total U.S. imports of crude petroleum or refined fuel by 95 gallons.[629]

NHTSA employed this estimate in the analysis presented in the NPRM, and received no comments on the assumptions or data used to develop it. Hence the agency has continued to assume that each 100 gallons of fuel saved as a consequence of the CAFE standards established by this final rule will reduce total U.S. imports of crude petroleum or refined fuel by 95 gallons. NHTSA has applied the estimates of economic benefits from lower U.S. petroleum imports to the resulting estimate of reductions in imports of crude petroleum and refined fuel.

l. Air Pollutant Emissions

i. Changes in Criteria Air Pollutant Emissions

Criteria air pollutants emitted by vehicles and during fuel production include carbon monoxide (CO), hydrocarbon compounds (usually referred to as "volatile organic compounds," or VOC), nitrogen oxides (NO_X), fine particulate matter ($PM_{2.5}$), and sulfur oxides (SO_X). While reductions in domestic fuel refining and distribution that result from lower fuel consumption will reduce U.S. emissions of these pollutants, additional vehicle use associated with the rebound effect from higher fuel economy will increase their emissions. Thus the net effect of stricter CAFE standards on emissions of each criteria pollutant depends on the relative magnitudes of its reduced emissions in fuel refining and distribution, and increases in its emissions from vehicle use. Because the relationship between emissions in fuel refining and vehicle use is different for each criteria pollutant, the net effect of fuel savings from the proposed standards on total emissions of each pollutant is likely to differ. We note that any benefits in terms of criteria air pollutant reductions resulting from this rule would not be direct benefits.

With the exception of SO_2, NHTSA calculated annual emissions of each criteria pollutant resulting from vehicle use by multiplying its estimates of car and light truck use during each year over their expected lifetimes by per-mile emission rates appropriate to each vehicle type, fuel, model year, and age. These emission rates were developed by U.S. EPA using its Motor Vehicle Emission Simulator (MOVES 2010).[630] Emission rates for SO_2 were calculated by NHTSA using average fuel sulfur content estimates supplied by EPA, together with the assumption that the entire sulfur content of fuel is emitted in the form of SO_2.[631] Total SO_2 emissions under each alternative CAFE standard were calculated by applying the resulting emission rates directly to estimated annual gasoline and diesel fuel use by cars and light trucks.

As with other impacts, the *changes* in emissions of criteria air pollutants resulting from alternative increases in CAFE standards for MY 2012–2016 cars and light trucks were calculated from the differences between emissions under each alternative that would increase CAFE standards, and emissions under the baseline alternative.

NHTSA estimated the reductions in criteria pollutant emissions from producing and distributing fuel that would occur under alternative CAFE standards using emission rates obtained by EPA from Argonne National Laboratories' Greenhouse Gases and Regulated Emissions in Transportation (GREET) model.[632] The GREET model provides separate estimates of air pollutant emissions that occur in different phases of fuel production and distribution, including crude oil extraction, transportation, and storage, fuel refining, and fuel distribution and storage.[633] EPA modified the GREET model to change certain assumptions about emissions during crude petroleum extraction and transportation, as well as to update its emission rates to reflect adopted and pending EPA emission standards. NHTSA converted these emission rates from the mass per fuel energy content basis on which GREET reports them to mass per gallon of fuel supplied using estimates of fuel energy content supplied by GREET.

The resulting emission rates were applied to the agency's estimates of fuel consumption under each alternative CAFE standard to develop estimates of total emissions of each criteria pollutant during fuel production and distribution. The assumptions about the effects of *changes* in fuel consumption on domestic and imported sources of fuel supply discussed above were then employed to calculate the effects of reductions in fuel use from alternative CAFE standards on changes in imports of refined fuel and domestic refining. NHTSA's analysis assumes that reductions in imports of refined fuel would reduce criteria pollutant emissions during fuel storage and distribution only. Reductions in domestic fuel refining using imported crude oil as a feedstock are assumed to reduce emissions during fuel refining, storage, and distribution, because each of these activities would be reduced. Reduced domestic fuel refining using domestically-produced crude oil is assumed to reduce emissions during all four phases of fuel production and distribution.[634]

[627] Differences between forecast annual U.S. imports of crude petroleum and refined products among these three scenarios range from 24–89 percent of differences in projected annual gasoline and diesel fuel consumption in the U.S. These differences average 49 percent over the forecast period spanned by AEO 2009.

[628] Differences between forecast annual U.S. imports of crude petroleum among these three scenarios range from 67–97 percent of differences in total U.S. refining of crude petroleum, and average 85 percent over the forecast period spanned by AEO 2009.

[629] This figure is calculated as 50 gallons + 50 gallons*90% = 50 gallons + 45 gallons = 95 gallons.

[630] The MOVES model assumes that the per-mile rates at which these pollutants are emitted are determined by EPA regulations and the effectiveness of catalytic after-treatment of engine exhaust emissions, and are thus unaffected by changes in car and light truck fuel economy.

[631] These are 30 and 15 parts per million (ppm, measured on a mass basis) for gasoline and diesel respectively, which produces emission rates of 0.17 grams of SO_2 per gallon of gasoline and 0.10 grams per gallon of diesel.

[632] Argonne National Laboratories, *The Greenhouse Gas and Regulated Emissions from Transportation (GREET) Model,* Version 1.8, June 2007, *available at http://www.transportation.anl.gov/modeling_simulation/GREET/index.html* (last accessed March 15, 2010).

[633] Emissions that occur during vehicle refueling at retail gasoline stations (primarily evaporative emissions of volatile organic compounds, or VOCs) are already accounted for in the "tailpipe" emission factors used to estimate the emissions generated by increased light truck use. GREET estimates emissions in each phase of gasoline production and distribution in mass per unit of gasoline energy content; these factors are then converted to mass per gallon of gasoline using the average energy content of gasoline.

[634] In effect, this assumes that the distances crude oil travels to U.S. refineries are approximately the same regardless of whether it travels from domestic oilfields or import terminals, and that the distances that gasoline travels from refineries to retail stations are approximately the same as those from import terminals to gasoline stations. We note that while assuming that all changes in upstream emissions result from a decrease in petroleum production and

Continued

Finally, NHTSA calculated the net changes in domestic emissions of each criteria pollutant by summing the increases in emissions projected to result from increased vehicle use, and the reductions anticipated to result from lower domestic fuel refining and distribution.[635] As indicated previously, the effect of adopting higher CAFE standards on total emissions of each criteria pollutant depends on the relative magnitudes of the resulting reduction in emissions from fuel refining and distribution, and the increase in emissions from additional vehicle use. Although these net changes vary significantly among individual criteria pollutants, the agency projects that on balance, adopting higher CAFE standards would reduce emissions of all criteria air pollutants except carbon monoxide (CO).

The net changes in domestic emissions of fine particulates ($PM_{2.5}$) and its chemical precursors (such as NO_X, SO_X, and VOCs) are converted to economic values using estimates of the reductions in health damage costs per ton of emissions of each pollutant that is avoided, which were developed and recently revised by EPA. These savings represent the estimated reductions in the value of damages to human health resulting from lower atmospheric concentrations and population exposure to air pollution that occur when emissions of each pollutant that contributes to atmospheric $PM_{2.5}$ concentrations are reduced. The value of reductions in the risk of premature death due to exposure to fine particulate pollution ($PM_{2.5}$) account for a majority of EPA's estimated values of reducing criteria pollutant emissions, although the value of avoiding other health impacts is also included in these estimates.

These values do not include a number of unquantified benefits, such as reduction in the welfare and environmental impacts of $PM_{2.5}$ pollution, or reductions in health and welfare impacts related to other criteria pollutants (ozone, NO_2, and SO_2) and air toxics. EPA estimates different PM-related per-ton values for reducing emissions from vehicle use than for reductions in emissions of that occur during fuel production and distribution.[636] NHTSA applies these separate values to its estimates of changes in emissions from vehicle use and fuel production and distribution to determine the net change in total economic damages from emissions of these pollutants.

EPA projects that the per-ton values for reducing emissions of criteria pollutants from both mobile sources (including motor vehicles) and stationary sources such as fuel refineries and storage facilities will increase over time. These projected increases reflect rising income levels, which are assumed to increase affected individuals' willingness to pay for reduced exposure to health threats from air pollution, as well as future population growth, which increases population exposure to future levels of air pollution.

NHTSA and EPA received no comments on the procedures they employed to estimate the reductions in emissions of criteria air pollutants reported in their respective NPRMs, or on the unit economic values the agencies applied to those reductions to calculate their total value. Thus the agencies have continued to employ these procedures and values in the analysis reported in this final rule. However, the agencies have made some minor changes in the emission factors used to calculate changes in emissions resulting from increased vehicle use; these revisions are detailed in Chapter 4 of the Final Technical Support Document accompanying this rule.

ii. Reductions in CO_2 Emissions

Emissions of carbon dioxide and other greenhouse gases (GHGs) occur throughout the process of producing and distributing transportation fuels, as well as from fuel combustion itself. By reducing the volume of fuel consumed by passenger cars and light trucks, higher CAFE standards will reduce GHG emissions generated by fuel use, as well as throughout the fuel supply cycle. Lowering these emissions is likely to slow the projected pace and reduce the ultimate extent of future changes in the global climate, thus reducing future economic damages that changes in the global climate are expected to cause. By reducing the probability that climate changes with potentially catastrophic economic or environmental impacts will occur, lowering GHG emissions may also result in economic benefits that exceed the resulting reduction in the expected future economic costs caused by gradual changes in the earth's climatic systems.

Quantifying and monetizing benefits from reducing GHG emissions is thus an important step in estimating the total economic benefits likely to result from establishing higher CAFE standards. The agency estimated emissions of CO_2 from passenger car and light truck use by multiplying the number of gallons of each type of fuel (gasoline and diesel) they are projected to consume under alternative CAFE standards by the quantity or mass of CO_2 emissions released per gallon of fuel consumed. This calculation assumes that the entire carbon content of each fuel is converted to CO_2 emissions during the combustion process. Carbon dioxide emissions account for nearly 95 percent of total GHG emissions that result from fuel combustion during vehicle use.

iii. Economic Value of Reductions in CO_2 Emissions

NHTSA has taken the economic benefits of reducing CO_2 emission into account in this rulemaking, both in developing alternative CAFE standards and in assessing the economic benefits of each alternative that was considered. Since direct estimates of the economic benefits from reducing CO_2 or other GHG emissions are generally not reported in published literature on the impacts of climate change, these benefits are typically assumed to be the "mirror image" of the estimated incremental costs resulting from an increase in those emissions. Thus the benefits from reducing CO_2 emissions are usually measured by the savings in estimated economic damages that an equivalent *increase* in emissions would otherwise have caused.

The "social cost of carbon" (SCC) is intended to be a monetary measure of the incremental damage resulting from increased carbon dioxide (CO_2) emissions, including losses in agricultural productivity, the economic damages caused by adverse effects on human health, property losses and damages resulting from sea level rise, and changes in the value of ecosystem services. The SCC is usually expressed in dollars per additional metric ton of CO_2 emissions occurring during a specified year, and is higher for more distant future years because the damages caused by an additional ton of emissions increase with larger existing concentrations of CO_2 in the earth's atmosphere. Marginal reductions in CO_2 emissions that are projected to result from lower fuel consumption, refining, and distribution during each future year are multiplied by the estimated SCC appropriate for that year, which is used

transport, our analysis of downstream criteria pollutant impacts assumes no change in the composition of the gasoline fuel supply.

[635] All emissions from increased vehicle use are assumed to occur within the U.S., since CAFE standards would apply only to vehicles produced for sale in the U.S.

[636] These reflect differences in the typical geographic distributions of emissions of each pollutant, their contributions to ambient $PM_{2.5}$ concentrations, pollution levels (predominantly those of $PM_{2.5}$), and resulting changes in population exposure.

to represent the value of eliminating each ton of CO_2 emissions, to determine the total economic benefit from reduced emissions during that year. These benefits are then discounted to their present value as usual, using a discount rate that is consistent with that used to develop the estimate of the SCC itself.

The agency's NPRM incorporated the Federal interagency working group's interim guidance on appropriate SCC values for estimating economic benefits from reductions in CO_2 emissions. NHTSA specifically asked for comment on the procedures employed by the group to develop its recommended values, as well as on the reasonableness and correct interpretation of those values. Comments the agency received address several different issues, including (1) the interagency group's procedures for selecting SCC estimates to incorporate in its recommended values; (2) the appropriateness of the procedures the agency used to combine and summarize these estimates; (3) the parameter values and input assumptions used by different researchers to develop their estimates of the SCC; (4) the choice between global and domestic estimates of the SCC for use in Federal regulatory analysis, (5) the discount rates used to derive estimates of the SCC; and (6) the overall level of the agency's SCC estimates.

NHTSA's Procedures for Selecting SCC Estimates

Many of the comments NHTSA received concerned the group's procedures for selecting published estimates and aggregating them to arrive at its range of recommended values. CARB asked for a clearer explanation of why mean SCC estimates from only two of the three major climate models were included in the average values reported in the interim guidance, and whether the arithmetic mean of reported values is the appropriate measure of their central tendency. Students from the University of California at Santa Barbara (UCSB) noted that the interagency group often selected only a single SCC estimate from studies reporting multiple estimates or a range of values to include in developing its summary values, and objected that this procedure caused the group to understate the degree of uncertainty surrounding its recommended values.

Steven Rose also noted that the interagency group's "filtering" of published estimates of the SCC on the basis of their vintage and input assumptions tended to restrict the included estimates to a relatively narrow band that excluded most potentially catastrophic climate changes, and thus was not representative of the wide uncertainty surrounding the "true" SCC. If the purpose of incorporating the SCC into regulatory analysis was effectively to price CO_2 emissions so that emitters would account for climate damages caused by their actions, he reasoned, then the estimate to be used should incorporate the wide range of uncertainty surrounding the magnitude of potential damages.

Rose also noted that many of the more recent studies reporting estimates of the SCC were designed to explore the influence of different factors on the extent and timing of climate damages, rather than to estimate the SCC specifically, and thus that these more recent estimates were not necessarily more informative than SCC estimates reported in some older studies. Rose argued that because there has been little change in major climate models since about 2001, all estimates published after that date should be considered in order to expand the size of the sample represented by average values, rather than limiting it by including only the most recently-reported estimates.

James Adcock objected to the interagency group's reliance on Tol's survey of published estimates of the SCC, since many of the estimates it included were developed by Tol himself. In contrast, Steven Rose argued that the Tol survey offered a useful way to summarize and represent variation among published estimates of the SCC, and thus to indicate the uncertainty surrounding its true value.

Procedures for Summarizing Published SCC Estimates

Steven Rose argued that combining SCC estimates generated using different discount rates was inappropriate, and urged the interagency group instead to select one or more discount rates and then to average only SCC estimates developed using the same discount rate. Rose also noted that the interagency group's explanation of how it applied the procedure developed by Newell and Pizer to incorporate uncertainty in the discount rate was inadequately detailed, and in any case it may not be appropriate for use in combining SCC estimates that were based on different discount rates. UCS also questioned NHTSA's use of averaging to combine estimates of the SCC relying on different discount rates, as well as the agency's equal weighting of upper- and lower-bound SCC estimates reported in published studies.

NESCAUM commented that the interagency group's basis for deriving the $20 SCC estimate from its summary of published values was not adequately clear, and that the group's guidance should clarify the origin of this value. NESCAUM also urged the interagency group to identify a representative range of alternative SCC estimates for use in assessing benefits from reduced emissions, rather than a single value.

Ford commented that the interagency group's methodology for developing an estimate of the SCC was acceptable, but argued that NHTSA agency should rely on the costs of reducing CO_2 emissions in other sectors of the U.S. economy to evaluate economic benefits from reducing motor vehicle emission. Ford asserted that this represented a more reliable estimate of the benefits from reducing emissions than the potential climate damages avoided by reducing vehicle emissions, since lowering vehicle emissions reduces the need to control emissions from other economic sectors.

Parameter Values and Input Assumptions Underlying SCC Estimates

CARB also noted that some of the wide variation in published SCC estimates relied upon by the interagency group could be attributed to authors' differing assumptions about future GHG emissions scenarios and choices of discount rates. Steven Rose noted that SCC estimates derived using future emissions scenarios that assumed significant reductions in emissions were probably inappropriate for use in Federal regulatory analysis, since Federal regulations must be adopted individually and are each likely to lead to only marginal reductions in emissions, so it is unreasonable to assume that their collective effect on future emissions will be large.

CARB also emphasized that SCC estimates were not available over the same range of discount rates for all major climate models, thus making averages of available results less reliable as indicators of any central tendency in estimates of the SCC. To remedy this shortcoming, the Pew Center on Climate Change urged the interagency group to analyze the sensitivity of SCC estimates to systematic variation in uncertain model parameters and input scenarios as a means of identifying the range of uncertainty in the SCC itself, as well as to include a risk premium in its SCC estimates as a means of compensating for climate models' omission of potential economic damages from catastrophic climate changes.

CBD commented that the interim nature of the interagency group's guidance made it impossible for decision-makers to determine whether the agency's proposed CAFE standards

were sufficiently stringent. CBD also argued that economic models' exclusion of some potential climate impacts caused them to underestimate the "true" SCC, and that the interagency group's procedure of averaging published estimates failed to convey important information about variation in estimates of the SCC to decision makers. In a related comment, the Pew Center on Climate Change cautioned against use of the interagency group's interim SCC estimates for analyzing benefits from NHTSA's final rule, on the grounds that some older estimates of the SCC surveyed for the interim guidance implausibly suggested that there could be positive net benefits from climate change, while more recent research suggests uniformly negative economic impacts.

James Adcock presented his own estimate of the value of reducing CO_2 emissions, which he derived by assuming that climate change would completely eliminate the economic value of all services provided by the local natural environment within a 50-year time frame. In addition, Adcock urged that Federal agencies use a consistent estimate of the SCC in their regulatory analyses, and that this estimate be updated regularly to reflect new knowledge; he also asserted that the SCC should be above the per-ton price of CO_2 emissions permits under a cap-and-trade system.

Global vs. Domestic SCC Values

NADA argued that NHTSA should employ an estimate of the domestic value of reducing CO_2 emissions for purposes of estimating their aggregate economic benefits, since the agency includes only the domestic value of benefits stemming from reductions in other environmental and energy security externalities. In contrast, both the Pew Center on Climate Change and students from the University of California at Santa Barbara (UCSB) asserted that a global value of the SCC was appropriate for use even in analyzing benefits from U.S. domestic environmental regulations such as CAFE, and Steven Rose added that it was difficult to identify any proper role for a domestic estimate of the SCC. James Adcock commented that the agency's derivation of the fraction of the global SCC it employed (6 percent) to obtain a domestic value was not clearly explained.

Discount Rates Used To Derive SCC Estimates

NRDC also cited the effect of positive discount rates on damages occurring in the distant future, which reduce the present value of those damages to misleadingly low levels. Similarly, Steven Rose argued that the interagency group should have used discount rates below the 3 percent lower bound the group selected, and that the discount rate should also have been allowed to vary over time to account for uncertainty in its true value. The Pew Center also urged NHTSA to account explicitly for uncertainty surrounding the correct discount rate, but did not indicate how the agency should do so.

CARB echoed the recommendation for including SCC values reflecting discount rates below 3 percent, since EPA had previously used lower rates in previously proposed rules to discount benefits that were not expected to occur until the distant future, and thus to be experienced mainly by future generations. The New Jersey Department of Environmental Protection noted that giving nearly equal weight to future generations would imply a discount rate of less than 3 percent—probably in the neighborhood of 2 percent—and endorsed the interagency group's use of the procedure developed by Newell and Pizer to account for uncertainty surrounding the correct discount rate.

The Pew Center urged the agency to ignore SCC estimates derived using discount rates above 5 percent, and instead to use the lowest possible rates, even including the possibility of negative values. Similarly, NRDC asserted that both the 3 percent and 5 percent discount rates selected by the interagency group are inappropriately high, but did not recommend a specific alternative rate. Students from UCSB observed that the interagency group's equal weighting of the 3 percent and 5 percent rates appeared to be inconsistent with the more frequent use of 3 percent in published estimates of the SCC, as well as with OMB's guidance that the 3 percent rate was appropriate for discounting future impacts on consumption. The group urged NHTSA to consider a wider range of discount rates in its revised estimates of the SCC, including some below 3 percent. CBD argued that the discount rate should increase over the future to reflect the potential for catastrophic climate impacts.

CBD asserted that because the potential consequences of climate change are so extreme, that future economic impacts of climate change should not be discounted (*i.e.,* a 0 percent discount rate should be used). James Adcock echoed this view.

Overall Level of SCC Estimates

NRDC argued that the SCC estimate recommended by the interagency group was likely to be too low, because of most models' omission of some important climate impacts, particularly including potential catastrophic impacts resulting from non-incremental changes in climate conditions. CARB argued that it seemed prudent to include SCC values as high as $200 per ton, to reflect the possibility of low-probability but catastrophic changes in the global climate and the resulting economic damages.

The New Jersey Department of Environmental Protection pointed out that SCC estimates reviewed by the IPCC ranged as high as $95/ton, and that the Stern Report's estimate was $85/ton, suggesting the possibility that the interagency group may have inappropriately filtered out the highest estimates of the SCC. Other commenters including NACAA, NESCAUM, NRDC, and UCS urged NHTSA to employ higher SCC values than it used in the NPRM analysis, but did not recommend specific values. CARB urged the agency to use higher values of the SCC than it employed in its NPRM analysis, and recommended a value of $25/ton, growing at 2.4 percent annually, or alternatively, a fixed value of $50/ton.

Steven Rose cautioned against applying a uniform 3 percent annual growth rate to all of the provisional SCC estimates recommended by the interagency group, and noted that the base year where such growth is assumed to begin should be determined carefully for each estimate.

Finally, the Institute for Energy Research commented that NHTSA had probably overstated the reductions in CO_2 emissions that would result from the proposed standards—and thus their economic value—because of the potential for compensating increases in emissions, such as those cause by increased retention and use of older, less fuel-efficient vehicles in the fleet.

After carefully considering comments received to the NPRM, for purposes of this final rule, NHTSA has relied on estimates of the SCC developed by the Federal interagency working group convened for the specific purpose of developing new estimates to be used by U.S. Federal agencies in regulatory evaluations. Under Executive Order 12866, Federal agencies are required, to the extent permitted by law, "to assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs." The group's purpose in developing new estimates of the SCC was to allow

Federal agencies to incorporate the social benefits of reducing carbon dioxide (CO_2) emissions into cost-benefit analyses of regulatory actions that have small, or "marginal," impacts on cumulative global emissions, as most Federal regulatory actions can be expected to have.

The interagency group convened on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key inputs and assumptions in order to generate SCC estimates. Agencies that actively participated in the interagency process included the Environmental Protection Agency and the Departments of Agriculture, Commerce, Energy, Transportation, and Treasury. This process was convened by the Council of Economic Advisers and the Office of Management and Budget, with active participation and regular input from the Council on Environmental Quality, National Economic Council, Office of Energy and Climate Change, and Office of Science and Technology Policy. The main objective of this process was to develop a range of SCC values using a defensible set of input assumptions that are grounded in the existing literature. In this way, key uncertainties and model differences can more transparently and consistently inform the range of SCC estimates used in the rulemaking process.

The interagency group developed its estimates of the SCC estimates while clearly acknowledging the many uncertainties involved, and with a clear understanding that they should be updated over time to reflect increasing knowledge of the science and economics of climate impacts. Technical experts from numerous agencies met on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key model inputs and assumptions. The main objective of this process was to develop a range of SCC values using a defensible set of input assumptions grounded in the existing scientific and economic literature. In this way, key uncertainties and model differences transparently and consistently can inform the range of SCC estimates used in the rulemaking process.

The group ultimately selected four SCC values for use in regulatory analyses. Three values are based on the average SCC from three integrated assessment models, using discount rates of 2.5, 3, and 5 percent. The fourth value, which represents the 95th percentile SCC estimate across all three models at a 3 percent discount rate, is included to represent the possibility of higher-than-expected impacts from temperature change that lie further out in the tails of the distribution of SCC estimates. Table IV.C.3–2 summarizes the interagency group's estimates of the SCC during various future years. The SCC estimates reported in the table assume that the marginal damages from increased emissions are constant for small departures from the baseline emissions path, an approximation that is reasonable for policies that have effects on emissions that are small relative to cumulative global carbon dioxide emissions.

TABLE IV.C.3–2—SOCIAL COST OF CO_2 EMISSIONS, 2010–2050

[2007 dollars]

Discount rate	5%	3%	2.5%	3%
Source	Average of estimates			95th Percentile estimate
2010	4.7	21.4	35.1	64.9
2015	5.7	23.8	38.4	72.8
2020	6.8	26.3	41.7	80.7
2025	8.2	29.6	45.9	90.4
2030	9.7	32.8	50.0	100.0
2035	11.2	36.0	54.2	109.7
2040	12.7	39.2	58.4	119.3
2045	14.2	42.1	61.7	127.8
2050	15.7	44.9	65.0	136.2

As Table IV.C.3–2 shows, the four SCC estimates selected by the interagency group for use in regulatory analyses are $5, $21, $35, and $65 (in 2007 dollars) for emissions occurring in the year 2010. The first three estimates are based on the average SCC across models and socio-economic and emissions scenarios at the 5, 3, and 2.5 percent discount rates, respectively. The fourth value is included to represent the higher-than-expected impacts from temperature change further out in the tails of the SCC distribution. For this purpose, the group elected to use the SCC value for the 95th percentile at a 3 percent discount rate.

The central value identified by the interagency group is the average SCC across models at the 3 percent discount rate, or $21 per metric ton in 2010. To capture the uncertainties involved in regulatory impact analysis, however, the group emphasized the importance of considering the full range of estimated SCC values. As the table also shows, the SCC estimates also rise over time; for example, the central value increases to $24 per ton of CO_2 in 2015 and $26 per ton of CO_2 in 2020.

The interagency group is committed to updating these estimates as the science and economic understanding of climate change and its impacts on society improves over time. Specifically, the group has set a preliminary goal of revisiting the SCC values within two years or at such time as substantially updated models become available, and to continue to support research in this area. U.S. Federal agencies will periodically review and reconsider estimates of the SCC used for cost-benefit analyses to reflect increasing knowledge of the science and economics of climate impacts, as well as improvements in modeling.

Details of the process used by the interagency group to develop its SCC estimates, complete results including year-by-year estimates of each of the four values, and a thorough discussion of their intended use and limitations is provided in the document *Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866,* Interagency Working Group on Social Cost of Carbon, United States Government, February 2010.[637]

[637] This document is available in the docket for this rulemaking (NHTSA–2009–0059).

m. Discounting Future Benefits and Costs

Discounting future fuel savings and other benefits is intended to account for the reduction in their value to society when they are deferred until some future date, rather than received immediately. The discount rate expresses the percent decline in the value of these benefits—as viewed from today's perspective—for each year they are deferred into the future. In evaluating the benefits from alternative proposed increases in CAFE standards for MY 2012–2016 passenger cars and light trucks, NHTSA employed a discount rate of 3 percent per year, but also presents these benefit and cost estimates at a 7 percent discount rate.

While both discount rates are presented, NHTSA believes that 3 percent is the most appropriate rate for discounting future benefits from increased CAFE standards because most or all of vehicle manufacturers' costs for complying with higher CAFE standards will ultimately be reflected in higher sales prices for their new vehicle models. By increasing sales prices for new cars and light trucks, CAFE regulations will thus primarily affect vehicle purchases and other private consumption decisions. Both economic theory and OMB guidance on discounting indicate that the future benefits and costs of regulations that mainly affect private consumption should be discounted at consumers' rate of time preference.[638]

OMB guidance also indicates that savers appear to discount future consumption at an average real (that is, adjusted to remove the effect of inflation) rate of about 3 percent when they face little risk about its likely level. Since the real rate that savers use to discount future consumption represents a reasonable estimate of consumers' rate of time preference, NHTSA believes that the 3 percent rate to discount projected future benefits and costs resulting from higher CAFE standards for MY 2012–2016 passenger cars and light trucks is more appropriate than 7 percent, but presents both.[639] One commenter, NRDC, supported the agencies' use of a 3 percent discount rate as consistent with DOE practice in energy efficiency-related rulemakings and OMB guidance. OMB guidance actually requires that benefits and costs be presented at both a 3 and a 7 percent discount rate.

Because there is some remaining uncertainty about whether vehicle manufacturers will completely recover their costs for complying with higher CAFE standards by increasing vehicle sales prices, however, NHTSA also presents these benefit and cost estimates using a higher discount rate. OMB guidance indicates that the real economy-wide opportunity cost of capital is the appropriate discount rate to apply to future benefits and costs when the primary effect of a regulation is "* * * to displace or alter the use of capital in the private sector," and OMB estimates that this rate currently averages about 7 percent.[640] Thus the agency has also examined its benefit and cost estimates for alternative MY 2012–2016 CAFE standards using a 7 percent real discount rate.

In its proposed rule, NHTSA sought comment on whether it should evaluate CAFE standards using a discount rate of 3 percent, 7 percent, or an alternative value. NRDC not only opposed the agency's use of a 7 percent discount rate, but also opposed conducting even sensitivity analyses with discount rates higher than 3 percent. In contrast, two other commenters, NADA and the Institute for Energy Research, advised that the agencies should use discount rates of 7 percent or higher. NADA argued that the most appropriate discount rate would be one closer to historical financing rates on motor vehicle loans (which currently average about 6.5 percent), while the Institute for Energy Research argued that consumers may have much higher discount rates than the agencies assumed, perhaps even as high as 25 percent.

After carefully considering these comments, NHTSA has elected to use discount rates of both 3 and 7 percent in the analysis supporting this final rule. As indicated above, the agency believes that vehicle manufacturers will recover most or all of their added costs for complying with the CAFE standards this rule establishes by raising sales prices for some or all vehicle models. As a consequence, this regulation will thus primarily affect vehicle purchases and related consumption decisions, which suggests that its future benefits and costs should be discounted at the rate of time preference vehicle buyers reveal in their consumption and savings behavior. OMB's 3 percent figure appears to be a conservative (*i.e.,* low) estimate of this rate, because it assumes in effect that vehicle buyers face little risk about the value of future fuel savings and other benefits from the rule; nevertheless, in the current economic environment it appears to represent a reasonable estimate of consumers' rate of time preference. Thus NHTSA has mainly relied upon the 3 percent rate to discount projected future benefits and costs resulting from higher CAFE standards for MY 2012–2016 passenger cars and light trucks

One important exception to the 3 percent discount rate is the rates used to discount benefits from reducing CO_2 emissions from the years in which reduced emissions occur, which span the lifetimes of MY 2012–2016 cars and light trucks, to their present values. In order to ensure consistency in the derivation and use of the interagency group's estimates of the unit values of reducing CO_2 emissions, the benefits from reducing those emissions during each future year are discounted using the same "intergenerational" discount rates that were used to derive each of the alternative unit values of reducing CO_2 emissions. As indicate in Table IV.C.3–2 above, these rates are 2.5 percent, 3 percent, and 5 percent depending on which estimate of the SCC is being considered.[641]

n. Accounting for Uncertainty in Benefits and Costs

In analyzing the uncertainty surrounding its estimates of benefits and costs from alternative CAFE standards, NHTSA has considered alternative estimates of those assumptions and parameters likely to have the largest effect. These include the projected costs of fuel economy-improving technologies and their expected effectiveness in reducing vehicle fuel consumption, forecasts of future fuel prices, the magnitude of the rebound effect, the reduction in external economic costs resulting from lower U.S. oil imports, and the discount rate applied to future benefits and costs. The range for each of these variables employed in the uncertainty analysis is presented in the section of this notice discussing each variable.

The uncertainty analysis was conducted by assuming independent normal probability distributions for each of these variables, using the low and high estimates for each variable as the values below which 5 percent and

[638] *Id.*

[639] Office of Management and Budget, Circular A–4, "Regulatory Analysis," September 17, 2003, 33. *Available at http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf* (last accessed August 9, 2009).

[640] *Id.*

[641] The fact that the 3 percent discount rate used by the interagency group to derive its central estimate of the SCC is identical to the 3 percent short-term or "intra-generational" discount rate used by NHTSA to discount future benefits other than reductions in CO_2 emissions is coincidental, and should not be interpreted as a required condition that must be satisfied in future rulemakings.

95 percent of observed values are believed to fall. Each trial of the uncertainty analysis employed a set of values randomly drawn from each of these probability distributions, assuming that the value of each variable is independent of the others. Benefits and costs of each alternative standard were estimated using each combination of variables. A total of 1,000 trials were used to establish the likely probability distributions of estimated benefits and costs for each alternative standard.

o. Where can readers find more information about the economic assumptions?

Much more detailed information is provided in Chapter VIII of the FRIA, and a discussion of how NHTSA and EPA jointly reviewed and updated economic assumptions for purposes of this final rule is available in Chapter 4 of the Joint TSD. In addition, all of NHTSA's model input and output files are now public and available for the reader's review and consideration. The economic input files can be found in the docket for this final rule, NHTSA–2009–0059, and on NHTSA's Web site.[642] Finally, because much of NHTSA's economic analysis for purposes of this final rule builds on the work that was done for the MY 2011 final rule, we refer readers to that document as well for background information concerning how NHTSA's assumptions regarding economic inputs for CAFE analysis have evolved over the past several rulemakings, both in response to comments and as a result of the agency's growing experience with this type of analysis.[643]

4. How does NHTSA use the assumptions in its modeling analysis?

In developing today's final CAFE standards, NHTSA has made significant use of results produced by the CAFE Compliance and Effects Model (commonly referred to as "the CAFE model" or "the Volpe model"), which DOT's Volpe National Transportation Systems Center developed specifically to support NHTSA's CAFE rulemakings. The model, which has been constructed specifically for the purpose of analyzing potential CAFE standards, integrates the following core capabilities:

(1) Estimating how manufacturers could apply technologies in response to new fuel economy standards,

(2) Estimating the costs that would be incurred in applying these technologies,

(3) Estimating the physical effects resulting from the application of these technologies, such as changes in travel demand, fuel consumption, and emissions of carbon dioxide and criteria pollutants, and

(4) Estimating the monetized societal benefits of these physical effects.

An overview of the model follows below. Separate model documentation provides a detailed explanation of the functions the model performs, the calculations it performs in doing so, and how to install the model, construct inputs to the model, and interpret the model's outputs. Documentation of the model, along with model installation files, source code, and sample inputs are available at NHTSA's Web site. The model documentation is also available in the docket for today's final rule, as are inputs for and outputs from analysis of today's final CAFE standards.

a. How does the model operate?

As discussed above, the agency uses the Volpe model to estimate how manufacturers could attempt to comply with a given CAFE standard by adding technology to fleets that the agency anticipates they will produce in future model years. This exercise constitutes a simulation of manufacturers' decisions regarding compliance with CAFE standards.

This compliance simulation begins with the following inputs: (a) The baseline and reference market forecast discussed above in Section IV.C.1 and Chapter 1 of the TSD, (b) technology-related estimates discussed above in Section IV.C.2 and Chapter 3 of the TSD, (c) economic inputs discussed above in Section IV.C.3 and Chapter 4 of the TSD, and (d) inputs defining baseline and potential new CAFE standards. For each manufacturer, the model applies technologies in a sequence that follows a defined engineering logic ("decision trees" discussed in the MY 2011 final rule and in the model documentation) and a cost-minimizing strategy in order to identify a set of technologies the manufacturer could apply in response to new CAFE standards.[644] The model applies technologies to each of the projected individual vehicles in a manufacturer's fleet, until one of three things occurs:

(1) The manufacturer's fleet achieves compliance with the applicable standard;

(2) The manufacturer "exhausts"[645] available technologies; or

(3) For manufacturers estimated to be willing to pay civil penalties, the manufacturer reaches the point at which doing so would be more cost-effective (from the manufacturer's perspective) than adding further technology.[646]

As discussed below, the model has also been modified in order to apply additional technology in early model years if doing so will facilitate compliance in later model years. This is designed to simulate a manufacturer's decision to plan for CAFE obligations several years in advance, which NHTSA believes better replicates manufacturers' actual behavior as compared to the year-by-year evaluation which EPCA would otherwise require.

The model accounts explicitly for each model year, applying most technologies when vehicles are scheduled to be redesigned or freshened, and carrying forward technologies between model years. The CAFE model accounts explicitly for each model year because EPCA requires that NHTSA make a year-by-year determination of the appropriate level of stringency and then set the standard at

[642] *See http://www.nhtsa.dot.gov* (click on "Fuel Economy Standards (CAFE)," click on "Related Links: CAFE Compliance and Effects Modeling System: The Volpe Model").

[643] 74 FR 14308–14358 (Mar. 30, 2009).

[644] NHTSA does its best to remain scrupulously neutral in the application of technologies through the modeling analysis, to avoid picking technology "winners." The technology application methodology has been reviewed by the agency over the course of several rulemakings, and commenters have been generally supportive of the agency's approach. See, *e.g.,* 74 FR 14238–14246 (Mar. 30, 2009).

[645] In a given model year, the model makes additional technologies available to each vehicle model within several constraints, including (a) whether or not the technology is applicable to the vehicle model's technology class, (b) whether the vehicle is undergoing a redesign or freshening in the given model year, (c) whether engineering aspects of the vehicle make the technology unavailable (*e.g.,* secondary axle disconnect cannot be applied to two-wheel drive vehicles), and (d) whether technology application remains within "phase in caps" constraining the overall share of a manufacturer's fleet to which the technology can be added in a given model year. Once enough technology is added to a given manufacturer's fleet in a given model year that these constraints make further technology application unavailable, technologies are "exhausted" for that manufacturer in that model year.

[646] This possibility was added to the model to account for the fact that under EPCA/EISA, manufacturers must pay fines if they do not achieve compliance with applicable CAFE standards. 49 U.S.C. 32912(b). NHTSA recognizes that some manufacturers will find it more cost-effective to pay fines than to achieve compliance, and believes that to assume these manufacturers would exhaust available technologies before paying fines would cause unrealistically high estimates of market penetration of expensive technologies such as diesel engines and strong hybrid electric vehicles, as well as correspondingly inflated estimates of both the costs and benefits of any potential CAFE standards. NHTSA thus includes the possibility of manufacturers choosing to pay fines in its modeling analysis in order to achieve what the agency believes is a more realistic simulation of manufacturer decision-making. Unlike flex-fuel and other credits, NHTSA is not barred by statute from considering fine-payment in determining maximum feasible standards under EPCA/EISA. 49 U.S.C. 32902(h).

that level, while ensuring ratable increases in average fuel economy.[647] The multi-year planning capability mentioned above increases the model's ability to simulate manufacturers' real-world behavior, accounting for the fact that manufacturers will seek out compliance paths for several model years at a time, while accommodating the year-by-year requirement.

The model also calculates the costs, effects, and benefits of technologies that it estimates could be added in response to a given CAFE standard.[648] It calculates costs by applying the cost estimation techniques discussed above in Section IV.C.2, and by accounting for the number of affected vehicles. It accounts for effects such as changes in vehicle travel, changes in fuel consumption, and changes in greenhouse gas and criteria pollutant emissions. It does so by applying the fuel consumption estimation techniques also discussed in Section IV.C.2, and the vehicle survival and mileage accumulation forecasts, the rebound effect estimate and the fuel properties and emission factors discussed in Section IV.C.3. Considering changes in travel demand and fuel consumption, the model estimates the monetized value of accompanying benefits to society, as discussed in Section IV.C.3. The model calculates both the undiscounted and discounted value of benefits that accrue over time in the future.

The Volpe model has other capabilities that facilitate the development of a CAFE standard. It can be used to fit a mathematical function forming the basis for an attribute-based CAFE standard, following the steps described below. It can also be used to evaluate many (*e.g.,* 200 per model year) potential levels of stringency sequentially, and identify the stringency at which specific criteria are met. For example, it can identify the stringency at which net benefits to society are maximized, the stringency at which a specified total cost is reached, or the stringency at which a given average required fuel economy level is attained. This allows the agency to compare more easily the impacts in terms of fuel savings, emissions reductions, and costs and benefits of achieving different levels of stringency according to different criteria. The model can also be used to perform uncertainty analysis (*i.e.,* Monte Carlo simulation), in which input estimates are varied randomly according to specified probability distributions, such that the uncertainty of key measures (*e.g.,* fuel consumption, costs, benefits) can be evaluated.

b. Has NHTSA considered other models?

Nothing in EPCA requires NHTSA to use the Volpe model. In principle, NHTSA could perform all of these tasks through other means. For example, in developing today's final standards, the agency did not use the Volpe model's curve fitting routines; rather, as discussed above in Section II, the agency fitted curves outside the model (as for the NPRM) but elected to retain the curve shapes defining the proposed standards. In general, though, these model capabilities have greatly increased the agency's ability to rapidly, systematically, and reproducibly conduct key analyses relevant to the formulation and evaluation of new CAFE standards.

During its previous rulemaking, which led to the final MY 2011 standards promulgated earlier this year, NHTSA received comments from the Alliance and CARB encouraging NHTSA to examine the usefulness of other models. As discussed in that final rule, NHTSA, having undertaken such consideration, concluded that the Volpe model is a sound and reliable tool for the development and evaluation of potential CAFE standards.[649] Also, although some observers have criticized analyses the agency has conducted using the Volpe model, those criticisms have largely concerned inputs to the model (such as fuel prices and the estimated economic cost of CO_2 emissions), not the model itself. In comments on the NPRM preceding today's final rule, one of these observers, the Center for Biological Diversity (CBD), suggested that the revisions to such inputs have produced an unbiased cost-benefit analysis.

One commenter, the International Council on Clean Transportation (ICCT) suggested that the Volpe model is excessively complex and insufficiently transparent. However, in NHTSA's view, the complexity of the Volpe model has evolved in response to the complex analytical demands surrounding very significant regulations impacting a large and important sector of the economy, and ICCT's own comments illustrate some of the potential pitfalls of model simplification. Furthermore, ICCT's assertions regarding model transparency relate to the use of confidential business information, not to the Volpe model itself; as discussed elsewhere in this final rule, NHTSA and the Volpe Center have taken pains to make the Volpe model transparent by releasing the model and supporting documentation, along with the underlying source code and accompanying model inputs and outputs. Therefore, the agency disagrees with these ICCT comments.

In reconsidering and reaffirming this conclusion for purposes of this NPRM, NHTSA notes that the Volpe model not only has been formally peer-reviewed and tested through three rulemakings, but also has some features especially important for the analysis of CAFE standards under EPCA/EISA. Among these are the ability to perform year-by-year analysis, and the ability to account for engineering differences between specific vehicle models.

EPCA requires that NHTSA set CAFE standards for each model year at the level that would be "maximum feasible" for that year.[650] Doing so requires the ability to analyze each model year and, when developing regulations covering multiple model years, to account for the interdependency of model years in terms of the appropriate levels of stringency for each one. Also, as part of the evaluation of the economic practicability of the standards, as required by EPCA, NHTSA has traditionally assessed the annual costs and benefits of the standards. The first (2002) version of DOT's model treated each model year separately, and did not perform this type of explicit accounting. Manufacturers took strong exception to these shortcomings. For example, GM commented in 2002 that "although the table suggests that the proposed standard for MY 2007, considered in isolation, promises benefits exceeding costs, that anomalous outcome is merely an artifact of the peculiar Volpe methodology, which treats each year independently of any other * * *" In 2002, GM also criticized DOT's analysis for, in some cases, adding a technology in MY 2006 and then replacing it with another technology in MY 2007. GM

[647] 49 U.S.C. 32902(a) states that at least 18 months before the beginning of each model year, the Secretary of Transportation shall prescribe by regulation average fuel economy standards for automobiles manufactured by a manufacturer in that model year, and that each standard shall be the maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that year. NHTSA has long interpreted this statutory language to require year-by-year assessment of manufacturer capabilities. 49 U.S.C. 32902(b)(2)(C) also requires that standards increase ratably between MY 2011 and MY 2020.

[648] As for all of its other rulemakings, NHTSA is required by Executive Order 12866 and DOT regulations to analyze the costs and benefits of CAFE standards. Executive Order 12866, 58 FR 51735 (Oct. 4, 1993); DOT Order 2100.5, "Regulatory Policies and Procedures," 1979, *available at http://regs.dot.gov/rulemakingrequirements.htm* (last accessed February 21, 2010).

[649] 74 FR 14372 (Mar. 30, 2009).

[650] 49 U.S.C. 32902(a).

(and other manufacturers) argued that this completely failed to represent true manufacturer product-development cycles, and therefore could not be technologically feasible or economically practicable.

In response to these concerns, and to related concerns expressed by other manufacturers, DOT modified the CAFE model in order to account for dependencies between model years and to better represent manufacturers' planning cycles, in a way that still allowed NHTSA to comply with the statutory requirement to determine the appropriate level of the standards for each model year. This was accomplished by limiting the application of many technologies to model years in which vehicle models are scheduled to be redesigned (or, for some technologies, "freshened"), and by causing the model to "carry forward" applied technologies from one model year to the next.

During the recent rulemaking for MY 2011 passenger cars and light trucks, DOT further modified the CAFE model to account for cost reductions attributable to "learning effects" related to volume (*i.e.,* economies of scale) and the passage of time (*i.e.,* time-based learning), both of which evolve on year-by-year basis. These changes were implemented in response to comments by environmental groups and other stakeholders.

The Volpe model is also able to account for important engineering differences between specific vehicle models, and to thereby reduce the risk of applying technologies that may be incompatible with or already present on a given vehicle model. Some commenters have previously suggested that manufacturers are most likely to broadly apply generic technology "packages," and the Volpe model does tend to form "packages" dynamically, based on vehicle characteristics, redesign schedules, and schedules for increases in CAFE standards. For example, under the final CAFE standards for passenger cars, the CAFE model estimated that manufacturers could apply turbocharged SGDI engines mated with dual-clutch AMTs to 2.4 million passenger cars in MY 2016, about 22 percent of the MY 2016 passenger car fleet. Recent modifications to the model, discussed below, to represent multi-year planning, increase the model's tendency to add relatively cost-effective technologies when vehicles are estimated to be redesigned, and thereby increase the model's tendency to form such packages.

On the other hand, some manufacturers have indicated that especially when faced with significant progressive increases in the stringency of new CAFE standards, they are likely to also look for narrower opportunities to apply specific technologies. By progressively applying specific technologies to specific vehicle models, the CAFE model also produces such outcomes. For example, under the final CAFE standards for passenger cars, the CAFE model estimated that in MY 2012, some manufacturers could find it advantageous to apply SIDI to some vehicle models without also adding turbochargers.

By following this approach of combining technologies incrementally and on a model-by-model basis, the CAFE model is able to account for important engineering differences between vehicle models and avoid unlikely technology combinations. For example, the model does not apply dual-clutch AMTs (or strong hybrid systems) to vehicle models with 6-speed manual transmissions. Some vehicle buyers prefer a manual transmission; this preference cannot be assumed away. The model's accounting for manual transmissions is also important for vehicles with larger engines: For example, cylinder deactivation cannot be applied to vehicles with manual transmissions because there is no reliable means of predicting when the driver will change gears. By retaining cylinder deactivation as a specific technology rather than part of a pre-determined package and by retaining differentiation between vehicles with different transmissions, DOT's model is able to target cylinder deactivation only to vehicle models for which it is technologically feasible.

The Volpe model also produces a single vehicle-level output file that, for each vehicle model, shows which technologies were present at the outset of modeling, which technologies were superseded by other technologies, and which technologies were ultimately present at the conclusion of modeling. For each vehicle, the same file shows resultant changes in vehicle weight, fuel economy, and cost. This provides for efficient identification, analysis, and correction of errors, a task with which the public can now assist the agency, since all inputs and outputs are public.

Such considerations, as well as those related to the efficiency with which the Volpe model is able to analyze attribute-based CAFE standards and changes in vehicle classification, and to perform higher-level analysis such as stringency estimation (to meet predetermined criteria), sensitivity analysis, and uncertainty analysis, lead the agency to conclude that the model remains the best available to the agency for the purposes of analyzing potential new CAFE standards.

c. What changes has DOT made to the model?

As discussed in the NPRM preceding today's final rule, the Volpe model has been revised to make some minor improvements, and to add one significant new capability: The ability to simulate manufacturers' ability to engage in "multi-year planning." Multi-year planning refers to the fact that when redesigning or freshening vehicles, manufacturers can anticipate future fuel economy or CO_2 standards, and add technologies accounting for these standards. For example, a manufacturer might choose to over-comply in a given model year when many vehicle models are scheduled for redesign, in order to facilitate compliance in a later model year when standards will be more stringent yet few vehicle models are scheduled for redesign.[651] Prior comments have indicated that the Volpe model, by not representing such manufacturer choices, tended to overestimate compliance costs. However, because of the technical complexity involved in representing these choices when, as in the Volpe model, each model year is accounted for separately and explicitly, the model could not be modified to add this capability prior to the statutory deadline for the MY 2011 final standards.

The model now includes this capability, and NHTSA has applied it in conducting analysis to support the NPRM and in analyzing the standards finalized today. Consequently, this new capability often produces results indicating that manufacturers could over-comply in some model years (with corresponding increases in costs and benefits in those model years) and thereby "carry forward" technology into later model years in order to reduce compliance costs in those later model years. NHTSA believes this better represents how manufacturers would actually respond to new CAFE standards, and thereby produces more realistic estimates of the costs and benefits of such standards.

The Volpe model has also been modified to accommodate inputs specifying the amount of CAFE credit to be applied to each manufacturer's fleet.

[651] Although a manufacturer may, in addition, generate CAFE credits in early model years for use in later model years (or, less likely, in later years for use in early years), EPCA does not allow NHTSA, when setting CAFE standards, to account for manufacturers' use of CAFE credits.

Although the model is not currently capable of estimating manufacturers' decisions regarding the generation and use of CAFE credits, and EPCA does not allow NHTSA, in setting CAFE standards, to take into account manufacturers' potential use of credits, this additional capability in the Volpe model provides a basis for more accurately estimating costs, effects, and benefits that may actually result from new CAFE standards. Insofar as some manufacturers actually do earn and use CAFE credits, this provides NHTSA with some ability to examine outcomes more realistically than EPCA allows for purposes of setting new CAFE standards.

In comments on recent NHTSA rulemakings, some reviewers have suggested that the Volpe model should be modified to estimate the extent to which new CAFE standards would induce changes in the mix of vehicles in the new vehicle fleet. NHTSA, like EPA, agrees that a "market shift" model, also called a consumer vehicle choice model, could provide useful information regarding the possible effects of potential new CAFE standards. An earlier experimental version of the Volpe model included a multinomial logit model that estimated changes in sales resulting from CAFE-induced increases in new vehicle fuel economy and prices. A fuller description of this attempt can be found in Section V of the FRIA. However, NHTSA has thus far been unable to develop credible coefficients specifying such a model. In addition, as discussed in Section II.H.4, such a model is sensitive to the coefficients used in it, and there is great variation over some key values of these coefficients in published studies.

In the NPRM preceding today's final rule, NHTSA sought comment on ways to improve on this earlier work and develop this capability effectively. Some comments implied that the agency should continue work to do so, without providing specific recommendations. The Alliance of Automobile Manufacturers identified consumer choice as one of several factors outside the industry's control yet influential with respect to the agencies' analysis. Also, the University of Pennsylvania Environmental Law Project suggested that the rule would change consumers' vehicle purchasing decisions, and the California Air Resources Board expressed support for continued consideration of consumer choice modeling. On the other hand, citing concerns regarding model calibration, handling of advanced technologies, and applicability to the future light vehicle market, ACEEE, ICCT, UCS, and NRDC all expressed opposition to the possibility of using consumer choice models in estimating the costs and benefits of new standards. Notwithstanding comments on this issue, NHTSA has been unable to further develop this capability in time to include it in the analysis supporting decisions regarding final CAFE standards. The agency will, however, continue efforts to develop and make use of this capability in future rulemakings, taking into account comments received in connection with today's final rule.

d. Does the model set the standards?

Since NHTSA began using the Volpe model in CAFE analysis, some commenters have interpreted the agency's use of the model as the way by which the agency chooses the maximum feasible fuel economy standards. This is incorrect. Although NHTSA currently uses the Volpe model as a tool to inform its consideration of potential CAFE standards, the Volpe model does not determine the CAFE standards that NHTSA proposes or promulgates as final regulations. The results it produces are completely dependent on inputs selected by NHTSA, based on the best available information and data available in the agency's estimation at the time standards are set. Although the model has been programmed in previous rulemakings to estimate at what stringency net benefits are maximized, it was not the model's decision to seek that level of stringency, it was the agency's, as it is always the agency's decision what level of CAFE stringency is appropriate. Ultimately, NHTSA's selection of appropriate CAFE standards is governed and guided by the statutory requirements of EPCA, as amended by EISA: NHTSA sets the standard at the maximum feasible average fuel economy level that it determines is achievable during a particular model year, considering technological feasibility, economic practicability, the effect of other standards of the Government on fuel economy, and the need of the nation to conserve energy.

NHTSA considers the results of analyses conducted by the Volpe model and analyses conducted outside of the Volpe model, including analysis of the impacts of carbon dioxide and criteria pollutant emissions, analysis of technologies that may be available in the long term and whether NHTSA could expedite their entry into the market through these standards, and analysis of the extent to which changes in vehicle prices and fuel economy might affect vehicle production and sales. Using all of this information—not solely that from the Volpe model—the agency considers the governing statutory factors, along with environmental issues and other relevant societal issues such as safety, and promulgates the standards based on its best judgment on how to balance these factors.

This is why the agency considered eight regulatory alternatives, only one of which reflects the agency's final standards, based on the agency's determinations and assumptions. Others assess alternative standards, some of which exceed the final standards and/or the point at which net benefits are maximized.[652] These comprehensive analyses, which also included scenarios with different economic input assumptions as presented in the FEIS and FRIA, are intended to inform and contribute to the agency's consideration of the "need of the United States to conserve energy," as well as the other statutory factors. 49 U.S.C. 32902(f). Additionally, the agency's analysis considers the need of the nation to conserve energy by accounting for economic externalities of petroleum consumption and monetizing the economic costs of incremental CO_2 emissions in the social cost of carbon. NHTSA uses information from the model when considering what standards to propose and finalize, but the model does not determine the standards.

e. How does NHTSA make the model available and transparent?

Model documentation, which is publicly available in the rulemaking docket and on NHTSA's Web site, explains how the model is installed, how the model inputs (all of which are available to the public)[653] and outputs are structured, and how the model is used. The model can be used on any Windows-based personal computer with Microsoft Office 2003 or 2007 and the Microsoft .NET framework installed (the latter available without charge from Microsoft). The executable version of the model and the underlying source code are also available at NHTSA's Web site. The input files used to conduct the core analysis documented in this final rule are available in the public docket. With the model and these input files, anyone is capable of independently

[652] *See* Section IV.F below for a discussion of the regulatory alternatives considered in this rulemaking.

[653] We note, however, that files from any supplemental analysis conducted that relied in part on confidential manufacturer product plans cannot be made public, as prohibited under 49 CFR part 512.

running the model to repeat, evaluate, and/or modify the agency's analysis.

NHTSA is aware of two attempts by commenters to install and use the Volpe model in connection with the NPRM. James Adcock, an individual reviewer, reported difficulties installing the model on a computer with Microsoft® Office 2003 installed. Also, students from the University of California at Santa Barbara, though successful in installing and running the model, reported being unable to reproduce NHTSA's results underlying the development of the shapes of the passenger car and light truck curves.

Regarding the difficulties Mr. Adcock reported encountering, NHTSA staff is aware of no attempts to contact the agency for assistance locating supporting material related to the MYs 2012–2016 CAFE rulemaking. Further, the model documentation provides specific minimum hardware requirements and also indicates operating environment requirements, both of which have remained materially unchanged for more than a year. Volpe Center staff members routinely install and run the model successfully on new laptops, desktops, and servers as part of normal equipment refreshes and interagency support activities. We believe, therefore, that if the minimum hardware and operating environment requirements are met, installing and running the model should be straightforward and successful. The model documentation notes that some of the development and operating environment used by the Volpe model (*e.g.,* the software environment rather than the hardware on which that software environment operates), particularly the version of Microsoft® Excel used by the model, is Microsoft® Office 2003. We recognize that some users may have more recent versions of Microsoft® Office. However, as in the case of other large organizations, software licensing decisions, including the version of Microsoft® Office, is centralized in the Office of the Chief Information Officer. Nonetheless, the Volpe Model is proven on both Microsoft® Office version 2003 and the newer 2007 version.

As discussed in Section II.C, considering comments by the UC Santa Barbara students regarding difficulties reproducing NHTSA's analysis, NHTSA reexamined its analysis, and discovered some erroneous entries in model inputs underlying the analysis used to develop the curves proposed in the NPRM. These errors are discussed in the FRIA and have since been corrected. Updated inputs and outputs have been posted to NHTSA's Web site, and should enable outside replication of the analysis documented in today's notice.

5. How did NHTSA develop the shape of the target curves for the final standards?

In developing the shape of the target curves for today's final standards, NHTSA took a new approach, primarily in response to comments received in the MY 2011 rulemaking. NHTSA's authority under EISA allows consideration of any "attribute related to fuel economy" and any "mathematical function." While the attribute, footprint, is the same for these final standards as the attribute used for the MY 2011 standards, the mathematical function is new.

Both vehicle manufacturers and public interest groups expressed concern in the MY 2011 rulemaking process that the constrained logistic function, particularly the function for the passenger car standards, was overly steep and could lead, on the one hand, to fuel economy targets that were overly stringent for small footprint vehicles, and on the other hand, to a greater incentive for manufacturers to upsize vehicles in order to reduce their compliance obligation (because larger-footprint vehicles have less stringent targets) in ways that could compromise energy and environmental benefits. Given comments received in response to the NPRM preceding this final rule, it appears that the constrained linear function developed here significantly mitigates prior steepness concerns, and appropriately balances, for purposes of this rulemaking, the objectives of (1) discouraging vehicle downsizing that could compromise highway safety and (2) avoiding an overly strong incentive to increase vehicle sizes in ways that could compromise energy and environmental benefits.

a. Standards Are Attribute-Based and Defined by a Mathematical Function

EPCA, as amended by EISA, expressly requires that CAFE standards for passenger cars and light trucks be based on one or more vehicle attributes related to fuel economy, and be expressed in the form of a mathematical function.[654] Like the MY 2011 standards, the MY 2012–2016 passenger car and light truck standards are attribute-based and defined by a mathematical function.[655] Also like the MY 2011 standards, the MY 2012–2016 standards are based on the footprint attribute. However, unlike the MY 2011 standards, the MY 2012–2016 standards are defined by a constrained linear rather than a constrained logistic function. The reasons for these similarities and differences are explained below.

As discussed above in Section II, under attribute-based standards, the fleet-wide average fuel economy that a particular manufacturer must achieve in a given model year depends on the mix of vehicles that it produces for sale. Until NHTSA began to set "Reformed" attribute-based standards for light trucks in MYs 2008–2011, and until EISA gave NHTSA authority to set attribute-based standards for passenger cars beginning in MY 2011, NHTSA set "universal" or "flat" industry-wide average CAFE standards. Attribute-based standards are preferable to universal industry-wide average standards for several reasons. First, attribute-based standards increase fuel savings and reduce emissions when compared to an equivalent universal industry-wide standard under which each manufacturer is subject to the same numerical requirement. Absent a policy to require all full-line manufacturers to produce and sell essentially the same mix of vehicles, the stringency of the universal industry-wide standards is constrained by the capability of those full-line manufacturers whose product mix includes a relatively high proportion of larger and heavier vehicles. In effect, the standards are based on the mix of those manufacturers. As a result, the standards are generally set below the capabilities of full-line and limited-line manufacturers that sell predominantly lighter and smaller vehicles.

Under an attribute-based system, in contrast, every manufacturer is more likely to be required to continue adding more fuel-saving technology each year because the level of the compliance obligation of each manufacturer is based on its own particular product mix. Thus, the compliance obligation of a manufacturer with a higher percentage of lighter and smaller vehicles will have a higher compliance obligation than a manufacturer with a lower percentage of such vehicles. As a result, all manufacturers must use technologies to enhance the fuel economy levels of the vehicles they sell. Therefore, fuel savings and CO_2 emissions reductions should be higher under an attribute-based system than under a comparable industry-wide standard.

Second, attribute-based standards minimize the incentive for manufacturers to respond to CAFE in

[654] 49 U.S.C. 32902(a)(3)(A).

[655] As discussed in Chapter 2 of the TSD, EPA is also setting attribute-based CO_2 standards that are defined by a mathematical function, given the advantages of using attribute-based standards and given the goal of coordinating and harmonizing the CAFE and CO_2 standards as expressed by President Obama in his announcement of the new National Program and in the joint NOI.

ways harmful to safety.[656] Because each vehicle model has its own target (based on the attribute chosen), attribute-based standards provide no incentive to build smaller vehicles simply to meet a fleet-wide average. Since smaller vehicles are subject to more stringent fuel economy targets, a manufacturer's increasing its proportion of smaller vehicles would simply cause its compliance obligation to increase.

Third, attribute-based standards provide a more equitable regulatory framework for different vehicle manufacturers.[657] A universal industry-wide average standard imposes disproportionate cost burdens and compliance difficulties on the manufacturers that need to change their product plans and no obligation on those manufacturers that have no need to change their plans. Attribute-based standards spread the regulatory cost burden for fuel economy more broadly across all of the vehicle manufacturers within the industry.

And fourth, attribute-based standards respect economic conditions and consumer choice, instead of having the government mandate a certain fleet mix. Manufacturers are required to invest in technologies that improve the fuel economy of their fleets, regardless of vehicle mix. Additionally, attribute-based standards help to avoid the need to conduct rulemakings to amend standards if economic conditions change, causing a shift in the mix of vehicles demanded by the public. NHTSA conducted three rulemakings during the 1980s to amend passenger car standards for MYs 1986–1989 in response to unexpected drops in fuel prices and resulting shifts in consumer demand that made the universal passenger car standard of 27.5 mpg infeasible for several years following the change in fuel prices.

As discussed above in Section II, for purposes of the CAFE standards finalized in this NPRM, NHTSA recognizes that the risk, even if small, does exist that low fuel prices in MYs 2012–2016 might lead indirectly to less than currently anticipated fuel savings and emissions reductions. Section II discusses the reasons that the agency does not believe that fuel savings and emissions reductions will be significantly lower than anticipated such as to warrant additional backstop measures beyond the one mandated by EISA, but the agency will monitor the situation and consider further rulemaking solutions if necessary and as lead time permits. *See* also Section IV.E.3 below for further discussion of NHTSA's backstop authority.

b. What attribute does NHTSA use, and why?

Consistent with the MY 2011 CAFE standards, NHTSA is using footprint as the attribute for the MY 2012–2016 CAFE standards. There are several policy reasons why NHTSA and EPA both believe that footprint is the most appropriate attribute on which to base the standards, as discussed below.

As discussed in Section IV.D.1.a.ii below, in NHTSA's judgment, from the standpoint of vehicle safety, it is important that the CAFE standards be set in a way that does not encourage manufacturers to respond by selling vehicles that are in any way less safe. NHTSA's research indicates that reductions in vehicle mass tend to compromise vehicle safety if applied on an equal basis across the entire light duty vehicle fleet, however if greater mass reduction is applied to the higher mass vehicles (the larger light trucks), an improvement in aggregate fleet safety is possible. Footprint-based standards provide an incentive to use advanced lightweight materials and structures that, if carefully designed and validated, should minimize impacts on safety, although that will be better proven as these vehicles become more prevalent in the future.

Further, although we recognize that weight is better correlated with fuel economy than is footprint, we continue to believe that there is less risk of "gaming" (artificial manipulation of the attribute(s) to achieve a more favorable target) by increasing footprint under footprint-based standards than by increasing vehicle mass under weight-based standards—it is relatively easy for a manufacturer to add enough weight to a vehicle to decrease its applicable fuel economy target a significant amount, as compared to increasing vehicle footprint. We also agree with concerns raised in 2008 by some commenters in the MY 2011 CAFE rulemaking that there would be greater potential for gaming under multi-attribute standards, such as standards under which targets would also depend on attributes such as weight, torque, power, towing capability, and/or off-road capability. Standards that incorporate such attributes in conjunction with footprint would not only be significantly more complex, but by providing degrees of freedom with respect to more easily-adjusted attributes, they would make it less certain that the future fleet would actually achieve the projected average fuel economy and CO_2 reduction levels.

As discussed above in Section II.C, NHTSA and EPA sought comment on whether the agencies should consider setting standards for the final rule based on another attribute or another combination of attributes. Although NHTSA specifically requested that the commenters address the concerns raised in the paragraphs above regarding the use of other attributes, and explain how standards should be developed using the other attribute(s) in a way that contributes more to fuel savings and CO_2 reductions than the footprint-based standards, without compromising safety, commenters raising the issue largely reiterated comments submitted in prior CAFE rulemakings, which the agency answered in the MY 2011 final rule.[658] As a result, and as discussed further in Section II, the agencies finalized target curve standards based on footprint for MYs 2012–2016.

c. What mathematical function did NHTSA use for the recently-promulgated MY 2011 CAFE standards?

The MY 2011 CAFE standards are defined by a continuous, constrained logistic function, which takes the form of an S-curve, and is defined according to the following formula:

$$TARGET = \frac{1}{\frac{1}{a} + \left(\frac{1}{b} - \frac{1}{a}\right)\frac{e^{(FOOTPRINT-c)/d}}{1+e^{(FOOTPRINT-c)/d}}}$$

[656] The 2002 NAS Report described at length and quantified the potential safety problem with average fuel economy standards that specify a single numerical requirement for the entire industry. *See* NAS Report at 5, finding 12.

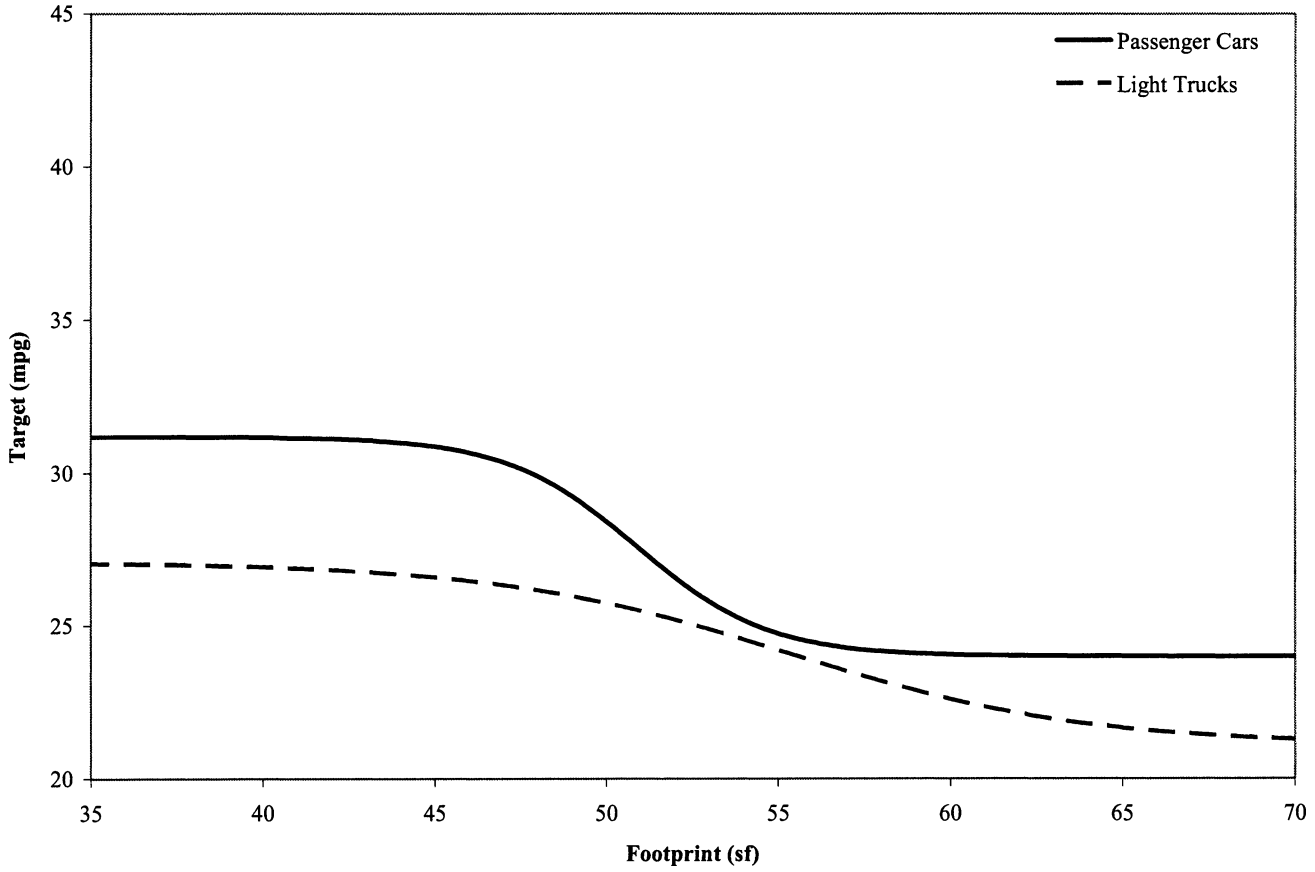
[657] *Id.* at 4–5, finding 10.

[658] *See* 74 FR at 14358–59 (Mar. 30, 2009).

Here, *TARGET* is the fuel economy target (in mpg) applicable to vehicles of a given footprint (*FOOTPRINT,* in square feet), *b* and *a* are the function's lower and upper asymptotes (also in mpg), *e* is approximately equal to 2.718,[659] *c* is the footprint (in square feet) at which the inverse of the fuel economy target falls halfway between the inverses of the lower and upper asymptotes, and *d* is a parameter (in square feet) that determines how gradually the fuel economy target transitions from the upper toward the lower asymptote as the footprint increases.

After fitting this mathematical form (separately) to the passenger car and light truck fleets and determining the stringency of the standards (*i.e.,* the vertical positions of the curves), NHTSA arrived at the following curves to define the MY 2011 standards:

Figure IV.C.5-1 MY 2011 CAFE Standards for Passenger Cars and Light Trucks



d. What mathematical function is NHTSA using for the MYs 2012–2016 CAFE standards, and why?

In finalizing the MY 2011 standards, NHTSA noted that the agency is not required to use a constrained logistic function and indicated that the agency may consider defining future CAFE standards in terms of a different mathematical function. NHTSA has done so for the final CAFE standards.

In revisiting this question, NHTSA found that the final MY 2011 CAFE standard for passenger cars, though less steep than the MY 2011 standard NHTSA final in 2008, continues to concentrate the sloped portion of the curve (from a compliance perspective, the area in which upsizing results in a slightly lower applicable target) within a relatively narrow footprint range (approximately 47–55 square feet). Further, most passenger car models have footprints smaller than the curve's 51.4 square foot inflection point, and many passenger car models have footprints at which the curve is relatively flat.

For both passenger cars and light trucks, a mathematical function that has some slope at most footprints where vehicles are produced is advantageous in terms of fairly balancing regulatory burdens among manufacturers, and in terms of providing a disincentive to respond to new standards by downsizing vehicles in ways that compromise vehicle safety. For example, a flat standard may be very difficult for a full-line manufacturer to meet, while requiring very little of a manufacturer concentrating on small vehicles, and a flat standard may provide an incentive to manufacturers to downsize certain vehicles, in order to "balance out" other vehicles subject to the same standard. As discussed above in Section II.C, NHTSA and EPA have considered comments by students from UC Santa Barbara indicating that the passenger car and light truck curves should be flatter. The agencies conclude that flatter curves would reduce the incentives intended in shifting from

[659] *e* is the irrational *number* for which the slope of the function $y = number^x$ is equal to 1 when *x* is equal to zero. The first 8 digits of *e* are 2.7182818.

"flat" CAFE standards to attribute-based CAFE and GHG standards—those being the incentive to respond to attribute-based standards in ways that minimize compromises in vehicle safety, and the incentive for more manufacturers (than primarily those selling a wider range of vehicles) across the range of the attribute to have to increase the application of fuel-saving technologies.

As a potential alternative to the constrained logistic function, NHTSA had, in proposing MY 2011 standards, presented information regarding a constrained linear function. As shown in the 2008 NPRM, a constrained linear function has the potential to avoid creating a localized region (in terms of vehicle footprint) over which the slope of the function is relatively steep. Although NHTSA did not receive public comments on this option at that time, the agency indicated that it still believed a linear function constrained by upper (on a gpm basis) and possibly lower limits could merit reconsideration in future CAFE rulemakings.

Having re-examined a constrained linear function for purposes of the final standards, and considered comments discussed above in Section II, NHTSA, with EPA, concludes that for both passenger cars and light trucks, the constrained linear functions finalized today remain meaningfully sloped over a wide footprint range, thereby providing a well-distributed disincentive to downsize vehicles in ways that could compromise highway safety. Further, the constrained linear functions finalized today are not so steeply sloped that they would provide a strong incentive to increase vehicle size in order to obtain a lower CAFE requirement and higher CO_2 limit, thereby compromising energy and environmental benefits. Therefore, today's final CAFE standards are defined by constrained linear functions.

The constrained linear function is defined according to the following formula:

$$TARGET = \frac{1}{MIN\left[MAX\left(c \times FOOTPRINT + d, \frac{1}{a}\right), \frac{1}{b}\right]}$$

Here, *TARGET* is the fuel economy target (in mpg) applicable to vehicles of a given footprint (*FOOTPRINT,* in square feet), *b* and *a* are the function's lower and upper asymptotes (also in mpg), respectively, *c* is the slope (in gpm per square foot) of the sloped portion of the function, and *d* is the intercept (in gpm) of the sloped portion of the function (that is, the value the sloped portion would take if extended to a footprint of 0 square feet. The *MIN* and *MAX* functions take the minimum and maximum, respectively of the included values; for example, *MIN*(1,2) = 1, *MAX*(1,2) = 2, and *MIN*[*MAX*(1,2),3)]=2.

e. How did NHTSA fit the coefficients that determine the shape of the final curves?

For purposes of this final rule and the preceding NPRM, and for EPA's use in developing new CO_2 emissions standards, potential curve shapes were fitted using methods similar to those applied by NHTSA in fitting the curves defining the MY 2011 standards. We began with the market inputs discussed above, but because the baseline fleet is technologically heterogeneous, NHTSA used the CAFE model to develop a fleet to which nearly all the technologies discussed in Section V of the FRIA and Chapter 3 of the Joint TSD [660] were applied, by taking the following steps: (1) Treating all manufacturers as unwilling to pay civil penalties rather than applying technology, (2) applying any technology at any time, irrespective of scheduled vehicle redesigns or freshening, and (3) ignoring "phase-in caps" that constrain the overall amount of technology that can be applied by the model to a given manufacturer's fleet. These steps helped to increase technological parity among vehicle models, thereby providing a better basis (than the baseline fleet) for estimating the statistical relationship between vehicle size and fuel economy.

However, while this approach produced curves that the agencies' judged appropriate for the NPRM, it did not do so for the final rule. Corrections to some engineering inputs in NHTSA's market forecast, while leading to a light truck curve nearly identical to that derived for the NPRM, yielded a considerably steeper passenger car curve. As discussed above in Section II, NHTSA and EPA are concerned about the incentives that would result from a significantly steeper curve. Considering this, and considering that the updated analysis—in terms of the error measure applied by the agency—supports the curve from the NPRM nearly as well as it supports the steeper curve, NHTSA and EPA are promulgating final standards based on the curves proposed in the NPRM.

More information on the process for fitting the passenger car and light truck curves for MYs 2012–2016 is available above in Section II.C, and NHTSA refers the reader to that section and to Chapter 2 of the Joint TSD. Section II.C also discusses comments NHTSA and EPA received on this process, and on the outcomes thereof.

D. Statutory Requirements

1. EPCA, as Amended by EISA

a. Standard Setting

NHTSA must establish separate standards for MY 2011–2020 passenger cars and light trucks, subject to two principal requirements.[661] First, the standards are subject to a minimum requirement regarding stringency: they must be set at levels high enough to ensure that the combined U.S. passenger car and light truck fleet achieves an average fuel economy level of not less than 35 mpg not later than MY 2020.[662] Second, as discussed above and at length in the March 2009 final rule establishing the MY 2011 CAFE standards, EPCA requires that the agency establish standards for all new passenger cars and light trucks at the maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that model year, based on a balancing of

[660] The agencies excluded diesel engines and strong hybrid vehicle technologies from this exercise (and only this exercise) because the agencies expect that manufacturers would not need to rely heavily on these technologies in order to comply with the final standards. NHTSA and EPA did include diesel engines and strong hybrid vehicle technologies in all other portions of their analyses.

[661] EISA added the following additional requirements: (1) Standards must be attribute-based and expressed in the form of a mathematical function. 49 U.S.C. 32902(b)(3)(A). (2) Standards for MYs 2011–2020 must "increase ratably" in each model year. 49 U.S.C. 32902(b)(2)(C). This requirement does not have a precise mathematical meaning, particularly because it must be interpreted in conjunction with the requirement to set the standards for each model year at the level determined to be the maximum feasible level for that model year. Generally speaking, the requirement for ratable increases means that the annual increases should not be disproportionately large or small in relation to each other.

[662] 49 U.S.C. 32902(b)(2)(A).

express statutory and other factors.[663] The implication of this second requirement is that it calls for setting a standard that exceeds the minimum requirement if the agency determines that the manufacturers can achieve a higher level. When determining the level achievable by the manufacturers, EPCA requires that the agency consider the four statutory factors of technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy. In addition, the agency has the authority to and traditionally does consider other relevant factors, such as the effect of the CAFE standards on motor vehicle safety. The ultimate determination of what standards can be considered maximum feasible involves a weighing and balancing of these factors. NHTSA received a number of comments on how the agency interprets its statutory requirements, and will respond to them in this section.

i. Statutory Factors Considered in Determining the Achievable Level of Average Fuel Economy

As none of the four factors is defined in EPCA and each remains interpreted only to a limited degree by case law, NHTSA has considerable latitude in interpreting them. NHTSA interprets the four statutory factors as set forth below.

(1) Technological Feasibility

"Technological feasibility" refers to whether a particular technology for improving fuel economy is available or can become available for commercial application in the model year for which a standard is being established. Thus, the agency is not limited in determining the level of new standards to technology that is already being commercially applied at the time of the rulemaking. It can, instead, set technology-forcing standards, *i.e.,* ones that make it necessary for manufacturers to engage in research and development in order to bring a new technology to market.

Commenters appear to have generally agreed with the agency's interpretation of technological feasibility. NESCAUM commented that the proposed standards were technologically feasible and cost-effective in the rulemaking timeframe. CBD and the UCSB students focused their comments more on the technology-forcing aspects of the definition of technological feasibility. CBD commented that the standards must be below the level of all that is technologically feasible if all the technology necessary to meet them is available today. The UCSB students similarly commented that the agencies should not base regulations for MY 2016 solely on technologies available today, that they should also consider technologies still in the research phase for the later years of the rulemaking timeframe.

While NHTSA agrees that the technological feasibility factor can include a degree of technology forcing, and that this could certainly be appropriate given EPCA's overarching purpose of energy conservation, we note that determining what levels of technology to require in the rulemaking timeframe requires a balancing of all relevant factors. Technologies that are still in the research phase now may be sufficiently advanced to become available for commercial application in, for example, MY 2016. However, given the rate at which the standards already require average mpg to rise, and given the current state of the industry, NHTSA does not believe that it would be reasonable to set standards mandating that manufacturers devote substantial resources to bringing these technologies to market immediately rather than to simply improving the fuel economy of their fleets by applying more of the technologies on the market today. As will be discussed further in Section IV.F below, technological feasibility is one of four factors that the agency balances in determining what standards would be maximum feasible for each model year. As the balancing may vary depending on the circumstances at hand for the model years in which the standards are set, the extent to which technological feasibility is simply met or plays a more dynamic role may also shift.

(2) Economic Practicability

"Economic practicability" refers to whether a standard is one "within the financial capability of the industry, but not so stringent as to" lead to "adverse economic consequences, such as a significant loss of jobs or the unreasonable elimination of consumer choice."[664] In an attempt to ensure the standards' economic practicability, the agency considers a variety of factors, including the annual rate at which manufacturers can increase the percentage of the fleet that has a particular type of fuel saving technology, and cost to consumers. Consumer acceptability is also an element of economic practicability.

At the same time, the law does not preclude a CAFE standard that poses considerable challenges to any individual manufacturer. The Conference Report for EPCA, as enacted in 1975, makes clear, and the case law affirms, "(A) determination of maximum feasible average fuel economy should not be keyed to the single manufacturer which might have the most difficulty achieving a given level of average fuel economy."[665] Instead, the agency is compelled "to weigh the benefits to the nation of a higher fuel economy standard against the difficulties of individual automobile manufacturers." *Id.* The law permits CAFE standards exceeding the projected capability of any particular manufacturer as long as the standard is economically practicable for the industry as a whole. Thus, while a particular CAFE standard may pose difficulties for one manufacturer, it may also present opportunities for another. The CAFE program is not necessarily intended to maintain the competitive positioning of each particular company. Rather, it is intended to enhance fuel economy of the vehicle fleet on American roads, while protecting motor vehicle safety and being mindful of the risk of harm to the overall United States economy.

Thus, NHTSA believes that this factor must be considered in the context of the competing concerns associated with different levels of standards. Prior to the MY 2005–2007 rulemaking, the agency generally sought to ensure the economy practicability of standards in part by setting them at or near the capability of the "least capable manufacturer" with a significant share of the market, *i.e.,* typically the manufacturer whose vehicles are, on average, the heaviest and largest. In the first several rulemakings to establish attribute based standards, the agency applied marginal cost benefit analysis. This ensured that the agency's application of technologies was limited to those that would pay for themselves and thus should have significant appeal to consumers. However, the agency can and has limited its application of technologies to those technologies, with or without the use of such analysis.

Besides the many commenters raising economic practicability as an issue in the context of the stringency of the proposed standards, some commenters also directly addressed the agency's interpretation of economic practicability. AIAM commented that NHTSA has wide discretion to consider economic practicability concerns as long as EPCA's overarching purpose of energy conservation is met, and that it would be within NHTSA's statutory discretion to set standards at levels

[663] 49 U.S.C. 32902(a).

[664] 67 FR 77015, 77021 (Dec. 16, 2002).

[665] *CEI–I,* 793 F.2d 1322, 1352 (DC Cir. 1986).

below those at which net benefits are maximized due to economic practicability. GM and Mitsubishi both commented that consideration of economic practicability should include more focus on individual manufacturers: GM stated that NHTSA must consider sales and employment impacts on individual manufacturers and not just industry in the aggregate, while Mitsubishi emphasized the difficulties of limited-line manufacturers in meeting standards that might be economically practicable for full-line manufacturers. CBD commented that a determination of economic practicability should not be tied to "differences between incremental improvements" that "fail to consider all relevant costs and benefits and fail to analyze the overall impact of the proposed standards." CBD pointed to the three-to-one benefit-cost ratio of the proposed standards to argue that much more stringent standards would still be economically practicable. ACEEE also commented that standards set at the level at which net benefits are maximized should be considered a "lower bound" for determining economic practicability.

While NHTSA agrees with AIAM in general that the agency has wide discretion to consider economic practicability concerns, we do not believe that economic practicability will always counsel setting standards lower than the point at which net benefits are maximized, given that it must be considered in the context of the overall balancing and EPCA's overarching purpose of energy conservation. Depending on the conditions of the industry and the assumptions used in the agency's analysis of alternative stringencies, NHTSA could well find that standards that maximize net benefits, or even higher standards, could be economically practicable. To that end, however, given the current conditions faced by the industry, which is perhaps just now passing the nadir of the economy-wide downturn and looking at a challenging road to recovery, and the relatively limited amount of lead time for MYs 2012–2016, we disagree with CBD's comment that the benefit-cost ratio of the final standards indicates that more stringent standards would be economically practicable during the rulemaking timeframe and with ACEEE's comment that standards higher than those that would maximize net benefits would be economically practicable at this time. These comments overlook the fact that nearly all manufacturers are capital-constrained at this time and may be for the next couple of model years; access to capital in a down market is crucial to making the investments in technology that the final standards will require, and requiring more technology will require significantly more capital, to which manufacturers would not likely have access. Moreover, economic practicability depends as well on manufacturers' ability to sell the vehicles that the standards require them to produce. If per-vehicle costs increase too much too soon, consumers may defer new vehicle purchases, which defeats the object of raising CAFE standards to get vehicles with better mileage on the road sooner and meet the need of the Nation to conserve energy. *See* Section IV.F below for further discussion of these issues.

As for GM's and Mitsubishi's comments, while the agency does consider carefully the impacts on individual manufacturers in the agency's analysis, as shown in the FRIA, we reiterate that economic practicability is not keyed to any single manufacturer. One of the main benefits of attribute-based standards is greater regulatory fairness—for all the manufacturers who build vehicles of a particular footprint, the target for that footprint is the same, yet each manufacturer has their own individual compliance obligation depending on the mix of vehicles they produce for sale. More manufacturers are required to improve their fuel economy, yet in a fairer way. And while some manufacturers may face difficulties under a given CAFE standard, others will find opportunities. The agency's consideration of economic practicability recognizes these difficulties and opportunities in the context of the industry as a whole, and in the context of balancing against the other statutory factors, as discussed further below.

(3) The Effect of Other Motor Vehicle Standards of the Government on Fuel Economy

"The effect of other motor vehicle standards of the Government on fuel economy," involves an analysis of the effects of compliance with emission,[666] safety, noise, or damageability standards on fuel economy capability and thus on average fuel economy. In previous CAFE rulemakings, the agency has said that pursuant to this provision, it considers the adverse effects of other motor vehicle standards on fuel economy. It said so because, from the CAFE program's earliest years[667] until present, the effects of such compliance on fuel economy capability over the history of the CAFE program have been negative ones. In those instances in which the effects are negative, NHTSA has said that it is called upon to "mak[e] a straightforward adjustment to the fuel economy improvement projections to account for the impacts of other Federal standards, principally those in the areas of emission control, occupant safety, vehicle damageability, and vehicle noise. However, only the unavoidable consequences should be accounted for. The automobile manufacturers must be expected to adopt those feasible methods of achieving compliance with other Federal standards which minimize any adverse fuel economy effects of those standards."[668] For example, safety standards that have the effect of increasing vehicle weight lower vehicle fuel economy capability and thus decrease the level of average fuel economy that the agency can determine to be feasible.

The "other motor vehicle standards" consideration has thus in practice functioned in a fashion similar to the provision in EPCA, as originally enacted, for adjusting the statutorily-specified CAFE standards for MY 1978–1980 passengers cars.[669] EPCA did not permit NHTSA to amend those standards based on a finding that the maximum feasible level of average fuel economy for any of those three years was greater or less than the standard specified for that year. Instead, it provided that the agency could only reduce the standards and only on one basis: If the agency found that there had been a Federal standards fuel economy reduction, *i.e.,* a reduction in fuel economy due to changes in the Federal vehicle standards, *e.g.,* emissions and safety, relative to the year of enactment, 1975.

The "other motor vehicle standards" provision is broader than the Federal standards fuel economy reduction provision. Although the effects analyzed to date under the "other motor vehicle standards" provision have been negative, there could be circumstances in which the effects are positive. In the event that the agency encountered such circumstances, it would be required to consider those positive effects. For example, if changes in vehicle safety technology led to NHTSA's amending a

[666] In the case of emission standards, this includes standards adopted by the Federal government and can include standards adopted by the States as well, since in certain circumstances the Clean Air Act allows States to adopt and enforce State standards different from the Federal ones.

[667] 42 FR 63184, 63188 (Dec. 15, 1977). *See* also 42 FR 33534, 33537 (Jun. 30, 1977).

[668] 42 FR 33534, 33537 (Jun. 30, 1977).

[669] That provision was deleted as obsolete when EPCA was codified in 1994.

safety standard in a way that permits manufacturers to reduce the weight added in complying with that standard, that weight reduction would increase vehicle fuel economy capability and thus increase the level of average fuel economy that could be determined to be feasible.

In the wake of *Massachusetts* v. *EPA* and of EPA's endangerment finding, its granting of a waiver to California for its motor vehicle GHG standards, and its own GHG standards for light-duty vehicles, NHTSA is confronted with the issue of how to treat those standards under the "other motor vehicle standards" provision. To the extent the GHG standards result in increases in fuel economy, they would do so almost exclusively as a result of inducing manufacturers to install the same types of technologies used by manufacturers in complying with the CAFE standards. The primary exception would involve increases in the efficiency of air conditioners.

In the NPRM, NHTSA tentatively concluded that the effects of the EPA and California standards are neither positive nor negative because the proposed rule resulted in consistent standards among all components of the National Program, but sought comment on whether and in what way the effects of the California and EPA standards should be considered under the "other motor vehicle standards" provision or other provisions of EPCA in 49 U.S.C. 32902, consistent with NHTSA's independent obligation under EPCA/EISA to issue CAFE standards. NHTSA stated that it had already considered EPA's proposal and the harmonization benefits of the National Program in developing its own proposed maximum feasible standards.

The Alliance commented that the extent to which the consideration of other motor vehicle standards of the government should affect NHTSA's standard-setting process was entirely within the agency's discretion. The Alliance agreed with NHTSA that the original intent of the factor was to ensure that NHTSA accounted for other government standards that might reduce fuel economy or inhibit fuel economy improvements, but stated that since GHG standards set by EPA and California overlap CAFE standards so extensively, and are thus functionally equivalent to CAFE standards (plus air conditioning), those standards should be "basically irrelevant to NHTSA's mission to set fuel economy standards, unless some specific aspect of the GHG standards actually makes it harder for mfrs to improve fuel economy." The Alliance stated further that NHTSA must still determine what levels of CAFE standards would be maximum feasible regardless of the findings or standards set by EPA and California. Thus, the Alliance stated, for purposes of the MYs 2012–2016 CAFE standards, EPA's GHG standards could be sufficiently considered by NHTSA given the agency's decision to harmonize as part of the National Program,[670] while California's GHG standards need not be considered because of the state's agreement under the National Program that compliance with EPA's standards would constitute compliance with its own. Ford concurred individually with the Alliance comments. NADA, in contrast, commented that EPA's GHG standards should not be considered as an "other vehicle standard" for purposes of this statutory factor, and argued that NHTSA need not and should not consider California's GHG standards due to preemption under EPCA.

Commenters from the state of California (the Attorney General and the Air Resources Board), in contrast, stated that NHTSA must consider the effects of the California GHG standards on fuel economy as a baseline for NHTSA's analysis, to give credit to the state's leadership role in achieving the levels required by the National Program. CBD seconded this comment.[671] The California Attorney General further stated that Congress discussed both positive and negative impacts of other standards on fuel economy in the 1975 Conference Reports preceding EPCA's enactment.[672] CARB and the University of Pennsylvania Environmental Law Project both cited the *Green Mountain Chrysler*[673] and *Central Valley Chrysler*[674] cases as supporting NHTSA's consideration of CARB's GHG standards pursuant to this factor.

NHTSA believes that these comments generally support the agency's interpretation of this factor as stated in the NPRM. While the agency may consider both positive and negative effects of other motor vehicle standards of the Government on fuel economy in determining what level of CAFE standards would be maximum feasible, given the fact that the final rule results in consistent standards among all components of the National Program, and given that NHTSA considered the harmonization benefits of the National Program in developing its own standards, the agency's obligation to balance this factor with the others may be considered accounted for.

(4) The Need of the United States To Conserve Energy

"The need of the United States to conserve energy" means "the consumer cost, national balance of payments, environmental, and foreign policy implications of our need for large quantities of petroleum, especially imported petroleum."[675] Environmental implications principally include those associated with reductions in emissions of criteria pollutants and CO_2. A prime example of foreign policy implications are energy independence and security concerns.

While a number of commenters cited the need of the nation to conserve energy in calling for the agency to set more stringent CAFE standards, none disagreed with the agency's interpretation of this factor and its influence on the statutory balancing required by EPCA. CBD, for example, commented that "Increasing mileage standards for this vehicle fleet is the single most effective and quickest available step the U.S. can take to conserve energy and to reduce the U.S. dependence on foreign oil, and also has an immediate and highly significant effect on total U.S. GHG emissions," and that accordingly, NHTSA should consider the need of the nation to conserve energy as counseling the agency to raise standards at a faster rate. NHTSA agrees that this factor tends to influence stringency upwards, but reiterates that the need of the nation to conserve energy is still but one of four factors that must be balanced, as discussed below.

ii. Other Factors Considered by NHTSA

The agency historically has considered the potential for adverse safety consequences in setting CAFE standards. This practice is recognized approvingly in case law. As the courts have recognized, "NHTSA has always examined the safety consequences of the CAFE standards in its overall consideration of relevant factors since its earliest rulemaking under the CAFE program." *Competitive Enterprise Institute* v. *NHTSA,* 901 F.2d 107, 120 n. 11 (DC Cir. 1990) ("*CEI I*") (citing 42 FR 33534, 33551 (June 30, 1977)). The courts have consistently upheld NHTSA's implementation of EPCA in this manner. *See, e.g., Competitive*

[670] The University of Pennsylvania Environmental Law Project offered a similar comment.

[671] NHTSA answered similar comments in the FEIS. See FEIS Section 10.2.4.2 for the agency's response.

[672] *Citing* HR Rep 94–340 at 86–87, 89–91 (1975 USCCAN 1762, 1848–49, 1851–53).

[673] *Green Mountain Chrysler Plymouth Dodge Jeep* v. *Crombie,* 508 F.Supp.2d 295 (D.Vt. 2007).

[674] *Central Valley Chrysler Jeep, Inc.* v. *Goldstene,* 529 F.Supp.2d 1151 (E.D. Cal. 2007).

[675] 42 FR 63184, 63188 (1977).

Enterprise Institute v. *NHTSA,* 956 F.2d 321, 322 (DC Cir. 1992) ("*CEI II*") (in determining the maximum feasible fuel economy standard, "NHTSA has always taken passenger safety into account.") (citing *CEI I,* 901 F.2d at 120 n. 11); *Competitive Enterprise Institute* v. *NHTSA,* 45 F.3d 481, 482–83 (DC Cir. 1995) ("*CEI III*") (same); *Center for Biological Diversity* v. *NHTSA,* 538 F.3d 1172, 1203–04 (9th Cir. 2008) (upholding NHTSA's analysis of vehicle safety issues associated with weight in connection with the MY 2008–11 light truck CAFE rule). Thus, in evaluating what levels of stringency would result in maximum feasible standards, NHTSA assesses the potential safety impacts and considers them in balancing the statutory considerations and to determine the appropriate level of the standards.

Under the universal or "flat" CAFE standards that NHTSA was previously authorized to establish, manufacturers were encouraged to respond to higher standards by building smaller, less safe vehicles in order to "balance out" the larger, safer vehicles that the public generally preferred to buy, which resulted in a higher mass differential between the smallest and the largest vehicles, with a correspondingly greater risk to safety. Under the attribute-based standards being finalized today, that risk is reduced because building smaller vehicles would tend to raise a manufacturer's overall CAFE obligation, rather than only raising its fleet average CAFE, and because all vehicles are required to continue improving their fuel economy. In prior rulemakings, NHTSA limited the application of mass reduction/material substitution in our modeling analysis to vehicles over 5,000 lbs GVWR,[676] but for purposes of today's final standards, NHTSA has revised its modeling analysis to allow some application of mass reduction/material substitution for all vehicles, although it is concentrated in the largest and heaviest vehicles, because we believe that this is more consistent with how manufacturers will actually respond to the standards. However, as discussed above, NHTSA does not mandate the use of any particular technology by manufacturers in meeting the standards. More information on the new approach to modeling manufacturer use of downweighting/material substitution is available in Chapter 3 of the Joint TSD and in Section V of the FRIA; and the estimated safety impacts that may be due to the final standards are described below.

iii. Factors that NHTSA is Prohibited from Considering

EPCA also provides that in determining the level at which it should set CAFE standards for a particular model year, NHTSA may not consider the ability of manufacturers to take advantage of several EPCA provisions that facilitate compliance with the CAFE standards and thereby reduce the costs of compliance.[677] As discussed further below, manufacturers can earn compliance credits by exceeding the CAFE standards and then use those credits to achieve compliance in years in which their measured average fuel economy falls below the standards. Manufacturers can also increase their CAFE levels through MY 2019 by producing alternative fuel vehicles. EPCA provides an incentive for producing these vehicles by specifying that their fuel economy is to be determined using a special calculation procedure that results in those vehicles being assigned a high fuel economy level.

The effect of the prohibitions against considering these flexibilities in setting the CAFE standards is that the flexibilities remain voluntarily-employed measures. If the agency were instead to assume manufacturer use of those flexibilities in setting new standards, that assumption would result in higher standards and thus tend to require manufacturers to use those flexibilities.

iv. Determining the Level of the Standards by Balancing the Factors

NHTSA has broad discretion in balancing the above factors in determining the appropriate levels of average fuel economy at which to set the CAFE standards for each model year. Congress "specifically delegated the process of setting * * * fuel economy standards with *broad* guidelines concerning the factors that the agency must consider."[678] The breadth of those guidelines, the absence of any statutorily prescribed formula for balancing the factors, the fact that the relative weight to be given to the various factors may change from rulemaking to rulemaking as the underlying facts change, and the fact that the factors may often be conflicting with respect to whether they militate toward higher or lower standards give NHTSA broad discretion to decide what weight to give each of the competing policies and concerns and then determine how to balance them. The exercise of that discretion is subject to the necessity of ensuring that NHTSA's balancing does not undermine the fundamental purpose of the EPCA: Energy conservation,[679] and as long as that balancing reasonably accommodates "conflicting policies that were committed to the agency's care by the statute."[680] The balancing of the factors in any given rulemaking is highly dependent on the factual and policy context of that rulemaking. Given the changes over time in facts bearing on assessment of the various factors, such as those relating to the economic conditions, fuel prices and the state of climate change science, the agency recognizes that what was a reasonable balancing of competing statutory priorities in one rulemaking may not be a reasonable balancing of those priorities in another rulemaking.[681] Nevertheless, the agency retains substantial discretion under EPCA to choose among reasonable alternatives.

EPCA neither requires nor precludes the use of any type of cost-benefit analysis as a tool to help inform the balancing process. While NHTSA used marginal cost-benefit analysis in the first two rulemakings to establish attribute-based CAFE standards, as noted above, it was not required to do so and is not required to continue to do so. Regardless of what type of analysis is or is not used, considerations relating to costs and benefits remain an important part of CAFE standard setting.

Because the relevant considerations and factors can reasonably be balanced in a variety of ways under EPCA, and because of uncertainties associated with the many technological and cost inputs, NHTSA considers a wide variety of alternative sets of standards, each reflecting different balancing of those policies and concerns, to aid it in discerning reasonable outcomes. Among the alternatives providing for an increase in the standards in this rulemaking, the alternatives range in stringency from a set of standards that increase, on average, 3 percent annually to a set of standards that increase, on average, 7 percent annually.

v. Other Standards—Minimum Domestic Passenger Car Standard

The minimum domestic passenger car standard was added to the CAFE

[676] *See* 74 FR 14396–14407 (Mar. 30, 2009).

[677] 49 U.S.C. 32902(h).

[678] *Center for Auto Safety v. NHTSA,* 793 F.2d 1322, 1341 (C.A.D.C. 1986).

[679] *Center for Biological Diversity* v. *NHTSA,* 538 F.3d 1172, 1195 (9th Cir. 2008).

[680] *CAS,* 1338 (quoting *Chevron U.S.A., Inc.* v. *Natural Resources Defense Council, Inc.,* 467 U.S. 837, 845).

[681] *CBD* v. *NHTSA,* 538 F.3d 1172, 1198 (9th Cir. 2008).

program through EISA, when Congress gave NHTSA explicit authority to set universal standards for domestically-manufactured passenger cars at the level of 27.5 mpg or 92 percent of the average fuel economy of the combined domestic and import passenger car fleets in that model year, whichever was greater.[682] This minimum standard was intended to act as a "backstop," ensuring that domestically-manufactured passenger cars reached a given mpg level even if the market shifted in ways likely to reduce overall fleet mpg. Congress was silent as to whether the agency could or should develop similar backstop standards for imported passenger cars and light trucks. NHTSA has struggled with this question since EISA was enacted.

In the MY 2011 final rule, facing comments split fairly evenly between support and opposition to additional backstop standards, NHTSA noted Congress' silence and "accept[ed] at least the possibility that * * * [it] could be reasonably interpreted as permissive rather than restrictive," but concluded based on the record for that rulemaking as a whole that additional backstop standards were not necessary for MY 2011, given the lack of leadtime for manufacturers to change their MY 2011 vehicles, the apparently-growing public preference for smaller vehicles, and the anti-backsliding characteristics of the footprint-based curves.[683] NHTSA stated, however, that it would continue to monitor manufacturers' product plans and compliance, and would revisit the backstop issue if it became necessary in future rulemakings.[684]

Thus, in the MYs 2012–2016 NPRM, NHTSA again sought comment on the issue of additional backstop standards, recognizing the possibility that low fuel prices during the years that the MYs 2012–2016 vehicles are in service might lead to less than anticipated fuel savings.[685] NHTSA asked commenters, in addressing this issue, to consider reviewing the agency's discussion in the MY 2011 final rule, which the agency described as concluding that its authority was likely limited by Congress' silence to setting only the backstop that Congress expressly provided for.[686] EPA also sought comment on whether it should set backstop standards under the CAA for MYs 2012–2016.

As discussed above in Section II, many commenters addressed the backstop issue, and again comments were fairly evenly split between support and opposition to additional backstop standards. While commenters opposed to additional backstops, such as the Alliance, largely reiterated NHTSA's previous statements with regard to its backstop authority, some commenters in favor of additional backstops provided more detailed legal arguments than have been previously presented for the agency's consideration. Section II provides NHTSA's and EPA's general response to comments on the backstop issue; this section provides NHTSA's specific response to the legal arguments by Sierra Club *et al.*[687] on the agency's authority to set additional backstop standards.

The Sierra Club *et al.* commented that a more permissive reading of Congress' silence in EISA was appropriate given the context of the statute, the 9th Circuit's revised opinion in *CBD* v. *NHTSA*, and the assumptions employed in the NPRM analysis. The commenters stated that given that EISA includes the 35-in-2020 and ratable increase requirements, and given that CAFE standards were only just starting to rise for light trucks at the time of EISA's enactment and had remained at the statutory level of 27.5 mpg for passenger cars for many years, it appears that Congress' intent in EISA was to raise CAFE standards as rapidly as possible. Thus, the commenters stated, if the purpose of EISA was to promote the maximum feasible increase in fuel economy with ratable increases, then there was no reason to think that backstop standards would be inconsistent with that purpose—if they were inconsistent, Congress would not have included one for domestic passenger cars. Similarly, Congress could not have thought that additional backstops were inconsistent with attribute-based standards, or it would not have included one for domestic passenger cars.[688] The commenters also cited D.C. Circuit case law stating that congressional silence leaves room for agency discretion; specifically, that "[w]hen interpreting statutes that govern agency action, [the courts] have consistently recognized that a congressional mandate in one section and silence in another often 'suggests not a prohibition but simply a decision not to mandate any solution in the second context, *i.e.,* to leave the question to agency discretion.' "[689]

The Sierra Club *et al.* also commented that it appeared that the 9th Circuit's revised opinion in *CBD* v. *NHTSA* supported the agency's discretion to set additional backstops, since it was revised after the passage of EISA and did not change its earlier holding (pertaining to the original EPCA language) that backstop standards were within the agency's discretion.[690]

And finally, the commenters stated that NHTSA's rationale for not adopting additional backstops in the MY 2011 final rule should not be relied on for MYs 2012–2016, namely, that the agency's belief that backstop standards were unnecessary to ensure the expected levels of fuel savings given the short lead time between the promulgation of the final standards and the beginning of MY 2011, the apparent growing consumer preference for smaller vehicles, and the existing anti-backsliding measures in the attribute-based curves. As described above in Section II, these commenters (and many others) expressed concern about the agencies' fleet mix assumptions and their potential effect on estimated fuel savings.

In response, and given DC Circuit precedent as cited above, NHTSA agrees that whether to adopt additional minimum standards for imported passenger cars and light trucks is squarely within the agency's discretion, and that such discretion should be exercised as necessary to avoid undue losses in fuel savings due to market shifts or other forces while still respecting the statutorily-mandated manufacturer need for lead time in establishing CAFE standards. However, as discussed above in Section II.C, NHTSA remains confident that the projections of the future fleet mix are reliable, and that future changes in the fleet mix of footprints and sales are not likely to lead to more than modest changes in projected emissions reductions or fuel savings. There are only a relatively few model years at issue, and market trends today are consistent with the agencies' estimates, showing shifts from light trucks to passenger cars and increased emphasis on fuel economy from all vehicles. The shapes of the curves also tend to avoid

[682] 49 U.S.C. 32902(b)(4).

[683] 74 FR at 14412 (Mar. 30, 2009).

[684] *Id.*

[685] 74 FR at 49685 (Sept. 28, 2009).

[686] *Id.* at 49637, 49685 (Sept. 28, 2009).

[687] NHTSA refers to these commenters by the shorthand "Sierra Club *et al.*," but the group consists of the Sierra Club, the Safe Climate Campaign, the Coalition for Clean Air, the Alliance for Climate Protection, and Environment America. Their comments may be found at Docket No. EPA–HQ–OAR–2009–0472–7278.1.

[688] The commenters also suggested that NHTSA could set attribute-based backstop standards if it was concerned that Congress' mandate to set attribute-based standards generally precluded additional flat backstops.

[689] *Citing Catawba County, N.C.* v. *EPA,* 571 F.3d 20, 36 (DC Cir. 2009) (quoting *Cheney R. Co.* v. *ICC,* 902 F.2d 66, 69 (DC Cir. 1990)).

[690] *Citing CBD* v. *NHTSA,* 538 F.3d at 1204–06 (9th Cir. 2008).

or minimize regulatory incentives for manufacturers to upsize their fleet to change their compliance burden, and the risk of vehicle upsizing or changing vehicle offerings to "game" the passenger car and light truck definitions to which commenters refer is not so great for the model years in question, because the changes that commenters suggest manufacturers might make are neither so simple nor so likely to be accepted by consumers, as discussed above.

Thus, NHTSA is confident that the anticipated increases in average fuel economy and reductions in average CO_2 emission rates can be achieved without backstops under EISA, as noted above. Nevertheless, we acknowledge that the MY 2016 fuel economy goal of 34.1 mpg is an estimate and not a standard,[691] and that changes in fuel prices, consumer preferences, and/or vehicle survival and mileage accumulation rates could result in either smaller or larger oil savings. However, as explained above and elsewhere in the rule, NHTSA believes that the possibility of not meeting (or, alternatively, exceeding) fuel economy goals exists, but is not likely to lead to more than modest changes in the currently-projected levels of fuel and GHG savings. NHTSA plans to conduct retrospective analysis to monitor progress, and has the authority to revise standards if warranted, as long as sufficient lead time is provided. Given this, and given the potential complexities in designing an appropriate backstop, NHTSA believes that the balance here points to not adopting additional backstops at this time for the MYs 2012–2016 standards other than NHTSA's issuing the ones required by EPCA/EISA for domestic passenger cars. If, during the timeframe of this rule, NHTSA observes a significant shift in the manufacturer's product mix resulting in a relaxation of their estimated targets, NHTSA and EPA will reconsider options, both for MYs 2012–2016 and future rulemakings.

2. Administrative Procedure Act

To be upheld under the "arbitrary and capricious" standard of judicial review in the APA, an agency rule must be rational, based on consideration of the relevant factors, and within the scope of the authority delegated to the agency by the statute. The agency must examine the relevant data and articulate a satisfactory explanation for its action including a "rational connection between the facts found and the choice made." *Burlington Truck Lines, Inc.* v. *United States,* 371 U.S. 156, 168 (1962).

Statutory interpretations included in an agency's rule are subjected to the two-step analysis of *Chevron, U.S.A., Inc.* v. *Natural Resources Defense Council,* 467 U.S. 837, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984). Under step one, where a statute "has directly spoken to the precise question at issue," *id.* at 842, 104 S.Ct. 2778, the court and the agency "must give effect to the unambiguously expressed intent of Congress," *id.* at 843, 104 S.Ct. 2778. If the statute is silent or ambiguous regarding the specific question, the court proceeds to step two and asks "whether the agency's answer is based on a permissible construction of the statute." *Id.*

If an agency's interpretation differs from the one that it has previously adopted, the agency need not demonstrate that the prior position was wrong or even less desirable. Rather, the agency would need only to demonstrate that its *new* position is consistent with the statute and supported by the record, and acknowledge that this is a departure from past positions. The Supreme Court emphasized this recently in *FCC* v. *Fox Television,* 129 S.Ct. 1800 (2009). When an agency changes course from earlier regulations, "the requirement that an agency provide reasoned explanation for its action would ordinarily demand that it display awareness that it *is* changing position," but "need not demonstrate to a court's satisfaction that the reasons for the new policy are *better* than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency *believes* it to be better, which the conscious change of course adequately indicates."[692]

The APA also requires that agencies provide notice and comment to the public when proposing regulations.[693] Two commenters, the American Chemistry Council and the American Petroleum Institute, argued that the agreements by auto manufacturers and California to support the National Program indicated that a "deal" had been struck between the agencies and these parties, which was not available as part of the administrative record and which the public had not been given the opportunity to comment on. The commenters argued that this violated the APA.

In response, under the APA, agencies "must justify their rulemakings solely on the basis of the record [they] compile[] and make[] public."[694] Any informal contacts that occurred prior to the release of the NPRM may have been informative for the agencies and other parties involved in developing the NPRM, but they did not release the agencies of their obligation consider and respond to public comments on the NPRM and to justify the final standards based on the public record. The agencies believe that the record fully justifies the final standards, demonstrating analytically that they are the maximum feasible and reasonable for the model years covered. Thus, we disagree that there has been any violation of the APA.

3. National Environmental Policy Act

As discussed above, EPCA requires the agency to determine what level at which to set the CAFE standards for each model year by considering the four factors of technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy. NEPA directs that environmental considerations be integrated into that process. To accomplish that purpose, NEPA requires an agency to compare the potential environmental impacts of its proposed action to those of a reasonable range of alternatives.

To explore the environmental consequences in depth, NHTSA has prepared both a draft and a final environmental impact statement. The purpose of an EIS is to "provide full and fair discussion of significant environmental impacts and [to] inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 CFR 1502.1.

NEPA is "a procedural statute that mandates a process rather than a particular result." *Stewart Park & Reserve Coal., Inc.* v. *Slater,* 352 F.3d at 557. The agency's overall EIS-related obligation is to "take a 'hard look' at the environmental consequences before taking a major action." *Baltimore Gas & Elec. Co.* v. *Natural Res. Def. Council, Inc.,* 462 U.S. 87, 97, 103 S.Ct. 2246, 76 L.Ed.2d 437 (1983). Significantly, "[i]f the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs." *Robertson* v. *Methow Valley Citizens Council,* 490

[691] The MYs 2012–2016 passenger car and light truck curves are the actual standards.

[692] *Ibid.,* 1181.

[693] 5 U.S.C. 553.

[694] *Sierra Club* v. *Costle,* 657 F.2d 298, 401 (DC Cir. 1981).

U.S. 332, 350, 109 S.Ct. 1835, 104 L.Ed.2d 351 (1989).

The agency must identify the "environmentally preferable" alternative, but need not adopt it. "Congress in enacting NEPA * * * did not require agencies to elevate environmental concerns over other appropriate considerations." *Baltimore Gas and Elec. Co.* v. *Natural Resources Defense Council, Inc.,* 462 U.S. 87, 97 (1983). Instead, NEPA requires an agency to develop alternatives to the proposed action in preparing an EIS. 42 U.S.C. 4332(2)(C)(iii). The statute does not command the agency to favor an environmentally preferable course of action, only that it make its decision to proceed with the action after taking a hard look at environmental consequences.

This final rule also constitutes a Record of Decision for NHTSA under NEPA. Section IV.K below provides much more information on the agency's NEPA analysis for this rulemaking, and on how this final rule constitutes a Record of Decision.

E. What are the final CAFE standards?

1. Form of the Standards

Each of the CAFE standards that NHTSA is finalizing today for passenger cars and light trucks is expressed as a mathematical function that defines a fuel economy target applicable to each vehicle model and, for each fleet, establishes a required CAFE level determined by computing the sales-weighted harmonic average of those targets.[695]

As discussed above in Section II.C, NHTSA has determined fuel economy targets using a constrained linear function defined according to the following formula:

$$TARGET = \frac{1}{MIN\left[MAX\left(c \times FOOTPRINT + d, \frac{1}{a}\right), \frac{1}{b}\right]}$$

Here, *TARGET* is the fuel economy target (in mpg) applicable to vehicles of a given footprint (*FOOTPRINT,* in square feet), *b* and *a* are the function's lower and upper asymptotes (also in mpg), respectively, *c* is the slope (in gpm per square foot) of the sloped portion of the function, and *d* is the intercept (in gpm) of the sloped portion of the function (that is, the value the sloped portion would take if extended to a footprint of 0 square feet. The *MIN* and *MAX* functions take the minimum and maximum, respectively of the included values.

In the NPRM preceding today's final rule (as under the recently-promulgated MY 2011 standards), NHTSA proposed that the CAFE level required of any given manufacturer be determined by calculating the production-weighted harmonic average of the fuel economy targets applicable to each vehicle model:

$$CAFE_{required} = \frac{\sum_i SALES_i}{\sum_i \frac{SALES_i}{TARGET_i}}$$

Here, $CAFE_{required}$ is the required level for a given fleet, *SALESi* is the number of units of model $_i$ produced for sale in the United States, $TARGET_i$ is the fuel economy target applicable to model $_i$ (according to the equation shown in Chapter II and based on the footprint of model *i*), and the summations in the numerator and denominator are both performed over all models in the fleet in question.

However, comments by Honda and Toyota indicate that the defined variables used in the equations could be interpreted differently by vehicle manufacturers. The term "footprint of a vehicle model" could be interpreted to mean that a manufacturer only has to use one representative footprint within a model type or that it is necessary to use all the unique footprints and corresponding fuel economy target standards within a model type when determining a fleet target standard.

In the same NPRM, EPA proposed new regulations which also include the calculation of standards based on the attribute of footprint. The EPA regulation text is specific and states that standards will be derived using the target values "for each unique combination of model type and footprint value" (proposed regulation text 40 CFR 86.1818–12(c)(2)(ii)(B) for passenger automobiles and (c)(3)(ii)(B) for light trucks). Also, in an EPA final rule issued November 25, 2009, the manufacturers are required to provide in their final model year reports to EPA data for "each unique footprint within each model type" used to calculate the new CAFE program fuel economy levels (40 CFR 600.512–08(c)(8) and (9)). Using this term would be more definitive than using terms such as "footprint of a vehicle model" and would more fully harmonize the NHTSA and EPA regulations. Therefore, under the final CAFE standards promulgated today, a manufacturer's "fleet target standard" will be derived from the summation of the targets for all and every unique footprint within each model type for all model types that make up a fleet of vehicles. Also, to provide greater clarity, the equation will use the variable name *PRODUCTION* rather than *SALES* to refer to production of vehicles for sale in the United States. Otherwise, for purposes of the final rule the same equation will apply:

[695] Required CAFE levels shown here are *estimated* required levels based on NHTSA's current projection of manufacturers' vehicle fleets in MYs 2012–2016. *Actual* required levels are not determined until the end of each model year, when all of the vehicles produced by a manufacturer in that model year are known and their compliance obligation can be determined with certainty. The target curves, as defined by the constrained linear function, and as embedded in the function for the sales-weighted harmonic average, are the real "standards" being established today.

$$CAFE_{required} = \frac{\sum_i PRODUCTION_i}{\sum_i \frac{PRODUCTION_i}{TARGET_i}}$$

However, $PRODUCTION_i$ is the number of units produced for sale in the United States of each ith unique footprint within each model type, produced for sale in the United States, and $TARGET_i$ is the corresponding fuel economy target (according to the equation shown in Chapter II and based on the corresponding footprint), and the summations in the numerator and denominator are both performed over all unique footprint and model type combinations in the fleet in question. The equations and terms specified for calculating the required CAFE fleet values in Part 531.5(b) and (c) for MYs 2012–2016, and Part 533.5(g), (h) and (i) for MYs 2008–2016 will be updated accordingly. Although the agency is not changing the equations for the MY 2011 standards, we would expect manufacturers to follow the same procedures for calculating their required levels for that model year. Also, the Appendices in each of these parts will also be updated to provide corresponding examples of calculating the fleet standards.

Corresponding changes to regulatory text defining CAFE standards are discussed below in Section IV.I.

The final standards are, therefore, specified by the four coefficients defining fuel economy targets:

a = upper limit (mpg)

b = lower limit (mpg)

c = slope (gpm per square foot)

d = intercept (gpm)

The values of the coefficients are different for the passenger car standards and the light truck standards.

2. Passenger Car Standards for MYs 2012–2016

For passenger cars, NHTSA proposed CAFE standards defined by the following coefficients during MYs 2012–2016:

TABLE IV.E.2–1—COEFFICIENTS DEFINING PROPOSED MY 2012–2016 FUEL ECONOMY TARGETS FOR PASSENGER CARS

Coefficient	2012	2013	2014	2015	2016
a (mpg)	36.23	37.15	38.08	39.55	41.38
b (mpg)	28.12	28.67	29.22	30.08	31.12
c (gpm/sf)	0.0005308	0.0005308	0.0005308	0.0005308	0.0005308
d (gpm)	0.005842	0.005153	0.004498	0.003520	0.002406

After updating inputs to its analysis, and revisiting the form and stringency of both passenger cars and light truck standards, as discussed in Section II, NHTSA is finalizing passenger car CAFE standards defined by the following coefficients during MYs 2012–2016:

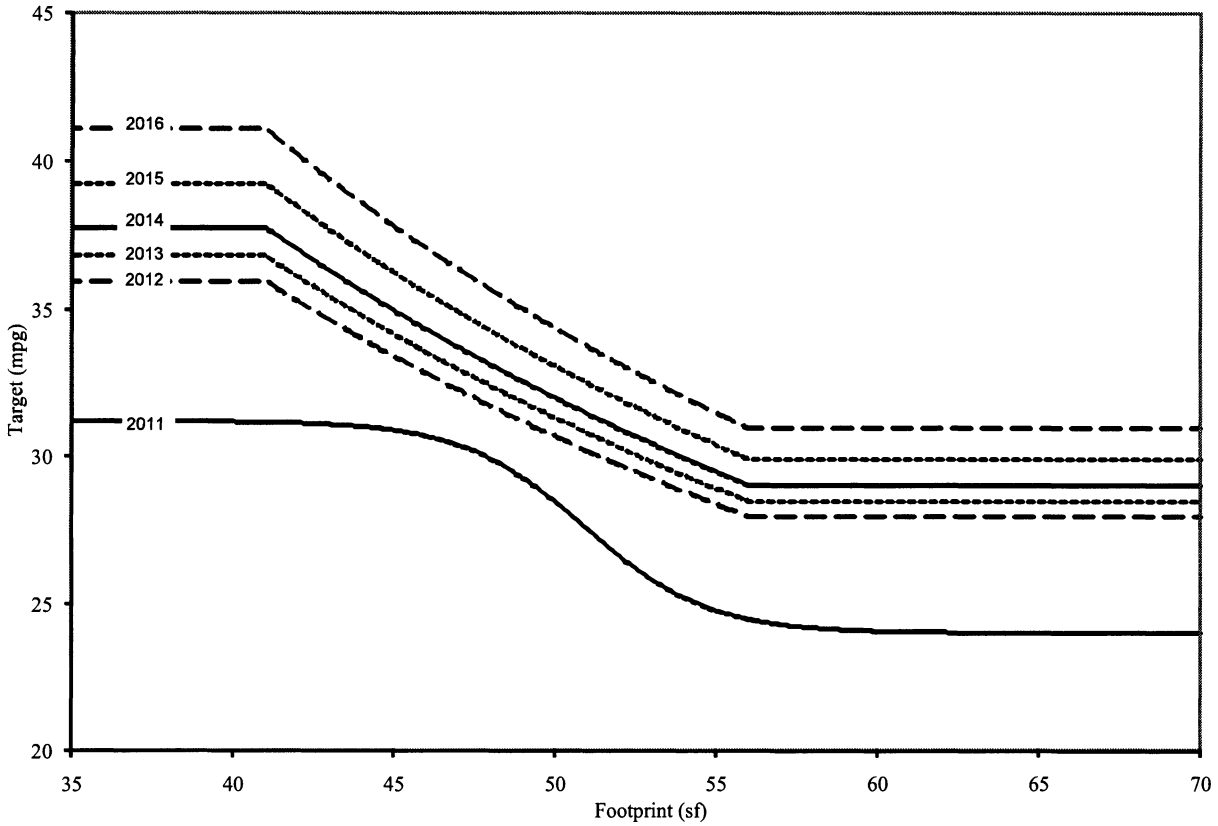
TABLE IV.E.2–2—COEFFICIENTS DEFINING FINAL MY 2012–2016 FUEL ECONOMY TARGETS FOR PASSENGER CARS

Coefficient	2012	2013	2014	2015	2016
a (mpg)	35.95	36.80	37.75	39.24	41.09
b (mpg)	27.95	28.46	29.03	29.90	30.96
c (gpm/sf)	0.0005308	0.0005308	0.0005308	0.0005308	0.0005308
d (gpm)	0.006057	0.005410	0.004725	0.003719	0.002573

These coefficients reflect the agency's decision, discussed above in Section II, to leave the shapes of both the passenger car and light truck curves unchanged. They also reflect the agency's reevaluation of the "gap" in stringency between the passenger car and light truck standard, also discussed in Section II.

These coefficients result in the footprint-dependent target curves shown graphically below. The MY 2011 final standard, which is specified by a constrained logistic function rather than a constrained linear function, is shown for comparison.

Figure IV.E.2-1 Final MY 2011 and Final MY 2012-2016 Fuel Economy Target Curves for Passenger Cars



As discussed, the CAFE levels required of individual manufacturers will depend on the mix of vehicles they produce for sale in the United States. Based on the market forecast of future sales that NHTSA has used to examine today's final CAFE standards, the agency estimates that the targets shown above will result in the following average required fuel economy levels for individual manufacturers during MYs 2012–2016 (an updated estimate of the average required fuel economy level under the final MY 2011 standard is shown for comparison): [696]

TABLE IV.E.2–3—ESTIMATED AVERAGE FUEL ECONOMY REQUIRED UNDER FINAL MY 2011 AND FINAL MY 2012–2016 CAFE STANDARDS FOR PASSENGER CARS

Manufacturer	MY 2011	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	30.2	33.0	33.7	34.5	35.7	37.3
Chrysler	29.4	32.6	33.3	34.1	35.2	36.7
Daimler	29.2	32.0	32.7	33.3	34.4	35.8
Ford	29.7	32.9	33.7	34.4	35.6	37.1
General Motors	30.3	32.7	33.5	34.2	35.4	36.9
Honda	30.8	33.8	34.6	35.4	36.7	38.3
Hyundai	30.9	33.8	34.3	35.1	36.6	38.2
Kia	30.6	33.4	34.2	35.0	36.3	37.9
Mazda	30.6	33.8	34.6	35.5	36.8	38.4
Mitsubishi	31.0	34.2	35.0	35.8	37.1	38.7
Nissan	30.7	33.3	34.1	34.9	36.1	37.7

[696] In the March 2009 final rule establishing MY 2011 standards for passenger cars and light trucks, NHTSA estimated that the required fuel economy levels for passenger cars would average 30.2 mpg under the MY 2011 passenger car standard. Based on the agency's current forecast of the MY 2011 passenger car market, which anticipates greater numbers of passenger cars than the forecast used in the MY 2011 final rule, NHTSA now estimates that the average required fuel economy level for passenger cars will be 30.4 mpg in MY 2011. This does not mean that the agency is making the standards more stringent for that model year, or that any manufacturer will necessarily face a more difficult CAFE standard, it simply reflects the change in assumptions about what vehicles will be produced for sale in that model year. The target curve remains the same, and each manufacturer's compliance obligation will still be determined at the end of the model year.

TABLE IV.E.2–3—ESTIMATED AVERAGE FUEL ECONOMY REQUIRED UNDER FINAL MY 2011 AND FINAL MY 2012–2016 CAFE STANDARDS FOR PASSENGER CARS—Continued

Manufacturer	MY 2011	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
Porsche	31.2	35.9	36.8	37.8	39.2	41.1
Subaru	31.0	34.6	35.5	36.3	37.7	39.4
Suzuki	31.2	35.8	36.6	37.5	39.0	40.8
Tata	28.0	30.7	31.4	32.1	33.3	34.7
Toyota	30.8	33.9	34.7	35.5	36.8	38.4
Volkswagen	30.8	34.3	35.0	35.9	37.2	38.8
Average	30.4	33.3	34.2	34.9	36.2	37.8

Because a manufacturer's required average fuel economy level for a model year under the final standards will be based on its actual production numbers in that model year, its official required fuel economy level will not be known until the end of that model year. However, because the targets for each vehicle footprint will be established in advance of the model year, a manufacturer should be able to estimate its required level accurately.

3. Minimum Domestic Passenger Car Standards

EISA expressly requires each manufacturer to meet a minimum fuel economy standard for domestically manufactured passenger cars in addition to meeting the standards set by NHTSA. According to the statute (49 U.S.C. 32902(b)(4)) the minimum standard shall be the greater of (A) 27.5 miles per gallon; or (B) 92 percent of the average fuel economy projected by the Secretary for the combined domestic and non-domestic passenger automobile fleets manufactured for sale in the United States by all manufacturers in the model year. The agency must publish the projected minimum standards in the **Federal Register** when the passenger car standards for the model year in question are promulgated.

As published in the MY 2011 final rule, the domestic minimum passenger car standard for MY 2011 was set at 27.8 mpg, which represented 92 percent of the final projected passenger car standards promulgated for that model year.[697] NHTSA stated at the time that "The final calculated minimum standards will be updated to reflect any changes in the projected passenger car standards."[698] Subsequently, in the NPRM proposing the MYs 2012–2016 standards, NHTSA noted that given changes in the projected estimated required passenger car standard for MY 2011,[699] 92 percent of that standard would be 28.0 mpg, not 27.8 mpg, and proposed to raise the minimum domestic passenger car standard accordingly.

The Alliance commented to the NPRM that the minimum domestic passenger car standard is subject to the 18-month lead time rule for standards per 49 U.S.C. per 49 U.S.C. 32902(a), and that NHTSA therefore cannot revise it at this time. Toyota individually offered identical comments.

49 U.S.C. 32902(b)(4)(B) does state that the minimum domestic passenger car standard shall be 92 percent of the projected average fuel economy for the passenger car fleet, "which projection shall be published in the **Federal Register** when the standard for that model year is promulgated in accordance with this section." In reviewing the statute, the agency concurs that the minimum domestic passenger car standard should be based on the agency's fleet assumptions when the passenger car standard for that year is promulgated, which would make it inappropriate to change the minimum standard for MY 2011 at this time. However, we note that we do not read this language to preclude any change in the minimum standard after it is first promulgated for a model year. As long as the 18-month lead-time requirement of 49 U.S.C. 32902(a) is respected, NHTSA believes that the language of the statute suggests that the 92 percent should be determined anew any time the passenger car standards are revised.

The Alliance also commented that the minimum domestic passenger car standard should be based on the projected "actual" (NHTSA refers to this as "estimated achieved") mpg level for the combined passenger car fleet, rather than based on the projected "target" mpg level (NHTSA refers to this as "estimated required") for the combined fleet. The Alliance argued that the plain language of the statute states that 92 percent should be taken of the "average fuel economy projected * * * for the combined * * * fleets," which is different than the average fuel economy *standard* projected. The Alliance further argued that using the "estimated achieved" value to determine the 92 percent will avoid inadvertently "considering" FFV credits in setting the minimum standard, since the "estimated achieved" value is determined by ignoring FFV credits. Toyota individually offered identical comments.

NHTSA disagrees that the minimum standard should be based on the estimated achieved levels rather than the estimated required levels. NHTSA interprets Congress' reference in the second clause of 32902(b)(4)(B) to the standard promulgated in that model year as indicating that Congress intended "projected average fuel economy" in the first clause to pertain to the estimated required level, not the estimated achieved level. The Alliance's concern that a minimum standard based on the estimated required level "inadvertently considers" FFV credits is misplaced, because NHTSA is statutorily prohibited from considering FFV credits in setting maximum feasible standards. Thus, NHTSA has continued to determine the minimum domestic passenger car standard based on the estimated required mpg levels projected for the model years covered by the rulemaking.

Based on NHTSA's current market forecast, the agency's estimates of these minimum standards under the final MY 2012–2016 CAFE standards (and, for comparison, the final MY 2011 minimum domestic passenger car standard) are summarized below in Table IV.E.3–1.

[697] *See* 74 FR at 14410 (Mar. 30, 3009).

[698] *Id.*

[699] Readers should remember, of course, that the "estimated required standard" is not necessarily the ultimate mpg level with which manufacturers will have to comply, because the ultimate mpg level for each manufacturer is determined at the end of the model year based on the target curves and the mix of vehicles that each manufacturer has produced for sale. The mpg level designated as "estimated required' is exactly that, an estimate.

TABLE IV.E.3–1—ESTIMATED MINIMUM STANDARD FOR DOMESTICALLY MANUFACTURED PASSENGER CARS UNDER FINAL MY 2011 AND FINAL MY 2012–2016 CAFE STANDARDS FOR PASSENGER CARS

2011	2012	2013	2014	2015	2016
27.8	30.7	31.4	32.1	33.3	34.7

4. Light Truck Standards

For light trucks, NHTSA proposed CAFE standards defined by the following coefficients during MYs 2012–2016:

TABLE IV.E.4–1—COEFFICIENTS DEFINING PROPOSED MY 2012–2016 FUEL ECONOMY TARGETS FOR LIGHT TRUCKS

Coefficient	2012	2013	2014	2015	2016
a (mpg)	29.44	30.32	31.30	32.70	34.38
b (mpg)	22.06	22.55	23.09	23.84	24.72
c (gpm/sf)	0.0004546	0.0004546	0.0004546	0.0004546	0.0004546
d (gpm)	0.01533	0.01434	0.01331	0.01194	0.01045

After updating inputs to its analysis, and revisiting the form and stringency of both passenger cars and light truck standards, as discussed in Section II, NHTSA is finalizing light truck CAFE standards defined by the following coefficients during MYs 2012–2016:

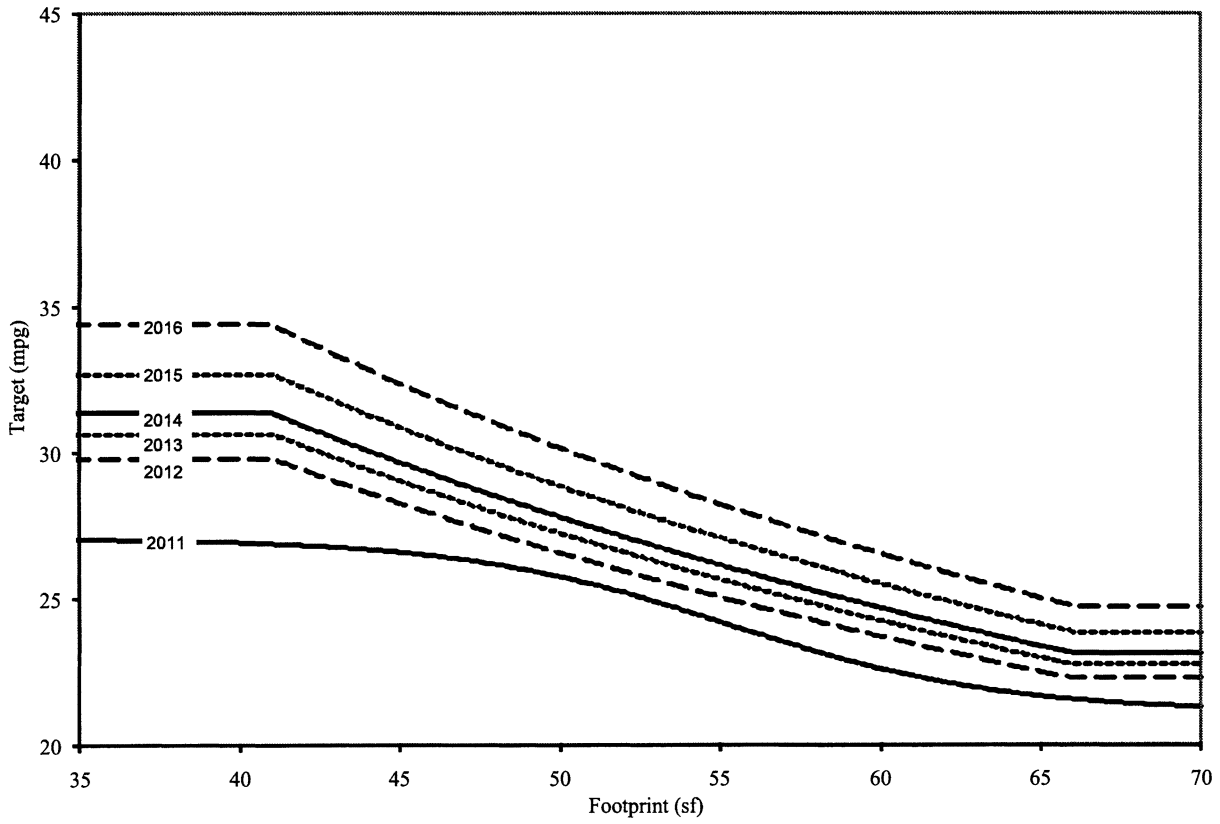
TABLE IV.E.4–2—COEFFICIENTS DEFINING FINAL MY 2012–2016 FUEL ECONOMY TARGETS FOR LIGHT TRUCKS

Coefficient	2012	2013	2014	2015	2016
a (mpg)	29.82	30.67	31.38	32.72	34.42
b (mpg)	22.27	22.74	23.13	23.85	24.74
c (gpm/sf)	0.0004546	0.0004546	0.0004546	0.0004546	0.0004546
d (gpm)	0.014900	0.013968	0.013225	0.011920	0.010413

As for passenger cars, these coefficients reflect the agency's decision, discussed above in Section II, to leave the shapes of both the passenger car and light truck curves unchanged. They also reflect the agency's reevaluation of the "gap" in stringency between the passenger car and light truck standard, also discussed in Section II.

These coefficients result in the footprint-dependent targets shown graphically below. The MY 2011 final standard, which is specified by a constrained logistic function rather than a constrained linear function, is shown for comparison.

Figure IV.E.4-1 Final MY 2011 and Final MY 2012-2016 Fuel Economy Targets for Light Trucks



Again, given these targets, the CAFE levels required of individual manufacturers will depend on the mix of vehicles they produce for sale in the United States. Based on the market forecast NHTSA has used to examine today's final CAFE standards, the agency estimates that the targets shown above will result in the following average required fuel economy levels for individual manufacturers during MYs 2012–2016 (an updated estimate of the average required fuel economy level under the final MY 2011 standard is shown for comparison): [700]

TABLE IV.E.4–3—ESTIMATED AVERAGE FUEL ECONOMY REQUIRED UNDER FINAL MY 2011 AND FINAL MY 2012–2016 CAFE STANDARDS FOR LIGHT TRUCKS

Manufacturer	MY 2011	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	25.6	26.6	27.3	27.9	28.9	30.2
Chrysler	24.5	25.7	26.2	26.8	27.8	29.0
Daimler	24.7	25.6	26.3	26.9	27.8	29.1
Ford	23.7	24.8	25.4	26.0	27.0	28.1
General Motors	23.3	24.2	24.8	25.2	26.1	27.2
Honda	25.7	26.9	27.5	28.0	29.1	30.4
Hyundai	25.9	27.0	27.6	28.2	29.3	30.7
Kia	25.2	26.2	26.7	27.3	28.3	29.5
Mazda	26.2	27.6	28.4	28.9	30.1	31.5
Mitsubishi	26.4	27.8	28.5	29.1	30.2	31.7
Nissan	24.5	25.6	26.2	26.8	27.8	29.1
Porsche	25.5	26.3	26.9	27.5	28.5	29.8
Subaru	26.5	27.9	28.6	29.2	30.4	31.9
Suzuki	26.3	27.5	28.2	28.8	29.9	31.4
Tata	26.2	27.4	28.2	28.8	29.9	31.3
Toyota	24.6	25.7	26.2	26.8	27.8	29.1

[700] In the March 2009 final rule establishing MY 2011 standards for passenger cars and light trucks, NHTSA estimated that the required fuel economy levels for light trucks would average 24.1 mpg under the MY 2011 light truck standard. Based on the agency's current forecast of the MY 2011 light truck market, NHTSA now estimates that the required fuel economy levels will average 24.4 mpg in MY 2011. The increase in the estimate reflects a decrease in the size of the average light truck.

TABLE IV.E.4–3—ESTIMATED AVERAGE FUEL ECONOMY REQUIRED UNDER FINAL MY 2011 AND FINAL MY 2012–2016 CAFE STANDARDS FOR LIGHT TRUCKS—Continued

Manufacturer	MY 2011	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
Volkswagen	25.0	25.8	26.4	27.0	28.0	29.2
Average	24.4	25.4	26.0	26.6	27.5	28.8

As discussed above with respect to the final passenger cars standards, we note that a manufacturer's required fuel economy level for a model year under the final standards will be based on its actual production numbers in that model year.

F. How do the final standards fulfill NHTSA's statutory obligations?

In developing the proposed MY 2012–16 standards, the agency developed and considered a wide variety of alternatives. In response to comments received in the last round of rulemaking, in our March 2009 notice of intent to prepare an environmental impact statement, the agency selected a range of candidate stringencies that increased annually, on average, 3% to 7%.[701] That same approach has been carried over to this final rule and to the accompanying FEIS and FRIA. Thus, the majority of the alternatives considered in this rulemaking are defined as average percentage increases in stringency—3 percent per year, 4 percent per year, 5 percent per year, and so on. NHTSA believes that this approach clearly communicates the level of stringency of each alternative and allows us to identify alternatives that represent different ways to balance NHTSA's statutory requirements under EPCA/EISA.

In the NPRM, we noted that each of the listed alternatives represents, in part, a different way in which NHTSA could conceivably balance different policies and considerations in setting the standards. We were mindful that the agency needs to weigh and balance many factors, such as technological feasibility, economic practicability, including lead time considerations for the introduction of technologies and impacts on the auto industry, the impacts of the standards on fuel savings and CO_2 emissions, and fuel savings by consumers, as well as other relevant factors such as safety. For example, the 7% Alternative weighs energy conservation and climate change considerations more heavily and technological feasibility and economic practicability less heavily. In contrast, the 3% Alternative, the least stringent alternative, places more weight on technological feasibility and economic practicability. We recognized that the "feasibility" of the alternatives also may reflect differences and uncertainties in the way in which key economic (*e.g.,* the price of fuel and the social cost of carbon) and technological inputs could be assessed and estimated or valued. We also recognized that some technologies (*e.g.,* PHEVs and EVs) will not be available for more than limited commercial use through MY 2016, and that even those technologies that could be more widely commercialized through MY 2016 cannot all be deployed on every vehicle model in MY 2012 but require a realistic schedule for more widespread commercialization to be within the realm of economically practicability.

In addition to the alternatives that increase evenly at annual rates ranging from 3% to 7%, NHTSA also included alternatives developed using benefit-cost criteria. The agency emphasized benefit-cost-related alternatives in its rulemakings for MY 2008–2011 and, subsequently, MY 2011 standards. By including such alternatives in its current analysis, the agency is providing a degree of analytical continuity between the two approaches to defining alternatives in an effort to illustrate the similarities and dissimilarities. To that end, we included and analyzed two additional alternatives, one that sets standards at the point where net benefits are maximized (labeled "MNB" in the table below), and another that sets standards at the point at which total costs are most nearly equal to total benefits (labeled "TCTB" in the table below).[702] With respect to the first of those alternatives, we note that Executive Order 12866 focuses attention on an approach that maximizes net benefits. Further, since NHTSA has thus far set attribute-based CAFE standards at the point at which net benefits are maximized, we believed it would be useful and informative to consider the potential impacts of that approach as compared to the new approach for MYs 2012–2016.

After working with EPA in thoroughly reviewing and in some cases reassessing the effectiveness and costs of technologies (most of which are already being incorporated in at least some vehicles), market forecasts and economic assumptions, NHTSA used the Volpe model extensively to assess the technologies that the manufacturers could apply in order to comply with each of the alternatives. This allowed us to assess the variety, amount and cost of the technologies that could be used to enable the manufacturers to comply with each of the alternatives. NHTSA estimated how the application of these and other technologies could increase vehicle costs, reduce fuel consumption, and reduce CO_2 emissions.

The agency then assessed which alternative would represent a reasonable balancing of the statutory criteria, given the difficulties confronting the industry and the economy, and other relevant goals and priorities. Those priorities and goals include maximizing energy conservation and achieving a nationally harmonized and coordinated program for regulating fuel economy and GHG emissions.

Part of that assessment of alternatives entailed an evaluation of the stringencies necessary to achieve both Federal and State GHG emission reduction goals, especially those of California and the States that have adopted its GHG emission standard for motor vehicles. Given that EPCA requires attribute-based standards, NHTSA and EPA determined the level at which a national attribute-based GHG emissions standard would need to be set to achieve the same emission reductions in California as the California GHG program. This was done by evaluating a nationwide Clean Air Act standard for MY 2016 that would apply across the country and require the levels of emissions reduction which California standards would require for the subset

[701] Notice of intent to prepare an EIS, 74 FR 14857, 14859–60, April 1, 2009.

[702] The stringency indicated by each of these alternatives depends on the value of inputs to NHTSA's analysis. Results presented here for these two alternatives are based on NHTSA's reference case inputs, which underlie the central analysis of the proposed standards. In the accompanying FRIA, the agency presents the results of that analysis to explore the sensitivity of results to changes in key economic inputs. Because of numerous changes in model inputs (*e.g.,* discount rate, rebound effect, CO_2 value, technology cost estimates), our analysis often exhausts all available technologies before reaching the point at which total costs equal total benefits. In these cases, the stringency that exhausts all available technologies is considered.

of vehicles sold in California under the California standards for MY 2009–2016 (known as "Pavley 1"). In essence, the stringency of the California Pavley 1 program was evaluated, but for a national standard. For a number of reasons discussed in Section III.D, an assessment was developed of national new vehicle fleet-wide CO_2 performance standards for model year 2016 which would result in the new light-duty vehicle fleet in the State of California having CO_2 performance equal to the performance from the California Pavley 1 standards. That level, 250 g/mi, is equivalent to 35.5 mpg if the GHG standard were met exclusively by fuel economy improvements—and the overall result is the model year 2016 goals of the National Program.

However, the level of stringency for the National Program goal of 250 g/mi CO_2 can be met with both fuel economy "tailpipe" improvements as well as other GHG-reduction related improvements, such as A/C refrigerant leakage reductions. CAFE standards, as discussed elsewhere in this final rule, cannot be met by improvements that cannot be accounted for on the FTP/HFET tests. Thus, setting CAFE standards at 35.5 mpg would require more tailpipe technology (at more expense to manufacturers) than would be required under such a CAA standard. To obtain an equivalent CAFE standard, we determined how much tailpipe technology would be necessary in order to meet an mpg level of 35.5 if manufacturers also employed what EPA deemed to be an average amount of A/C "credits" (leakage and efficiency) to reach the 250 g/mi equivalent. This results in a figure of 34.1 mpg as the appropriate counterpart CAFE standard. This differential gives manufacturers the opportunity to reach 35.5 mpg equivalent under the CAA in ways that would significantly reduce their costs. Were NHTSA instead to establish its standard at the same level, manufacturers would need to make substantially greater expenditures on fuel-saving technologies to reach 35.5 mpg under EPCA.

Thus, as part of the process of considering all of the factors relevant under EPCA for setting standards, in a context where achieving a harmonized National Program is important, for the proposal we created a new alternative whose annual percentage increases would achieve 34.1 mpg by MY 2016. That alternative is one which increases on average at 4.3% annually. This new alternative, like the seven alternatives presented above, represents a unique balancing of the statutory factors and other relevant considerations. For the reader's reference, the estimated required levels of stringency for each alternative in each model year are presented below:

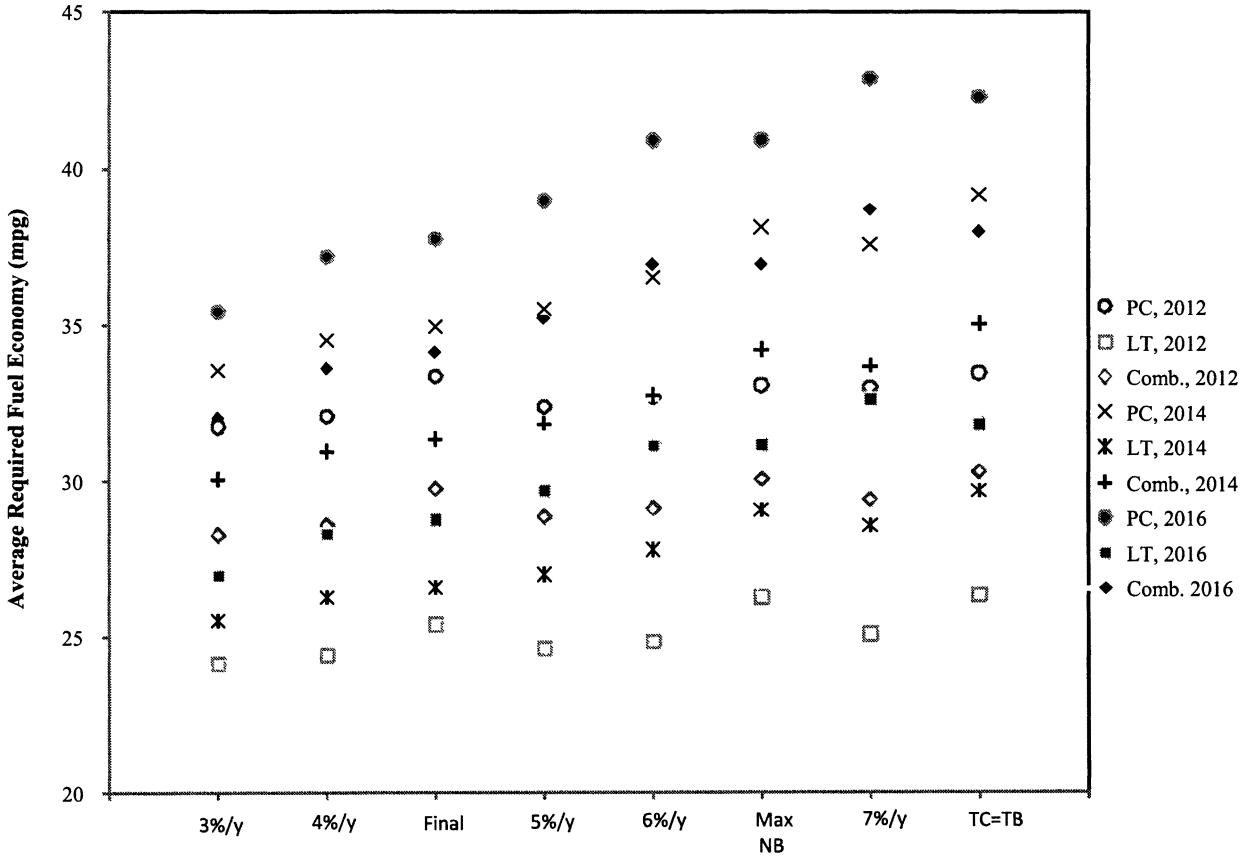
TABLE IV.F–1—ESTIMATED REQUIRED FUEL ECONOMY LEVEL FOR REGULATORY ALTERNATIVES [703]

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
	No action	3%/year increase	4%/year increase	~4.3%/year increase	5%/year increase	~6.0%/year increase MNB	6%/year increase	7%/year increase	~6.6%/year increase TCTB
2012:									
Passenger Cars	30.5	31.7	32.1	33.3	32.4	33.0	32.7	33.0	33.4
Light Trucks	24.4	24.1	24.4	25.4	24.6	26.3	24.9	25.1	26.3
Combined	27.8	28.3	28.6	29.7	28.8	30.0	29.1	29.4	30.3
2013:									
Passenger Cars	30.5	32.6	33.3	34.2	33.9	36.1	34.5	35.2	36.7
Light Trucks	24.4	24.8	25.3	26.0	25.8	27.7	26.3	26.8	28.0
Combined	27.8	29.1	29.7	30.5	30.3	32.3	30.8	31.4	32.8
2014:									
Passenger Cars	30.5	33.5	34.5	34.9	35.5	38.1	36.5	37.6	39.2
Light Trucks	24.5	25.5	26.3	26.6	27.0	29.1	27.8	28.6	29.7
Combined	28.0	30.0	30.9	31.3	31.8	34.2	32.7	33.7	35.0
2015:									
Passenger Cars	30.5	34.4	35.8	36.2	37.1	39.4	38.6	40.1	40.7
Light Trucks	24.4	26.2	27.2	27.5	28.3	30.3	29.4	30.5	30.7
Combined	28.0	31.0	32.2	32.6	33.4	35.6	34.7	36.0	36.5
2016:									
Passenger Cars	30.5	35.4	37.2	37.8	39.0	40.9	40.9	42.9	42.3
Light Trucks	24.4	27.0	28.3	28.8	29.7	31.1	31.1	32.6	31.8
Combined	28.1	32.0	33.6	34.1	35.2	36.9	36.9	38.7	38.0

The following figure presents this same information but in a different way, comparing estimated average fuel economy levels required of manufacturers under the eight regulatory alternatives in MYs 2012, 2014, and 2016. Required levels for MY 2013 and MY 2015 fall between those for MYs 2012 and 2014 and MYs 2014 and 2016, respectively. Although required levels for these interim years are not presented in the following figure to limit the complexity of the figure, they do appear in the accompanying FRIA.

[703] Also, the "MNB" and the "TCTB" alternatives depend on the inputs to the agencies' analysis. The sensitivity analysis presented in the FRIA documents the response of these alternatives to changes in key economic inputs. For example, the combined average required fuel economy under the "MNB" alternative is 36.9 mpg under the reference case economic inputs presented here, and ranges from 33.7 mpg to 37.2 mpg under the alternative economic inputs presented in the FRIA. *See* Table X–14 in the FRIA.

Figure IV.F-1 Average Estimated Required Fuel Economy (MYs 2012, 2014, and 2016)



As this figure illustrates, the final standards involve a "faster start" toward increased stringency than do any of the alternatives that increase steadily (*i.e.,* the 3%/y, 4%/y, 5%/y, 6%/y, and 7%/y alternatives). However, by MY 2016, the stringency of the final standards reflects an average annual increase of 4.3%/y. The final standards, therefore, represent an alternative that could be referred to as "4.3% per year with a fast start" or a "front-loaded 4.3% average annual increase."

For each alternative, including today's final standards, NHTSA has estimated all corresponding effects for each model year, including fuel savings, CO_2 reductions, and other effects, as well as the estimated societal benefits of these effects. The accompanying FRIA presents a detailed analysis of these results. Table IV.F–2 presents fuel savings, CO_2 reductions, and total industry cost outlays for model year 2012—2016 for the eight alternatives.

TABLE IV.F–2—FUEL SAVINGS, CO_2 REDUCTIONS, AND TECHNOLOGY COSTS FOR REGULATORY ALTERNATIVES

Regulatory alternative	Fuel savings (b. gal)	CO_2 reductions (mmt)	Cost ($b)
3% per Year	34	373	23
4% per Year	50	539	39
Final (4.3% per Year)	61	655	52
5% per Year	68	709	63
6% per Year	82	840	90
Maximum Net Benefit	90	925	103
7% per Year	93	945	111
Total Cost = Total Benefit	96	986	114

As noted earlier, NHTSA has used the Volpe model to analyze each of these alternatives based on analytical inputs determined jointly with EPA. For a given regulatory alternative, the Volpe model estimates how each manufacturer could apply technology in response to the MY 2012 standard (separately for cars and trucks), carries technologies

applied in MY 2012 forward to MY 2013, and then estimates how each manufacturer could apply technology in response to the MY 2013 standard. When analyzing MY 2013, the model considers the potential to add "extra" technology in MY 2012 in order to carry that technology into MY 2013, thereby avoiding the use of more expensive technologies in MY 2013. The model continues in this fashion through MY 2016, and then performs calculations to estimate the costs, effects, and benefits of the applied technologies, and to estimate any civil penalties owed based on projected noncompliance. For each regulatory alternative, the model calculates incremental costs, effects, and benefits relative to the regulatory baseline (*i.e.,* the no-action alternative), under which the MY 2011 CAFE standards continue through MY 2016. The model calculates results for each model year, because EPCA requires that NHTSA set its standards for each model year at the "maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that model year" considering four statutory factors. Pursuant to EPCA's requirement that NHTSA not consider statutory credits in establishing CAFE standards, NHTSA did not consider FFV credits, credits carried forward and backward, and transferred credits in this calculation [704, 705] In addition, the analysis incorporates fines for some manufacturers that have traditionally paid fines rather than comply with the standards. Because it entails year-by-year examination of eight regulatory alternatives for, separately, passenger cars and light trucks, NHTSA's analysis involves a large amount of information. Detailed results of this analysis are presented separately in NHTSA's FRIA.

In reviewing the results of the various alternatives, NHTSA confirmed that progressive increases in stringency require progressively greater deployment of fuel-saving technology and corresponding increases in technology outlays and related costs, fuel savings, and CO_2 emission reductions. To begin, NHTSA estimated total incremental outlays for additional technology in each model year. The following figure shows cumulative results for MYs 2012–2016 for industry as a whole and Chrysler, Ford, General Motors, Honda, Nissan, and Toyota. This figure focuses on these manufacturers as they currently (in MY 2010) represent three large U.S.-headquartered and three large foreign-headquartered full-line manufacturers.

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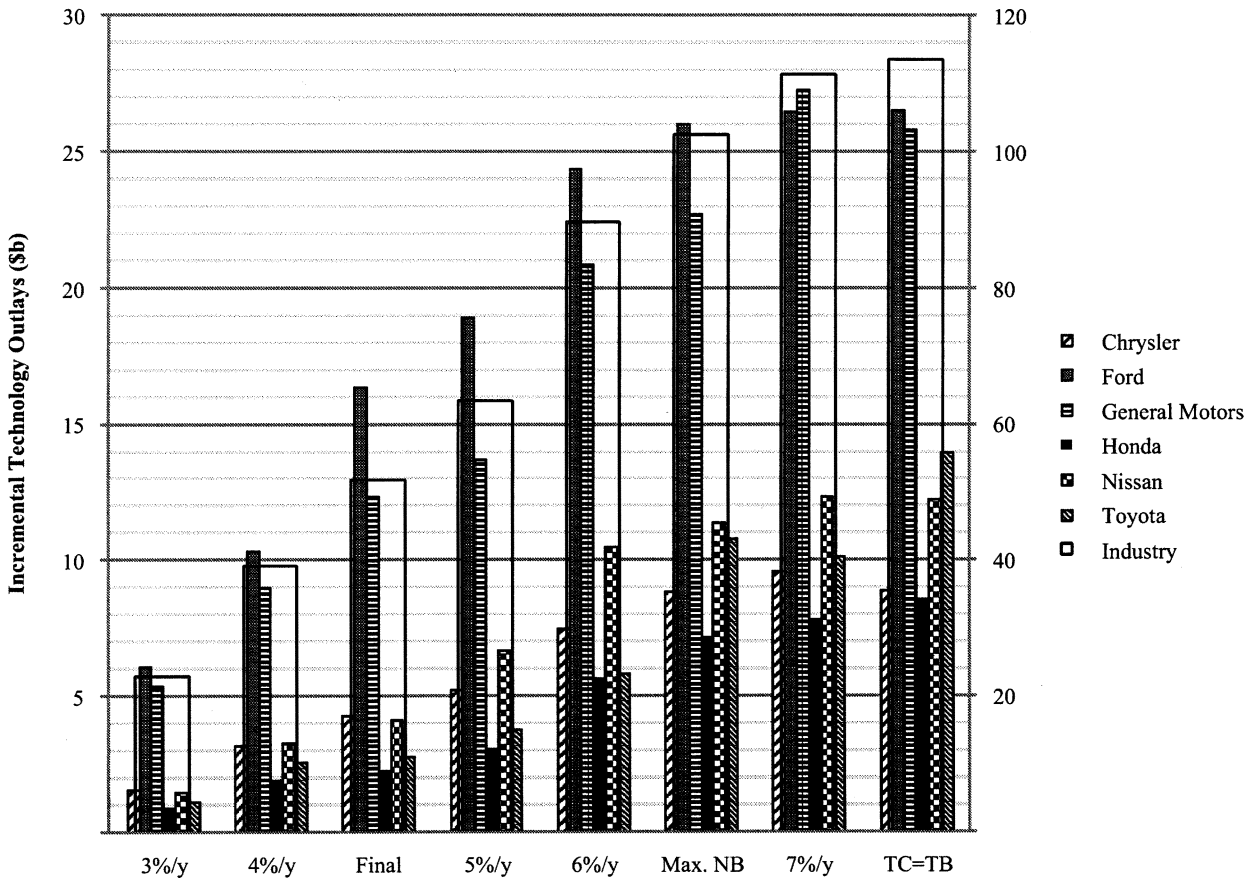
Figure IV.F-2 Incremental Technology Outlays (MYs 2012-2016)



[704] NHTSA has conducted a separate analysis, discussed above in Section I, which accounts for EPCA's provisions regarding FFVs.

[705] For a number of reasons, the results of this modeling differ from EPA's for specific manufacturers, fleets, and model years. These reasons include representing every model year explicitly, accounting for estimates of when vehicle model redesigns will occur, and not considering those compliance flexibilities where EPCA forbids such consideration in setting CAFE standards. It should be noted, however, that these flexibilities in fact provide manufacturers significant latitude to manage their compliance obligations.

As part of the incremental technology outlays, NHTSA also analyzes which technologies manufacturers could apply to meet the standards. In NHTSA's analysis, manufacturers achieve compliance with the fuel economy levels through application of technology rather than through changes in the mix of vehicles produced for sale in the U.S. The accompanying FRIA presents detailed estimates of additional technology penetration into the NHTSA reference fleet associated with each regulatory alternative. The following four charts illustrate the results of this analysis, considering the application of four technologies by six manufacturers and by the industry as a whole. Technologies include gasoline direct injection (GDI), engine turbocharging and downsizing, diesel engines, and strong HEV systems (including CISG systems). GDI and turbocharging are presented because they are among the technologies that play an important role in achieving the fuel economy improvements shown in NHTSA's analysis, and diesels and strong HEVs are presented because they represent technologies involving significant cost and related lead time challenges for widespread use through MY 2016. These figures focus on Chrysler, Ford, General Motors, Honda, Nissan, and Toyota, as above. For each alternative, the figures show additional application of technology by MY 2016.[706]

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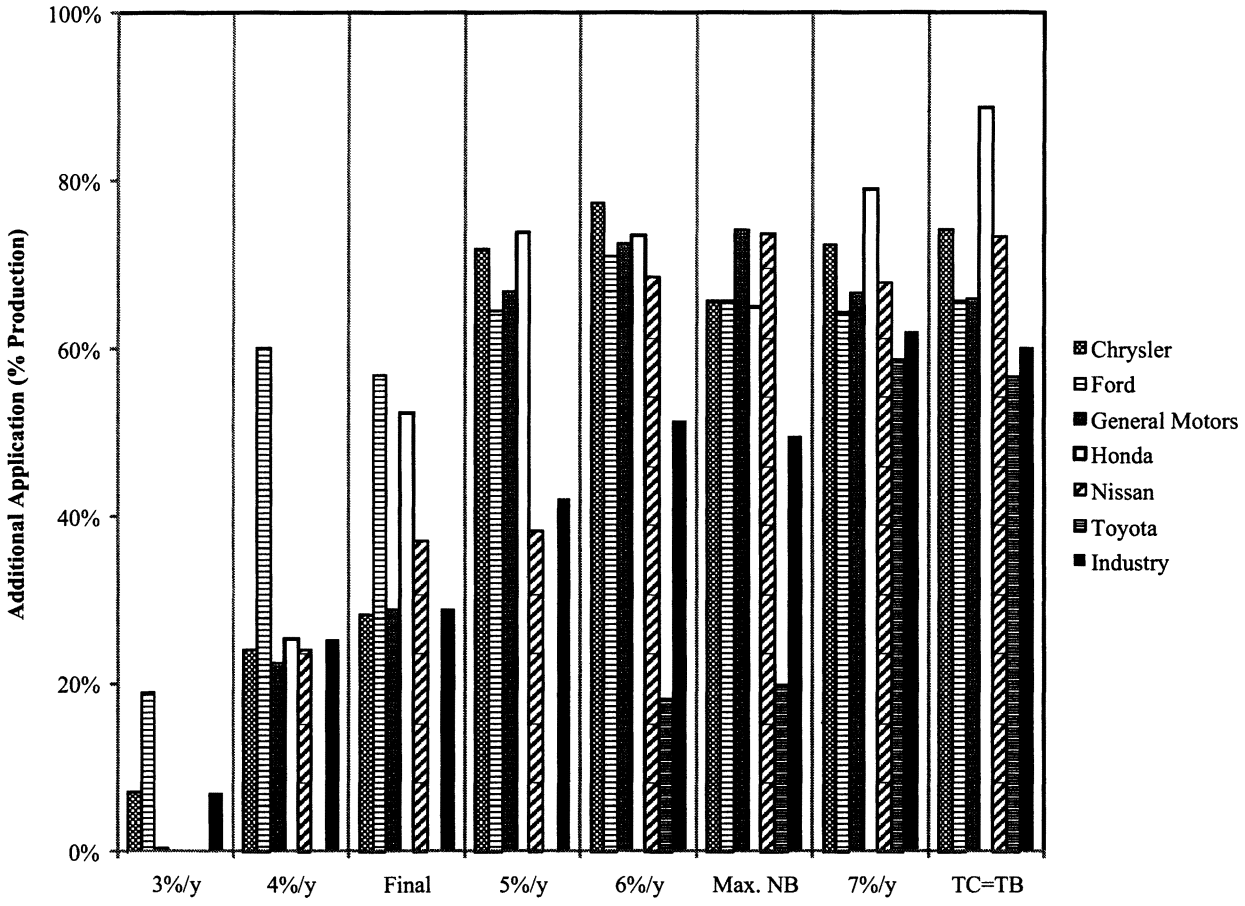
Figure IV.F-3 Additional Application of GDI (MY 2016)



[706] The FRIA presents results for all model years, technologies, and manufacturers, and NHTSA has considered these broader results when considering the eight regulatory alternatives.

Figure IV.F-4 Additional Application of Engine Turbocharging & Downsizing

(MY 2016)

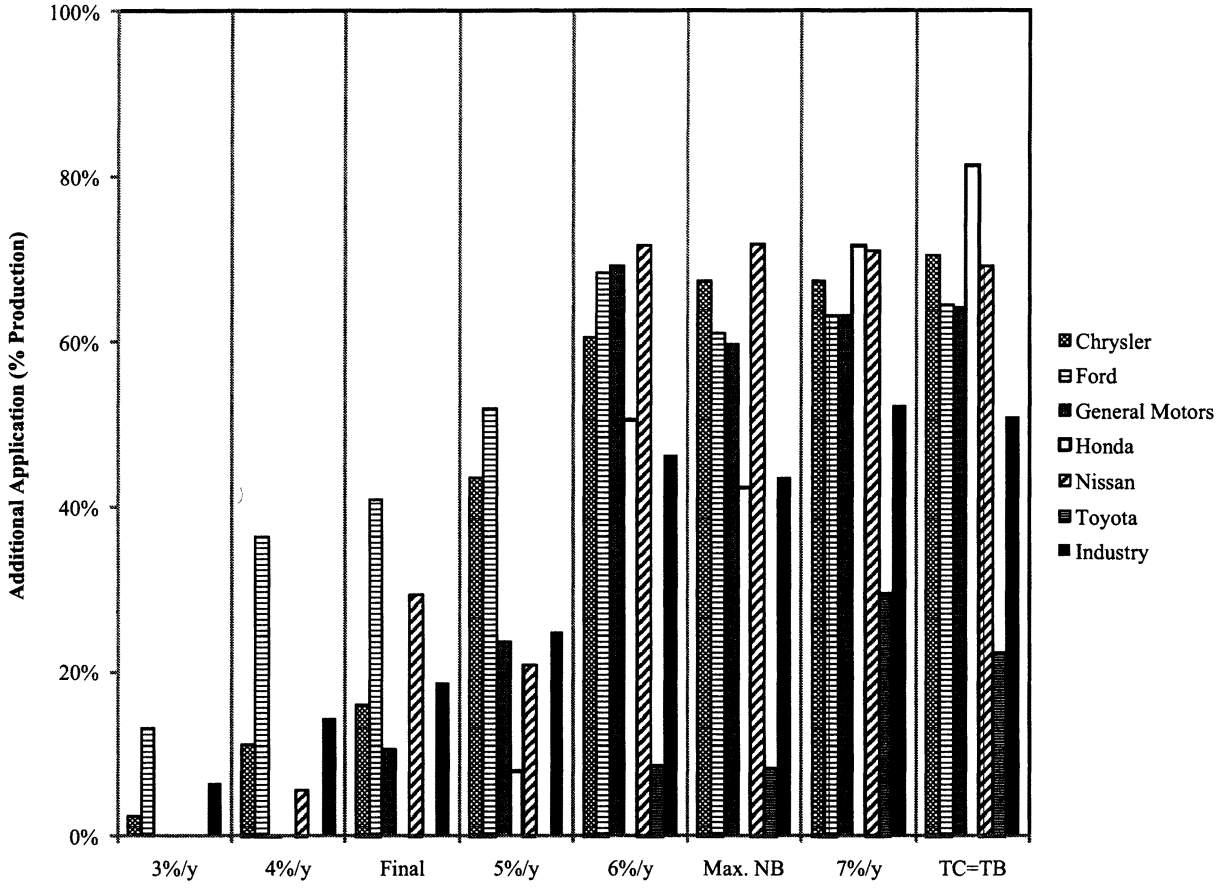


Figure IV.F-5 Additional Application of Diesel Engines (MY 2016)

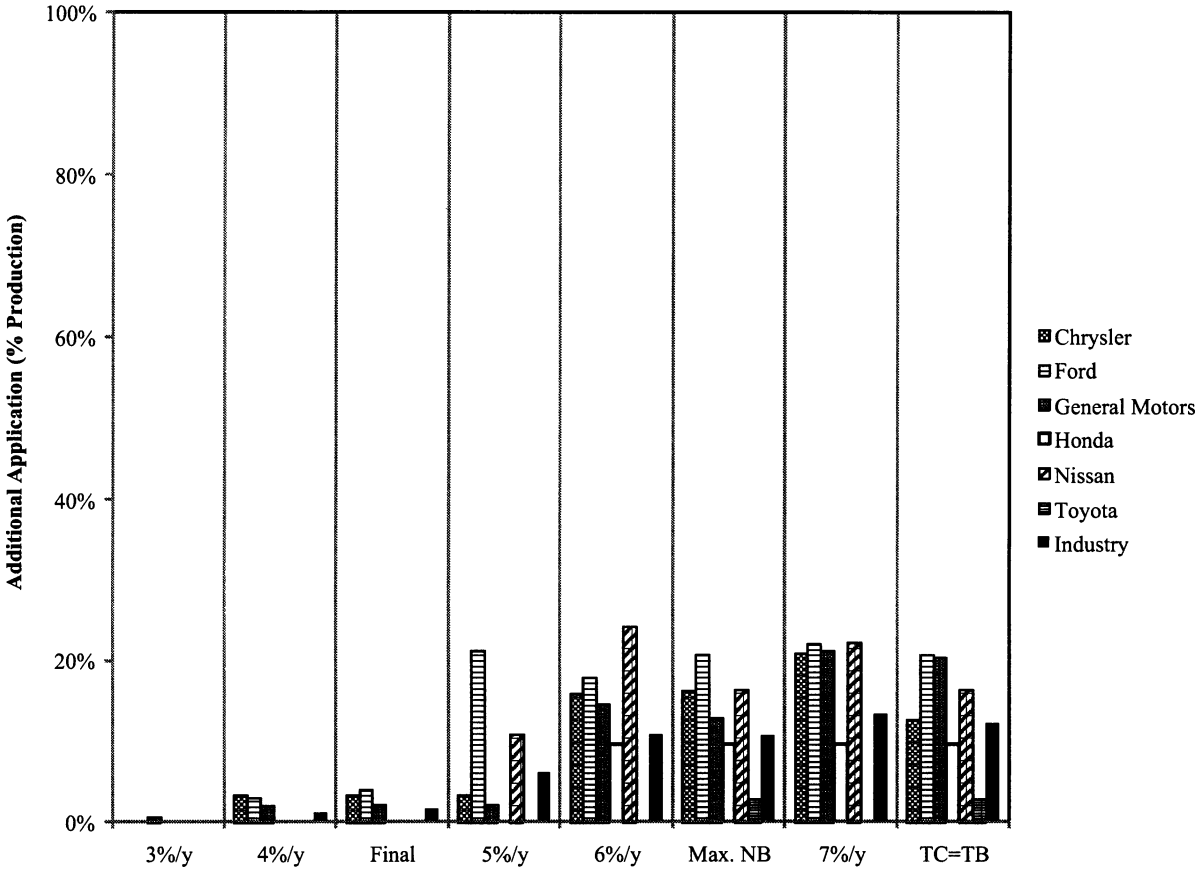
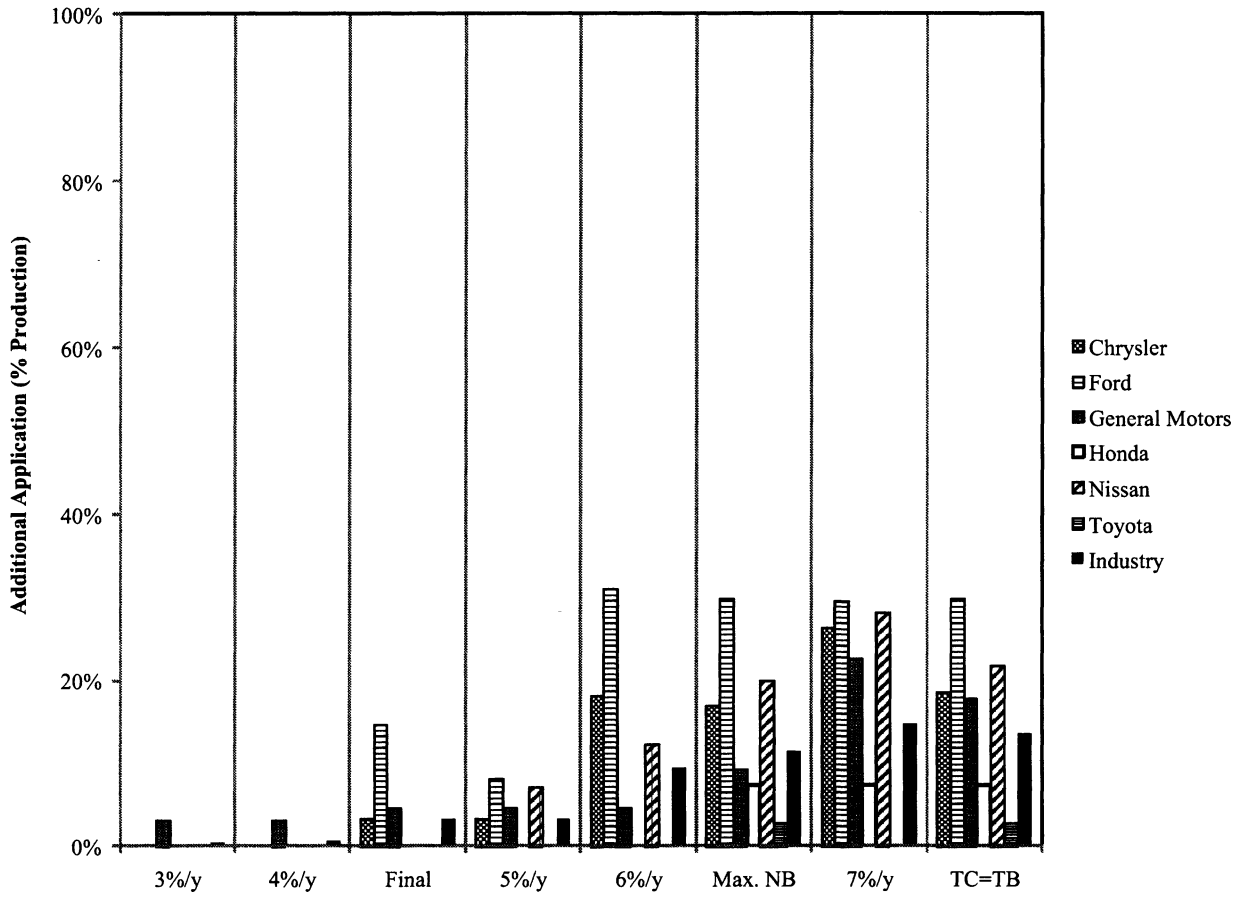
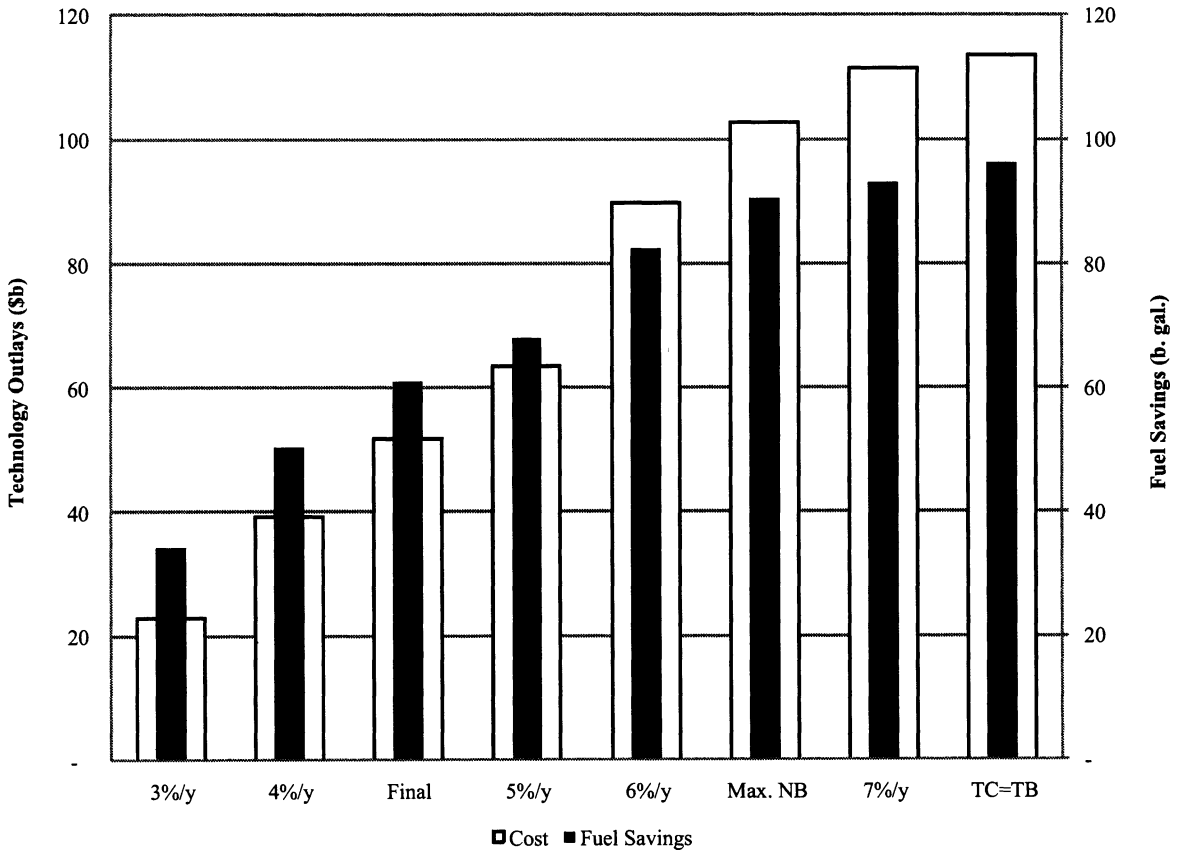


Figure IV.F-6 Additional Application of CISG and Strong HEV Systems (MY 2016)



The modeling analysis demonstrates that applying these technologies, of course, results in fuel savings. Relevant to EPCA's requirement that NHTSA consider, among other factors, economic practicability and the need of the nation to conserve energy, the following figure compares the incremental technology outlays and related cost presented above for the industry to the corresponding cumulative fuel savings.

Figure IV.F-7 Incremental Technology Outlays and Fuel Savings (MYs 2012-2016)



These incremental technology outlays (and corresponding fuel savings) also result in corresponding increases in incremental cost per vehicle, as shown below. The following five figures show industry-wide average incremental (*i.e.,* relative to the reference fleet) per-vehicle costs, for each model year, each fleet, and the combined fleet. Estimates specific to each manufacturer are shown in NHTSA's FRIA.

Figure IV.F-8 Average Incremental Per-Vehicle Costs (MY 2012)

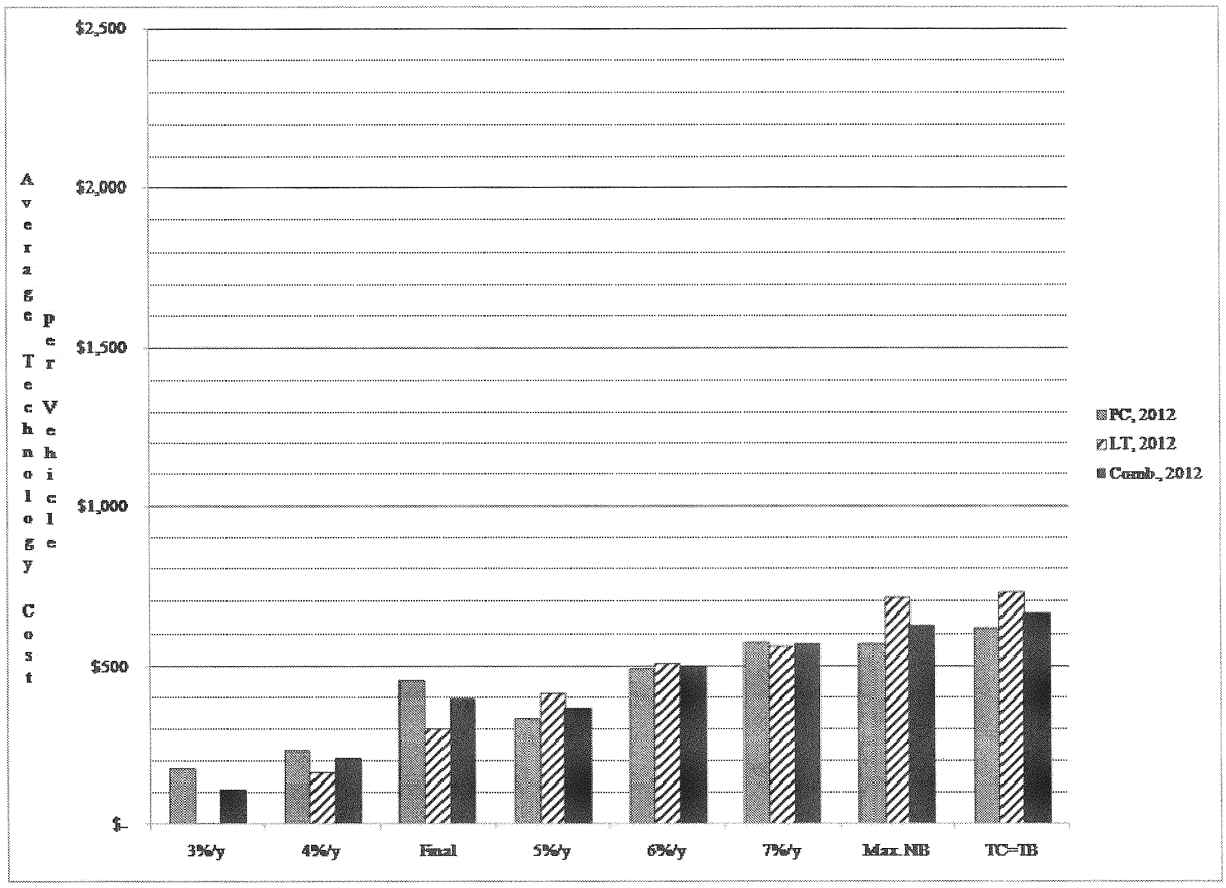


Figure IV.F-9 Average Incremental Per-Vehicle Costs (MY 2013)

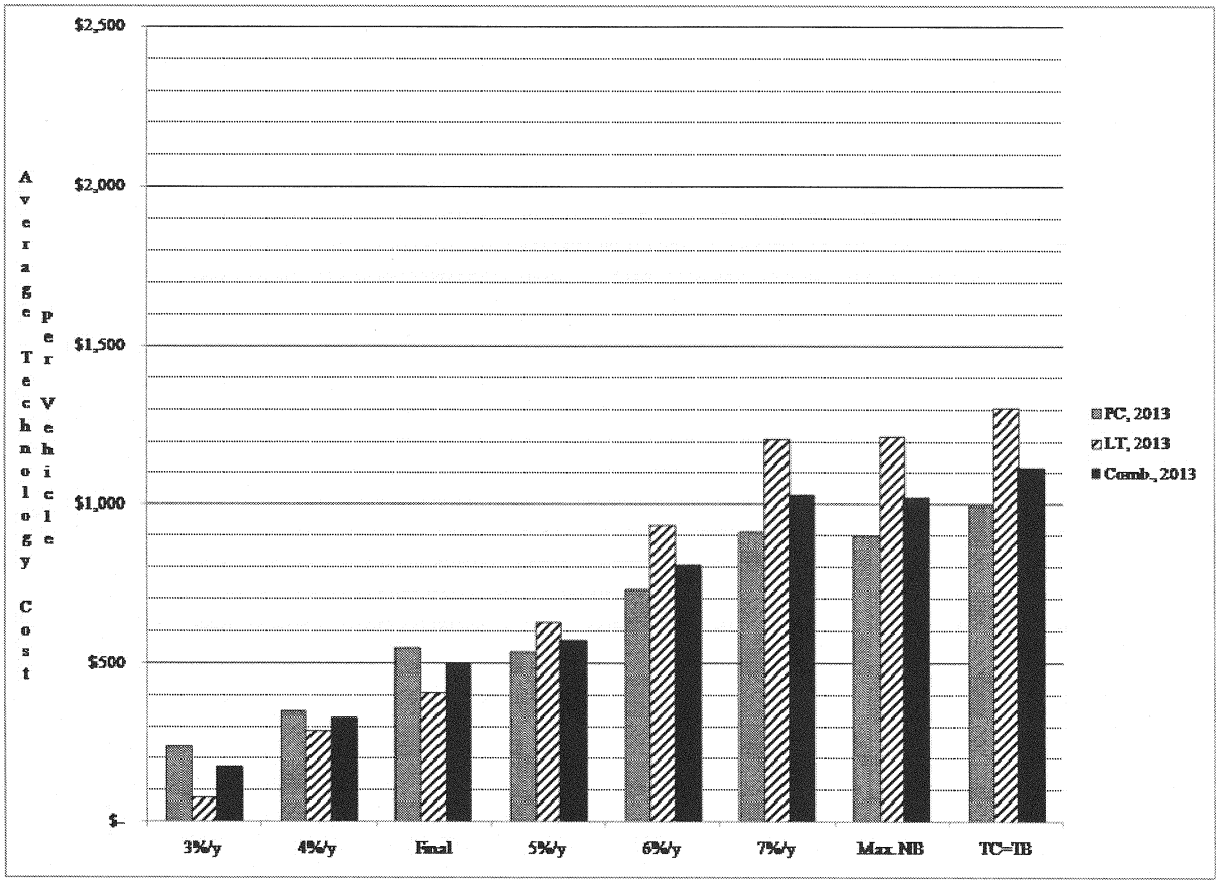


Figure IV.F-10 Average Incremental Per-Vehicle Costs (MY 2014)

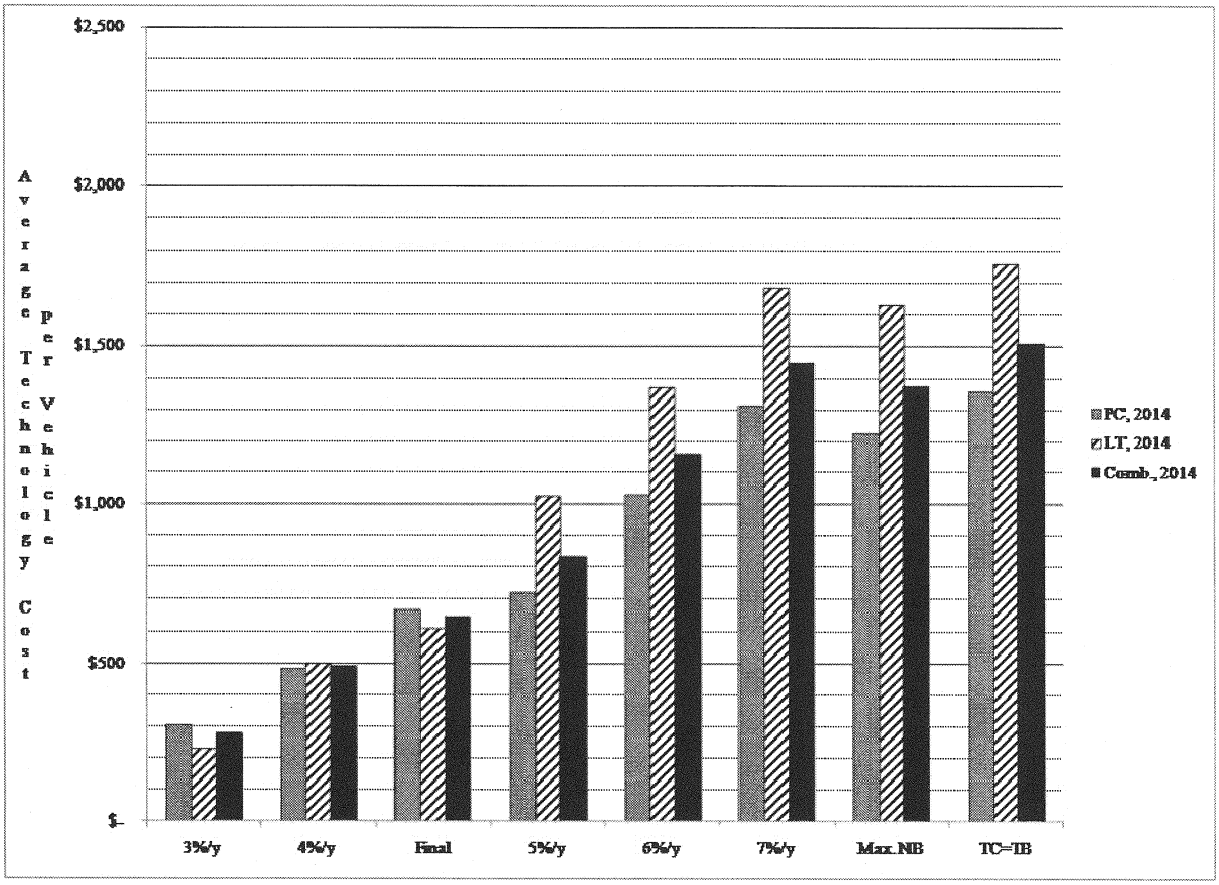


Figure IV.F-11 Average Incremental Per-Vehicle Costs (MY 2015)

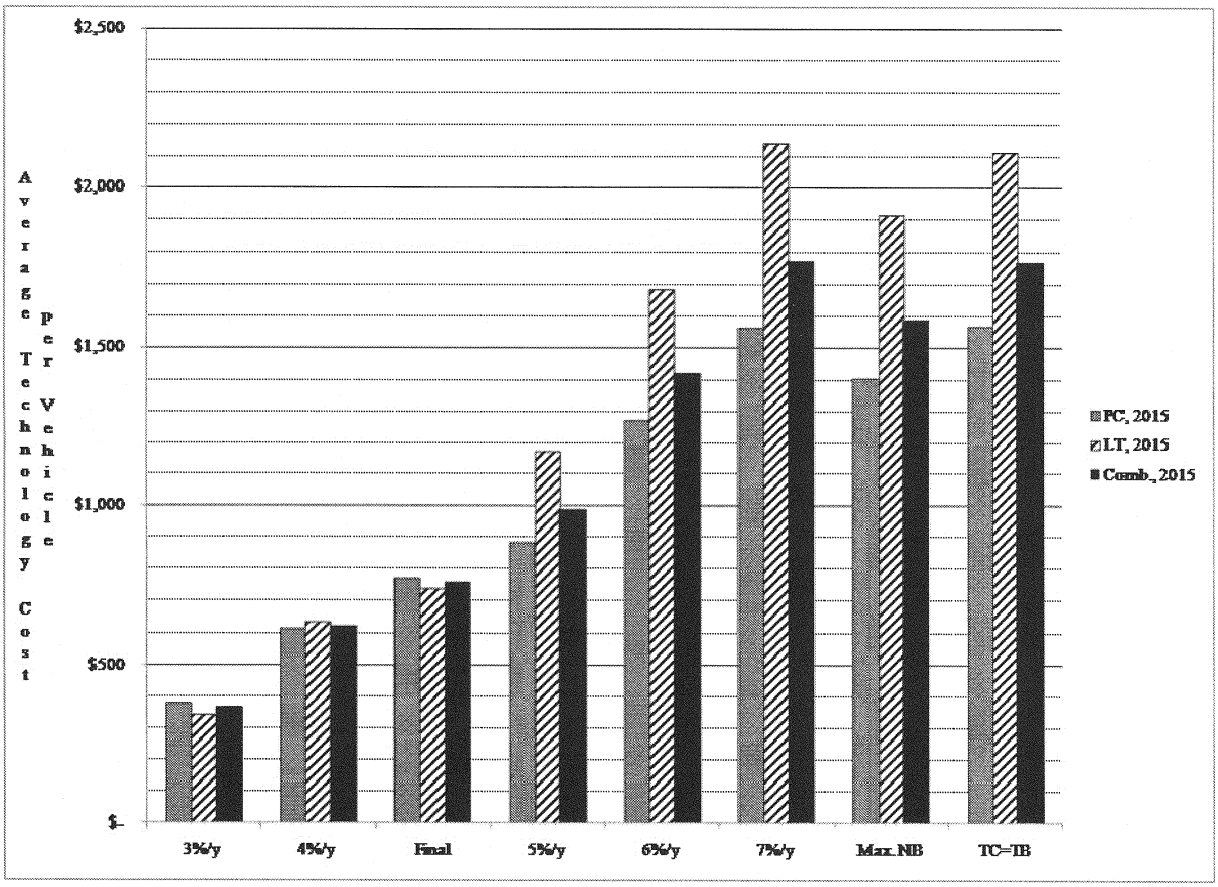
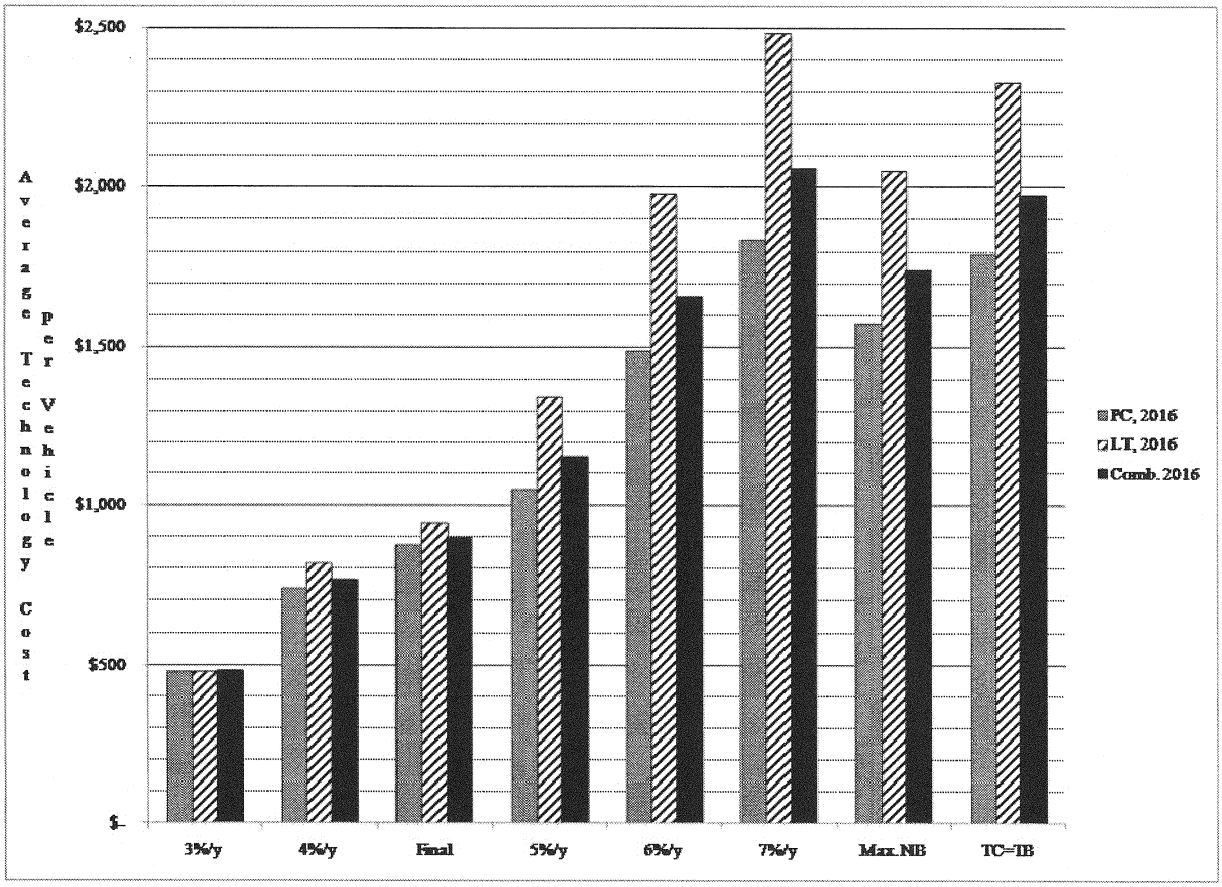


Figure IV.F-12 Average Incremental Per-Vehicle Costs (MY 2016)



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As discussed in the NPRM, the agency began the process of winnowing the alternatives by determining whether any of the lower stringency alternatives should be eliminated from consideration. To begin with, the agency needs to ensure that its standards are high enough to enable the combined fleet of passenger cars and light trucks to achieve at least 35 mpg not later than MY 2020, as required by EISA. Achieving that level makes it necessary for the chosen alternative to increase at over 3 percent annually. Additionally, given that CO_2 and fuel savings are very closely correlated, the 3%/y and 4%/y alternative would not produce the reductions in fuel savings and CO_2 emissions that the Nation needs at this time. Picking either of those alternatives would unnecessarily result in foregoing substantial benefits, in terms of fuel savings and reduced CO_2 emissions, which would be achievable at reasonable cost. And finally, neither the 3%/y nor the 4%/y alternatives would lead to the regulatory harmonization that forms a vital core principle of the National Program that EPA and NHTSA are jointly striving to implement. These alternatives would give inadequate weight to other standards of the Government, specifically EPA's and CARB's. Thus, the agency concluded that alternatives less stringent than the proposed standards would not yield the emissions reductions required to produce a harmonized national program and would not produce corresponding fuel savings, and therefore would not place adequate emphasis on the nation's need to conserve energy. NHTSA has therefore concluded that it must reject the 3%/y and 4%/y alternatives.

NHTSA then considered the "environmentally-preferable" alternative. Based on the information provided in the FEIS, the environmentally-preferable alternative would be that involving stringencies that increase at 7% annually.[707] NHTSA notes that NEPA does not require that agencies choose the environmentally-preferable alternative if doing so would be contrary to the choice that the agency would otherwise make under its governing statute. Given the levels of technology and cost required by the environmentally-preferable alternative and the lack of lead time to achieve such levels between now and MY 2016, as discussed further below, NHTSA concludes that the environmentally-preferable alternative would not be economically practicable or technologically feasible, and thus concludes that it would result in standards that would be beyond the level achievable for MYs 2012–2016.

For the other alternatives, NHTSA determined that it would be inappropriate to choose any of the other more stringent alternatives due to concerns over lead time and economic practicability. There are real-world technological and economic time constraints which must be considered due to the short lead time available for the early years of this program, in particular for MYs 2012 and 2013. The alternatives more stringent than the final standards begin to accrue costs considerably more rapidly than they accrue fuel savings and emissions reductions, and at levels that are increasingly economically burdensome, especially considering the need to make underlying investments (*e.g.,* for

[707] *See, e.g.,* FEIS, figure S–12, p. 18, which shows that 7%/y alternative yields greatest cumulative effect on global mean temperature.

engineering and tooling) well in advance of actual production. As shown in Figures IV–2 to IV–6 above, while the final standards already require aggressive application of technologies, more stringent standards would require more widespread use (including more substantial implementation of advanced technologies such as stoichiometric gasoline direct injection engines, diesel engines, and strong hybrids), and would raise serious issues of adequacy of lead time, not only to meet the standards but to coordinate such significant changes with manufacturers' redesign cycles. The agency maintains, as it has historically, that there is an important distinction between considerations of technological feasibility and economic practicability, both of which enter into the agency's determination of the maximum feasible levels of stringency. A given level of performance may be technologically feasible (*i.e.,* setting aside economic constraints) for a given vehicle model. However, it would not be economically practicable to require a level of fleet average performance that assumes every vehicle will immediately (*i.e.,* within 18 months of the rule's promulgation) perform at its highest technologically feasible level, because manufacturers do not have unlimited access to the financial resources or the time required to hire enough engineers, build enough facilities, and install enough tooling. The lead time reasonably needed to make capital investments and to devote the resources and time to design and prepare for commercial production of a more fuel efficient vehicle is an important element that NHTSA takes into consideration in establishing the standards.

In addition, the figures presented above reveal that increasing stringency beyond the final standards would entail significant additional application of technology. Among the more stringent alternatives, the one closest in stringency to the standards being finalized today is the alternative under which combined CAFE stringency increases at 5% annually. As indicated above, this alternative would yield fuel savings and CO_2 reductions about 11% and 8% higher, respectively, than the final standards. However, compared to the final standards, this alternative would increase outlays for new technologies during MY 2012–2016 by about 22%, or $12b. Average MY 2016 cost increases would, in turn, rise from $903 under the final standards to $1,152 when stringency increases at 5% annually. This represents a 28% increase in per-vehicle cost for only a 3% increase in average performance (on a gallon-per-mile basis to which fuel savings are proportional). Additionally, the 5%/y alternative disproportionally burdens the light truck fleet requiring a nearly $400 (42 percent) cost increase in MY 2016 compared to the final standards. The following three tables summarize estimated manufacturer-level average incremental costs for the 5%/y alternative and the average of the passenger and light truck fleets:

TABLE IV.F–3—AVERAGE INCREMENTAL COSTS ($/VEHICLE) UNDER THE 5%/Y ALTERNATIVE CAFE STANDARDS FOR PASSENGER CARS

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	3	4	24	184	585
Chrysler	734	1,303	1,462	1,653	1,727
Daimler	.....	.....	410	801	1,109
Ford	743	1,245	1,261	1,583	1,923
General Motors	448	823	1,187	1,425	1,594
Honda	50	109	271	375	606
Hyundai	747	877	1,057	1,052	1,124
Kia	49	128	197	261	369
Mazda	555	718	1,166	1,407	1,427
Mitsubishi	534	507	2,534	3,213	3,141
Nissan	294	491	965	1,064	1,125
Porsche	68	(52)	(51)	(50)	(49)
Subaru	292	324	1,372	1,723	1,679
Suzuki	.....	959	1,267	1,316	1,540
Tata	111	93	183	306	710
Toyota	31	29	52	129	212
Volkswagen	145	428	477	492	783
Average	337	540	726	886	1,053

TABLE IV.F–4—AVERAGE INCREMENTAL COSTS ($/VEHICLE) UNDER THE 5%/Y ALTERNATIVE CAFE STANDARDS FOR LIGHT TRUCKS

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	169	160	201	453	868
Chrysler	360	559	1,120	1,216	1,432
Daimler	60	55	51	52	51
Ford	1,207	1,663	1,882	2,258	2,225
General Motors	292	628	866	968	1,136
Honda	258	234	611	750	1,047
Hyundai	711	685	1,923	1,909	1,862
Kia	47	293	556	782	1,157
Mazda	248	408	419	519	768
Mitsubishi	.....	.....	1,037	1,189	1,556
Nissan	613	723	2,142	2,148	2,315
Porsche	.....	(0)	(1)	469	469
Subaru	1,225	1,220	1,365	1,374	1,330
Suzuki	.....	1,998	1,895	1,837	2,096

TABLE IV.F–4—AVERAGE INCREMENTAL COSTS ($/VEHICLE) UNDER THE 5%/Y ALTERNATIVE CAFE STANDARDS FOR LIGHT TRUCKS—Continued

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
Tata	.....	.....	.....	.....	503
Toyota	63	187	594	734	991
Volkswagen	.....	.....	514	458	441
Average	415	628	1,026	1,173	1,343

TABLE IV.F–5—AVERAGE INCREMENTAL COSTS ($/VEHICLE) UNDER THE 5%/Y ALTERNATIVE CAFE STANDARDS FOR PASSENGER CARS AND LIGHT TRUCKS COMBINED

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	72	64	84	265	666
Chrysler	499	870	1,272	1,414	1,569
Daimler	20	20	281	554	773
Ford	914	1,407	1,498	1,838	2,034
General Motors	371	726	1,033	1,205	1,379
Honda	135	157	396	518	769
Hyundai	742	838	1,237	1,186	1,235
Kia	49	168	273	355	506
Mazda	500	667	1,053	1,272	1,330
Mitsubishi	371	352	1,973	2,386	2,506
Nissan	399	565	1,344	1,387	1,467
Porsche	52	(39)	(35)	130	124
Subaru	617	628	1,369	1,597	1,553
Suzuki	.....	1,134	1,381	1,404	1,630
Tata	61	56	101	182	629
Toyota	43	82	239	333	466
Volkswagen	117	333	486	486	723
Average	367	573	836	987	1,152

These cost increases derive from increased application of advanced technologies as stringency increases past the levels in the final standards. For example, under the final standards, additional diesel application rates average 1.6% for the industry and range from 0% to 3% among Chrysler, Ford, GM, Honda, Nissan, and Toyota. Under standards increasing in combined stringency at 5% annually, these rates more than triple, averaging 6.2% for the industry and ranging from 0% to 21% for the same six manufacturers.

These technology and cost increases are significant, given the amount of lead-time between now and model years 2012–2016. In order to achieve the levels of technology penetration for the final standards, the industry needs to invest significant capital and product development resources right away, in particular for the 2012 and 2013 model year, which is only 2–3 years from now. For the 2014–2016 time frame, significant product development and capital investments will need to occur over the next 2–3 year in order to be ready for launching these new products for those model years. Thus a major part of the required capital and resource investment will need to occur now and over the next few years, under the final standards. NHTSA believes that the final rule requires significant investment and product development costs for the industry, focused on the next few years.

It is important to note, and as discussed later in this preamble, as well as in the Joint Technical Support Document and the agency's Regulatory Impact Analysis, the average model year 2016 per-vehicle cost increase of more than $900 includes an estimate of both the increase in capital investments by the auto companies and the suppliers as well as the increase in product development costs. These costs can be significant, especially as they must occur over the next 2–3 years. Both the domestic and transplant auto firms, as well as the domestic and world-wide automotive supplier base, are experiencing one of the most difficult markets in the U.S. and internationally that has been seen in the past 30 years. One major impact of the global downturn in the automotive industry and certainly in the U.S. is the significant reduction in product development engineers and staffs, as well as a tightening of the credit markets which allow auto firms and suppliers to make the near-term capital investments necessary to bring new technology into production.

The agency concludes that the levels of technology penetration required by the final standards are reasonable. Increasing the standards beyond those levels would lead to rapidly increasing dependence on advanced technologies with higher costs—technology that, though perhaps technologically feasible for individual vehicle models, would, at the scales involved, pose too great an economic burden given the state of the industry, particularly in the early years of the rulemaking time frame.[708]

Therefore, the agency concluded that these more stringent alternatives would give insufficient weight to economic practicability and related lead time

[708] Although the final standards are projected to be slightly more costly than the 5% alternative in MY 2012, that alternative standard becomes progressively more costly than the final standards in the remaining model years. See Figures IV.F.8 through IV.F.10 above. Moreover, as discussed above, after MY 2012, the 5% alternative standard yields less incremental fuel economy benefits at increased cost (both industry-wide and per vehicle), directionally the less desirable result. These increased costs incurred to increase fuel economy through MY 2016 would impose significantly increased economic burden on the manufacturers in the next few calendar years to prepare for these future model years. In weighing the statutory factors, NHTSA accordingly rejected this alternative in favor of the final standard.

concerns, given the current state of the industry and the rate of increase in stringency that would be required. Overall, the agency concluded that among the alternatives considered by the agency, the proposed alternative contained the maximum feasible CAFE standards for MYs 2012–2016 as they were the most appropriate balance of the various statutory factors.

Some commenters argued that the agency should select a more stringent alternative than that proposed in the NPRM. The Union of Concerned Scientists (UCS) commented that NHTSA should set standards to produce the "maximum environmental benefit" available at "reasonable" cost, and at least at the stringency maximizing net benefits. Students from the University of California at Santa Barbara commented that the agency should have based standards not just on technologies known to be available, but also on technologies that may be available in the future—and should do so in order to force manufacturers to "reach" to greater levels of performance. Also, the Center for Biological Diversity (CBD) commented that, having conducted an unbiased cost-benefit analysis showing benefits three times the magnitude of costs for the proposed alternative, the agency should select a more stringent alternative. CBD also argued that the agency should have evaluated the extent to which manufacturers could deploy technology more rapidly than suggested by a five-year redesign cycle.

Conversely, other commenters argued that NHTSA should select a less stringent alternative, either in all model years or at least in the earlier model years. Chrysler, VW, and the Alliance of Automobile Manufacturers commented that the stringency of NHTSA's CAFE standards should be further reduced relative to that of EPA's GHG emissions standards, so that manufacturers would not be required by CAFE to add any tailpipe technology beyond what they thought would be necessary to meet an mpg level of 35.5 minus the maximum possible A/C credits that could be obtained under the EPA program. Also, Chrysler, Daimler, Toyota, Volkswagen, and the Alliance argued that the agency should reduce the rate of increase in stringency to produce steadier and more "linear" increases between MY 2011 and MY 2016. In addition, the Heritage Foundation commented that the proposed standards would, in effect, force accelerated progress toward EISA's "35 mpg by 2020" requirement, causing financially-stressed manufacturers to incur undue costs that would be passed along to consumers.

However, most commenters supported the agency's selection of the proposed standards. The American Chemical Society, the New York Department of Environmental Conservation, the Washington State Department of Ecology, and several individuals all expressed general support for the levels of stringency proposed by NHTSA as part of the joint proposal. General Motors and Nissan both indicated that the proposed standards are consistent with the National Program announced by the President and supported in letters of commitment signed by these companies' executives. Finally, the California Air Resources Board (CARB) strongly supported the stringency of the proposed standards, as well as the agencies' underlying technical analysis and weighing of statutory factors. CARB further commented that the stringency increases in the earlier model years are essential to providing environmental benefits at least as great as would be achieved through state-level enforcement of CARB's GHG emissions standards.[709]

The agency has considered these comments and all others, and having considered those comments, believes the final standards best balance all relevant factors that the agency considers when determining maximum feasible CAFE standards. As discussed below, having updated inputs to its analysis and correspondingly updated its definition and analysis of these regulatory alternatives, the agency continues to conclude that manufacturers can respond to the proposed standards with technologies that will be available at reasonable cost. The agency finds that alternatives less stringent that the one adopted today would leave too much technology "on the shelf" unnecessarily, thereby failing to deliver the fuel savings that the nation needs or to yield environmental benefits necessary to support a harmonized national program. In response to some manufacturers' suggestion that NHTSA's CAFE standards should be made even less stringent compared to EPA's GHG emissions standards, NHTSA notes that the difference, consistent with the underlying Notice of Intent, is based on the agencies' estimate of the *average* amount of air conditioning credit earned, not the maximum theoretically available, and that NHTSA's analysis indicates that most manufacturers can achieve the CAFE standards by MY 2016 using tailpipe technologies. This is fully consistent with the agency's historical position. As NHTSA explained in the NPRM, the Conference Report for EPCA, as enacted in 1975, makes clear, and applicable law affirms, "a determination of maximum feasible average fuel economy should not be keyed to the single manufacturer which might have the most difficulty achieving a given level of average fuel economy." *CEI–I,* 793 F.2d 1322, 1352 (DC Cir. 1986). Instead, NHTSA is compelled "to weigh the benefits to the nation of a higher fuel economy standard against the difficulties of individual automobile manufacturers." *Id.* Thus, the law permits CAFE standards exceeding the projected capability of any particular manufacturer as long as the standard is economically practicable for the industry as a whole.

While some manufacturers may find greater A/C improvements to be a more cost-effective way of meeting the GHG standards, that does not mean those manufacturers will be *unable* to meet the CAFE standards with tailpipe technologies. NHTSA's analysis has demonstrated a feasible path to compliance with the CAFE standards for most manufacturers using those technologies. "Economic practicability" means just that, practicability, and need not always mean what is "cheapest" or "most cost-effective" for a specific manufacturer. Moreover, many of the A/C improvements on which manufacturers intend to rely for meeting the GHG standards will reduce GHG emissions, specifically HFC emissions, but they will not lead to greater fuel savings.[710] The core purpose of the CAFE standards under EPCA is to reduce fuel consumption. NHTSA believes that less stringent standards would allow tailpipe fuel economy technologies to be left on the table that can be feasibly and economically applied, and failing to apply them would lead to a loss in fuel savings. This would not place appropriate emphasis on the core CAFE purpose of conserving fuel. For this reason, we decline to reduce the stringency of our standards as requested by some manufacturers. Similarly, we decline to pursue with EPA in this rulemaking the suggestion by one commenter that that

[709] Generally speaking, the cumulative benefits (in terms of fuel savings and GHG reductions) of front-loaded standards will be greater than standards that increase linearly.

[710] This is not to say that NHTSA means, in any way, to deter manufacturers from employing A/C technologies to meet EPA's standards, but simply to say that NHTSA's independent obligation to set maximum feasible CAFE standards to be met through application of tailpipe technologies alone must be fulfilled, while recognizing the flexibilities offered in another regulatory program.

agency's calculation authority under EPCA be used to provide A/C credits.

With respect to some manufacturers' concerns regarding the increase in stringency through MY 2013, the agency notes that stringency increases in these model years are especially important in terms of the accumulation of fuel savings and emission reductions over time. In addition, a weakening would risk failing to produce emission reductions at least as great as might be achieved through CARB's GHG standards. Therefore, the agency believes that alternatives less stringent than the one adopted today would not give sufficient emphasis to the nation's need to conserve energy. The requirement to set standards that increase ratably between MYs 2011 and 2020 must also be considered in the context of what levels of standards would be maximum feasible. The agency believes that the rate of increase of the final standards is reasonable.

On the other hand, the agency disagrees with comments by UCS, CBD, and others indicating that more stringent standards would be appropriate. As discussed above, alternatives more stringent than the one adopted today would entail a rapidly increasing dependence on the most expensive technologies and those which are technically more demanding to implement, with commensurately rapid increases in costs. In the agency's considered judgment, these alternatives are not economically practicable, nor do they provide correspondingly sufficient lead time. The agency also disagrees with CBD's assertion that NHTSA and EPA have been overly conservative in assuming an average redesign cycle of 5 years. There are some manufacturers who apply longer cycles (such as smaller manufacturers described above), there are others who have shorter cycles for some of their products, and there are some products (*e.g.,* cargo vans) that tend to be redesigned on longer cycles. NHTSA believes that there are no full line manufacturers who can maintain significant redesigns of vehicles (with relative large sales) in 1 or 2 years, and CBD has provided no evidence indicating this would be practicable. A complete redesign of the entire U.S. light-duty fleet by model year 2012 is clearly infeasible, and NHTSA and EPA believe that several model years additional lead time is necessary in order for the manufacturers to meet the most stringent standards. The graduated increase in the stringency of the standards from MYs 2012 through 2016 accounts for the economic necessity of timing the application of many major technologies to coincide with scheduled model redesigns.

In contrast, through analysis of the illustrative results shown above, as well as the more complete and detailed results presented in the accompanying FRIA, NHTSA has concluded that the final standards are technologically feasible and economically practicable. The final standards will require manufacturers to apply considerable additional technology, starting with very significant investment in technology design, development and capital investment called for in the next few years. Although NHTSA cannot predict how manufacturers *will* respond to the final standards, the agency's analysis indicates that the standards could lead to significantly greater use of advanced engine and transmission technologies. As shown above, the agency's analysis shows considerable increases in the application of SGDI systems and engine turbocharging and downsizing. Though not presented above, the agency's analysis also shows similarly large increases in the use of dual-clutch automated manual transmissions (AMTs). However, the agency's analysis does not suggest that the additional application of these technologies in response to the final standards would extend beyond levels achievable by the industry. These technologies are likely to be applied to at least some extent even in the absence of new CAFE standards. In addition, the agency's analysis indicates that most manufacturers would rely only to a limited extent on the most costly technologies, such as diesel engines and advanced technologies, such as strong HEVs.

As shown below, NHTSA estimates that the final standards could lead to average incremental costs ranging from $303 per vehicle (for light trucks in MY 2012) to $947 per vehicle (for light trucks in MY 2016), increasing steadily from $396 per vehicle for all light vehicles in MY 2012 to $903 for all light vehicle in MY 2016. NHTSA estimates that these costs would vary considerably among manufacturers, but would rarely exceed $1,800 per vehicle. The following three tables summarize estimated manufacturer-level average incremental costs for the final standards and the average of the passenger and light truck fleets:

TABLE IV.F–6—AVERAGE INCREMENTAL COSTS ($/VEHICLE) UNDER FINAL PASSENGER CAR CAFE STANDARDS

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	3	4	24	184	585
Chrysler	734	1,043	1,129	1,270	1,358
Daimler	.....	.....	410	801	1,109
Ford	1,619	1,537	1,533	1,713	1,884
General Motors	448	896	1,127	1,302	1,323
Honda	33	98	205	273	456
Hyundai	559	591	768	744	838
Kia	110	144	177	235	277
Mazda	555	656	799	854	923
Mitsubishi	534	460	1,588	1,875	1,831
Nissan	119	323	707	723	832
Porsche	68	(52)	(51)	(50)	(49)
Subaru	292	324	988	1,385	1,361
Suzuki	.....	625	779	794	1,005
Tata	111	93	183	306	710
Toyota	31	29	41	121	126
Volkswagen	145	428	477	492	783
Average	455	552	670	774	880

TABLE IV.F–7—AVERAGE INCREMENTAL COSTS ($/VEHICLE) UNDER FINAL LIGHT TRUCK CAFE STANDARDS

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	252	239	277	281	701
Chrysler	360	527	876	931	1,170
Daimler	60	51	51	52	51
Ford	465	633	673	1,074	1,174
General Motors	292	513	749	807	986
Honda	233	217	370	457	806
Hyundai	693	630	1,148	1,136	1,113
Kia	400	467	582	780	1,137
Mazda	144	241	250	354	480
Mitsubishi	.....	.....	553	686	1,371
Nissan	398	489	970	1,026	1,362
Porsche	.....	(1)	(1)	469	469
Subaru	1,036	995	1,016	1,060	1,049
Suzuki	.....	1,797	1,744	1,689	1,732
Tata	.....	.....	.....	.....	503
Toyota	130	150	384	499	713
Volkswagen	.....	.....	514	458	441
Average	303	411	615	741	947

TABLE IV.F–8—AVERAGE INCREMENTAL COSTS ($/VEHICLE) UNDER FINAL CAFE STANDARDS

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	106	94	110	213	618
Chrysler	499	743	989	1,084	1,257
Daimler	20	18	281	554	773
Ford	1,195	1,187	1,205	1,472	1,622
General Motors	371	705	946	1,064	1,165
Honda	116	144	266	343	585
Hyundai	577	599	847	805	879
Kia	176	221	263	334	426
Mazda	482	587	716	778	858
Mitsubishi	371	319	1,200	1,389	1,647
Nissan	211	376	792	813	984
Porsche	52	(39)	(35)	130	124
Subaru	551	552	998	1,267	1,248
Suzuki	.....	823	954	946	1,123
Tata	61	56	101	182	629
Toyota	67	70	159	248	317
Volkswagen	117	333	486	486	723
Average	396	498	650	762	903

In summary, NHTSA has considered eight regulatory alternatives, including the final standards, examining technologies that could be applied in response to each alternative, as well as corresponding costs, effects, and benefits. The agency has concluded that alternatives less stringent than the final standards would not produce the fuel savings and CO_2 reductions necessary at this time to achieve either the overarching purpose of EPCA, *i.e.,* energy conservation, or an important part of the regulatory harmonization underpinning the National Program, and would forego these benefits even though there is adequate lead time to implement reasonable and feasible technology for the vehicles. Conversely, the agency has concluded that more stringent standards would involve levels of additional technology and cost that would be economically impracticable and, correspondingly, would provide inadequate lead time, considering the economic state of the automotive industry, would not be economically practicable. Therefore, having considered these eight regulatory alternatives, and the statutorily-relevant factors of technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy, along with other relevant factors such as the safety impacts of the final standards,[711] NHTSA concludes that the final standards represent a reasonable balancing of all of these concerns, and are the maximum feasible average fuel economy levels that the manufacturers can achieve in MYs 2012–2016.

G. Impacts of the Final CAFE Standards

1. How will these standards improve fuel economy and reduce GHG emissions for MY 2012–2016 vehicles?

As discussed above, the CAFE level required under an attribute-based standard depends on the mix of vehicles produced for sale in the U.S. Based on the market forecast that NHTSA and EPA have used to develop and analyze new CAFE and CO_2 emissions standards, NHTSA estimates that the new CAFE standards will require CAFE levels to increase by an average of 4.3 percent annually through MY 2016, reaching a combined average fuel

[711] *See* Section IV.G.7 below.

economy requirement of 34.1 mpg in that model year:

TABLE IV.G.1–1—ESTIMATED AVERAGE REQUIRED FUEL ECONOMY (mpg) UNDER FINAL STANDARDS

Model year	2012	2013	2014	2015	2016
Passenger Cars	33.3	34.2	34.9	36.2	37.8
Light Trucks	25.4	26.0	26.6	27.5	28.8
Combined	29.7	30.5	31.3	32.6	34.1

NHTSA estimates that average achieved fuel economy levels will correspondingly increase through MY 2016, but that manufacturers will, on average, undercomply [712] in some model years and overcomply [713] in others, reaching a combined average fuel economy of 33.7 mpg in MY 2016: [714]

TABLE IV.G.1–2—ESTIMATED AVERAGE ACHIEVED FUEL ECONOMY (mpg) UNDER FINAL STANDARDS

Model year	2012	2013	2014	2015	2016
Passenger Cars	32.8	34.4	35.3	36.3	37.2
Light Trucks	25.1	26.0	27.0	27.6	28.5
Combined	29.3	30.6	31.7	32.6	33.7

NHTSA estimates that these fuel economy increases will lead to fuel savings totaling 61 billion gallons during the useful lives of vehicles manufactured in MYs 2012–2016:

TABLE IV.G.1–3—FUEL SAVED (BILLION GALLONS) UNDER FINAL STANDARDS

Model year	2012	2013	2014	2015	2016	Total
Passenger Cars	2.4	5.2	7.2	9.4	11.4	35.7
Light Trucks	1.8	3.7	5.3	6.5	8.1	25.4
Combined	4.2	8.9	12.5	16.0	19.5	61.0

The agency also estimates that these new CAFE standards will lead to corresponding reductions of CO_2 emissions totaling 655 million metric tons (mmt) during the useful lives of vehicles sold in MYs 2012–2016:

TABLE IV.G.1–4—CARBON DIOXIDE EMISSIONS (mmt) AVOIDED UNDER FINAL STANDARDS

Model year	2012	2013	2014	2015	2016	Total
Passenger Cars	25	54	77	101	123	380
Light Trucks	19	40	57	71	88	275
Combined	44	94	134	172	210	655

2. How will these standards improve fleet-wide fuel economy and reduce GHG emissions beyond MY 2016?

Under the assumption that CAFE standards at least as stringent as those being finalized today for MY 2016 would be established for subsequent model years, the effects of the final standards on fuel consumption and GHG emissions will continue to increase for many years. This will occur because over time, a growing fraction of the U.S. light-duty vehicle fleet will be comprised of cars and light trucks that meet the MY 2016 standard. The impact of the new standards on fuel use and GHG emissions will continue to grow through approximately 2050, when virtually all cars and light trucks in service will have met standards as stringent as those established for MY 2016.

As Table IV.G.2–1 shows, NHTSA estimates that the fuel economy

[712] In NHTSA's analysis, "undercompliance" is mitigated either through use of FFV credits, use of existing or "banked" credits, or through fine payment. Because NHTSA cannot consider availability of credits in setting standards, the estimated achieved CAFE levels presented here do not account for their use. In contrast, because NHTSA is not prohibited from considering fine payment, the estimated achieved CAFE levels presented here include the assumption that BMW, Daimler (*i.e.,* Mercedes), Porsche, and, Tata (*i.e.,* Jaguar and Rover) will only apply technology up to the point that it would be less expensive to pay civil penalties.

[713] In NHTSA's analysis, "overcompliance" occurs through multi-year planning: manufacturers apply some "extra" technology in early model years (*e.g.,* MY 2014) in order to carry that technology forward and thereby facilitate compliance in later model years (*e.g.,* MY 2016).

[714] Consistent with EPCA, NHTSA has not accounted for manufacturers' ability to earn CAFE credits for selling FFVs, carry credits forward and back between model years, and transfer credits between the passenger car and light truck fleets.

increases resulting from the final standards will lead to reductions in total fuel consumption by cars and light trucks of 10 billion gallons during 2020, increasing to 32 billion gallons by 2050. Over the period from 2012, when the final standards would begin to take effect, through 2050, cumulative fuel savings would total 729 billion gallons, as Table IV.G.2–1 also indicates.

TABLE IV.G.2–1—REDUCTION IN FLEET-WIDE FUEL USE (BILLION GALLONS) UNDER FINAL STANDARDS

Calendar year	2020	2030	2040	2050	Total, 2012–2050
Passenger Cars	6	13	17	21	469
Light Trucks	4	7	9	11	260
Combined	10	20	26	32	729

The energy security analysis conducted for this rule estimates that the world price of oil will fall modestly in response to lower U.S. demand for refined fuel. One potential result of this decline in the world price of oil would be an increase in the consumption of petroleum products outside the U.S., which would in turn lead to a modest increase in emissions of greenhouse gases, criteria air pollutants, and airborne toxics from their refining and use. While additional information would be needed to analyze this "leakage effect" in detail, NHTSA provides a sample estimate of its potential magnitude in its Final EIS.[715] This analysis indicates that the leakage effect is likely to offset only a modest fraction of the reductions in emissions projected to result from the rule.

As a consequence of these reductions in fleet-wide fuel consumption, the agency also estimates that the new CAFE standards for MYs 2012–2016 will lead to corresponding reductions in CO_2 emissions from the U.S. light-duty vehicle fleet. Specifically, NHTSA estimates that total annual CO_2 emissions associated with passenger car and light truck use in the U.S. use will decline by 116 million metric tons (mmt) in 2020 as a consequence of the new standards, as Table IV.G.2–2 reports. The table also shows that the this annual reduction is estimated to grow to nearly 400 million metric tons by the year 2050, and will total nearly 9 billion metric tons over the period from 2012, when the final standards would take effect, through 2050.

TABLE IV.G.2–2—REDUCTION IN FLEET-WIDE CARBON DIOXIDE EMISSIONS (mmt) FROM PASSENGER CAR AND LIGHT TRUCK USE UNDER FINAL STANDARDS

Calendar year	2020	2030	2040	2050	Total, 2012–2050
Passenger Cars	69	153	205	255	5,607
Light Trucks	49	89	112	136	3,208
Combined	117	242	316	391	8,815

These reductions in fleet-wide CO_2 emissions, together with corresponding reductions in other GHG emissions from fuel production and use, would lead to small but significant reductions in projected changes in the future global climate. These changes, based on analysis documented in the final Environmental Impact Statement (EIS) that informed the agency's decisions regarding this rule, are summarized in Table IV.G.2–3 below.

TABLE IV.G.2–3—EFFECTS OF REDUCTIONS IN FLEET-WIDE CARBON DIOXIDE EMISSIONS (mmt) ON PROJECTED CHANGES IN GLOBAL CLIMATE

Measure	Units	Date	Projected change in measure		
			No action	With proposed standards	Difference
Atmospheric CO_2 Concentration	ppm	2100	783.0	780.3	−2.7
Increase in Global Mean Surface Temperature.	°C	2100	3.136	3.125	−0.011
Sea Level Rise	cm	2100	38.00	37.91	−0.09
Global Mean Precipitation	% change from 1980–1999 avg.	2090	4.59%	4.57%	−0.02%

[715] NHTSA Final Environmental Impact Statement: Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2012–2016, February 2010, page 3–14.

3. How will these final standards impact non-GHG emissions and their associated effects?

Under the assumption that CAFE standards at least as stringent as those proposed for MY 2016 would be established for subsequent model years, the effects of the new standards on air quality and its associated health effects will continue to be felt over the foreseeable future. This will occur because over time a growing fraction of the U.S. light-duty vehicle fleet will be comprised of cars and light trucks that meet the MY 2016 standard, and this growth will continue until approximately 2050.

Increases in the fuel economy of light-duty vehicles required by the new CAFE standards will cause a slight increase in the number of miles they are driven, through the fuel economy "rebound effect." In turn, this increase in vehicle use will lead to increases in emissions of criteria air pollutants and some airborne toxics, since these are products of the number of miles vehicles are driven.

At the same time, however, the projected reductions in fuel production and use reported in Table IV.G.2–1 above will lead to corresponding reductions in emissions of these pollutants that occur during fuel production and distribution ("upstream" emissions). For most of these pollutants, the reduction in upstream emissions resulting from lower fuel production and distribution will outweigh the increase in emissions from vehicle use, resulting in a net decline in their total emissions.[716]

Tables IV.G.3–1a and 3–1b report estimated reductions in emissions of selected criteria air pollutants (or their chemical precursors) and airborne toxics expected to result from the final standards during calendar year 2030. By that date, the majority of light-duty vehicles in use will have met the MY 2016 CAFE standards, so these reductions provide a useful index of the long-term impact of the final standards on air pollution and its consequences for human health.

TABLE IV.G.3–1a—PROJECTED CHANGES IN EMISSIONS OF CRITERIA AIR POLLUTANTS FROM CAR AND LIGHT TRUCK USE

[Calendar year 2030; tons]

Vehicle class	Source of emissions	Criteria air pollutant			
		Nitrogen oxides (NO_X)	Particulate matter ($PM_{2.5}$)	Sulfur oxides (SO_X)	Volatile organic compounds (VOC)
Passenger Cars	Vehicle use	2,718	465	−2,442	2,523
	Fuel production and distribution	−20,970	−2,831	−12,698	−75,342
	All sources	−18,252	−2,366	−15,140	−72,820
Light Trucks	Vehicle use	3,544	176	−1,420	1,586
	Fuel production and distribution	−12,252	−1,655	−7,424	−43,763
	All sources	−8,707	−1,479	−8,845	−42,177
Total	Vehicle use	6,263	642	−3,862	4,108
	Fuel production and distribution	−33,222	−4,487	−20,122	−119,106
	All sources	−26,959	−3,845	−23,984	−114,997

TABLE IV.G.3–1b—PROJECTED CHANGES IN EMISSIONS OF AIRBORNE TOXICS FROM CAR AND LIGHT TRUCK USE

[Calendar year 2030; tons]

Vehicle class	Source of emissions	Toxic air pollutant		
		Benzene	1,3-Butadiene	Formaldehyde
Passenger Cars	Vehicle use	72	18	59
	Fuel production and distribution	−161	−2	−58
	All sources	−89	16	1
Light Trucks	Vehicle use	38	10	65
	Fuel production and distribution	−94	−1	−34
	All sources	−55	9	32
Total	Vehicle use	111	28	124
	Fuel production and distribution	−254	−3	−91
	All sources	−144	25	33

Note: Positive values indicate increases in emissions; negative values indicate reductions.

In turn, the reductions in emissions reported in Tables IV.G.3–1a and 3–1b are projected to result in significant declines in the health effects that result from population exposure to these pollutants. Table IV.G.3–2 reports the estimated reductions in selected $PM_{2.5}$-related human health impacts that are expected to result from reduced

[716] As stated elsewhere, while the agency's analysis assumes that all changes in upstream emissions result from a decrease in petroleum production and transport, the analysis of non-GHG emissions in future calendar years also assumes that retail gasoline composition is unaffected by this rule; as a result, the impacts of this rule on downstream non-GHG emissions (more specifically, on air toxics) may be underestimated. *See* also Section III.G above for more information.

population exposure to unhealthful atmospheric concentrations of $PM_{2.5}$. The estimates reported in Table IV.G.3–2, based on analysis documented in the final Environmental Impact Statement (EIS) that informed the agency's decisions regarding this rule, are derived from $PM_{2.5}$-related dollar-per-ton estimates that include only quantifiable reductions in health impacts likely to result from reduced population exposure to particular matter (PM). They do not include all health impacts related to reduced exposure to PM, nor do they include any reductions in health impacts resulting from lower population exposure to other criteria air pollutants (particularly ozone) and air toxics. However, emissions changes and dollar-per-ton estimates alone are not necessarily a good indication of local or regional air quality and health impacts, as there may be localized impacts associated with this rulemaking, because the atmospheric chemistry related to ambient concentrations of $PM_{2.5}$, ozone, and air toxics is very complex. Full-scale photochemical modeling provides the necessary spatial and temporal detail to more completely and accurately estimate the changes in ambient levels of these pollutants and their associated health and welfare impacts. Although EPA conducted such modeling for purposes of the final rule, it was not available in time to be included in NHTSA's FEIS. See Section III.G above for EPA's description of the full-scale air quality modeling it conducted for the 2030 calendar year in an effort to capture this variability.

TABLE IV.G.3–2—PROJECTED REDUCTIONS IN HEALTH IMPACTS OF EXPOSURE TO CRITERIA AIR POLLUTANTS FROM FINAL STANDARDS

[Calendar year 2030]

Health impact	Measure	Projected reduction (2030)
Mortality (ages 30 and older)	premature deaths per year	243 to 623.
Chronic Bronchitis	cases per year	160.
Emergency Room Visits for Asthma	number per year	222.
Work Loss	workdays per year	28,705.

4. What are the estimated costs and benefits of these final standards?

NHTSA estimates that the final standards could entail significant additional technology beyond the levels reflected in the baseline market forecast used by NHTSA. This additional technology will lead to increases in costs to manufacturers and vehicle buyers, as well as fuel savings to vehicle buyers. The following three tables summarize the extent to which the agency estimates technologies could be added to the passenger car, light truck, and overall fleets in each model year in response to the proposed standards. Percentages reflect the technology's additional application in the market, and are negative in cases where one technology is superseded (*i.e.,* displaced) by another. For example, the agency estimates that many automatic transmissions used in light trucks could be displaced by dual clutch transmissions.

TABLE IV.G.4–1—ADDITION OF TECHNOLOGIES TO PASSENGER CAR FLEET UNDER FINAL STANDARDS

Technology	MY 2012 (percent)	MY 2013 (percent)	MY 2014 (percent)	MY 2015 (percent)	MY 2016 (percent)
Low Friction Lubricants	14	18	19	21	21
Engine Friction Reduction	15	37	41	43	52
VVT—Coupled Cam Phasing (CCP) on SOHC	2	3	3	5	7
Discrete Variable Valve Lift (DVVL) on SOHC	0	1	1	4	4
Cylinder Deactivation on SOHC	0	0	0	0	0
VVT—Intake Cam Phasing (ICP)	0	0	0	0	0
VVT—Dual Cam Phasing (DCP)	11	15	16	17	24
Discrete Variable Valve Lift (DVVL) on DOHC	9	19	22	23	29
Continuously Variable Valve Lift (CVVL)	0	0	0	0	0
Cylinder Deactivation on DOHC	0	0	0	1	2
Cylinder Deactivation on OHV	0	1	1	1	1
VVT—Coupled Cam Phasing (CCP) on OHV	0	1	2	2	2
Discrete Variable Valve Lift (DVVL) on OHV	0	1	1	2	3
Conversion to DOHC with DCP	0	0	0	0	0
Stoichiometric Gasoline Direct Injection (GDI)	9	18	21	24	28
Combustion Restart	0	0	1	4	9
Turbocharging and Downsizing	8	14	16	19	21
Exhaust Gas Recirculation (EGR) Boost	0	8	10	13	17
Conversion to Diesel following TRBDS	2	2	2	2	2
Conversion to Diesel following CBRST	0	0	0	0	0
6-Speed Manual/Improved Internals	1	1	1	1	1
Improved Auto. Trans. Controls/Externals	0	3	4	1	−3
Continuously Variable Transmission	0	0	0	0	0
6/7/8-Speed Auto. Trans with Improved Internals	0	0	1	1	2
Dual Clutch or Automated Manual Transmission	12	26	34	47	54
Electric Power Steering	9	22	25	26	38
Improved Accessories	18	25	27	31	41
12V Micro-Hybrid	0	0	0	0	0
Belt mounted Integrated Starter Generator	4	11	19	24	25

TABLE IV.G.4–1—ADDITION OF TECHNOLOGIES TO PASSENGER CAR FLEET UNDER FINAL STANDARDS—Continued

Technology	MY 2012 (percent)	MY 2013 (percent)	MY 2014 (percent)	MY 2015 (percent)	MY 2016 (percent)
Crank mounted Integrated Starter Generator	3	3	3	3	3
Power Split Hybrid	2	2	2	2	2
2-Mode Hybrid	0	0	0	0	0
Plug-in Hybrid	0	0	0	0	0
Mass Reduction (1.5)	18	26	32	39	46
Mass Reduction (3.5 to 8.5)	0	0	17	31	40
Low Rolling Resistance Tires	4	16	23	32	35
Low Drag Brakes	2	3	4	4	6
Secondary Axle Disconnect—Unibody	0	0	0	0	0
Secondary Axle Disconnect—Ladder Frame	1	2	2	2	2
Aero Drag Reduction	6	20	29	34	38

TABLE IV.G.4–2—ADDITION OF TECHNOLOGIES TO LIGHT TRUCK FLEET UNDER FINAL STANDARDS

Technology	MY 2012 (percent)	MY 2013 (percent)	MY 2014 (percent)	MY 2015 (percent)	MY 2016 (percent)
Low Friction Lubricants	18	20	22	23	23
Engine Friction Reduction	14	34	35	40	51
VVT—Coupled Cam Phasing (CCP) on SOHC	2	3	3	2	2
Discrete Variable Valve Lift (DVVL) on SOHC	1	2	2	2	3
Cylinder Deactivation on SOHC	6	6	6	6	5
VVT—Intake Cam Phasing (ICP)	0	0	0	1	1
VVT—Dual Cam Phasing (DCP)	6	8	13	13	17
Discrete Variable Valve Lift (DVVL) on DOHC	9	12	17	17	18
Continuously Variable Valve Lift (CVVL)	0	0	0	0	0
Cylinder Deactivation on DOHC	1	1	1	1	0
Cylinder Deactivation on OHV	0	1	1	2	7
VVT—Coupled Cam Phasing (CCP) on OHV	0	0	0	0	13
Discrete Variable Valve Lift (DVVL) on OHV	0	13	14	19	19
Conversion to DOHC with DCP	0	0	0	0	0
Stoichiometric Gasoline Direct Injection (GDI)	12	17	23	24	31
Combustion Restart	0	0	3	5	18
Turbocharging and Downsizing	3	6	10	10	14
Exhaust Gas Recirculation (EGR) Boost	0	2	6	6	9
Conversion to Diesel following TRBDS	1	1	1	1	1
Conversion to Diesel following CBRST	0	0	0	0	0
6-Speed Manual/Improved Internals	0	0	0	0	0
Improved Auto. Trans. Controls/Externals	0	−11	−17	−28	−32
Continuously Variable Transmission	0	0	0	0	0
6/7/8-Speed Auto. Trans with Improved Internals	−2	−2	−2	−2	−1
Dual Clutch or Automated Manual Transmission	10	32	46	58	65
Electric Power Steering	7	11	11	20	27
Improved Accessories	7	9	10	15	23
12V Micro-Hybrid	0	0	0	0	0
Belt mounted Integrated Starter Generator	5	10	19	20	21
Crank mounted Integrated Starter Generator	0	0	0	0	0
Power Split Hybrid	1	1	1	1	1
2-Mode Hybrid	0	0	0	0	0
Plug-in Hybrid	0	0	0	0	0
Mass Reduction (1.5)	4	5	21	35	48
Mass Reduction (3.5 to 8.5)	0	0	19	33	54
Low Rolling Resistance Tires	11	12	13	16	17
Low Drag Brakes	14	32	30	31	40
Secondary Axle Disconnect—Unibody	0	0	0	0	0
Secondary Axle Disconnect—Ladder Frame	17	19	20	21	28
Aero Drag Reduction	13	15	20	22	25

TABLE IV.G.4–3—ADDITION OF TECHNOLOGIES TO OVERALL FLEET UNDER FINAL STANDARDS

Technology	MY 2012 (percent)	MY 2013 (percent)	MY 2014 (percent)	MY 2015 (percent)	MY 2016 (percent)
Low Friction Lubricants	16	18	20	22	22
Engine Friction Reduction	15	36	39	42	51
VVT—Coupled Cam Phasing (CCP) on SOHC	2	3	3	4	5
Discrete Variable Valve Lift (DVVL) on SOHC	0	1	2	3	3
Cylinder Deactivation on SOHC	2	3	2	2	2
VVT—Intake Cam Phasing (ICP)	0	0	0	0	0

TABLE IV.G.4–3—ADDITION OF TECHNOLOGIES TO OVERALL FLEET UNDER FINAL STANDARDS—Continued

Technology	MY 2012 (percent)	MY 2013 (percent)	MY 2014 (percent)	MY 2015 (percent)	MY 2016 (percent)
VVT—Dual Cam Phasing (DCP)	9	13	15	16	22
Discrete Variable Valve Lift (DVVL) on DOHC	9	16	20	21	25
Continuously Variable Valve Lift (CVVL)	0	0	0	0	0
Cylinder Deactivation on DOHC	0	1	0	1	1
Cylinder Deactivation on OHV	0	1	1	1	3
VVT—Coupled Cam Phasing (CCP) on OHV	0	1	1	1	6
Discrete Variable Valve Lift (DVVL) on OHV	0	6	6	8	8
Conversion to DOHC with DCP	0	0	0	0	0
Stoichiometric Gasoline Direct Injection (GDI)	10	17	22	24	29
Combustion Restart	0	0	1	4	12
Turbocharging and Downsizing	6	11	14	16	19
Exhaust Gas Recirculation (EGR) Boost	0	6	8	11	14
Conversion to Diesel following TRBDS	1	2	2	2	2
Conversion to Diesel following CBRST	0	0	0	0	0
6-Speed Manual/Improved Internals	0	0	0	0	1
Improved Auto. Trans. Controls/Externals	0	−2	−4	−10	−13
Continuously Variable Transmission	0	0	0	0	0
6/7/8-Speed Auto. Trans with Improved Internals	−1	0	0	0	1
Dual Clutch or Automated Manual Transmission	11	28	38	51	58
Electric Power Steering	8	18	20	24	34
Improved Accessories	13	19	21	25	35
12V Micro-Hybrid	0	0	0	0	0
Belt mounted Integrated Starter Generator	5	11	19	23	23
Crank mounted Integrated Starter Generator	2	2	2	2	2
Power Split Hybrid	2	2	2	1	1
2-Mode Hybrid	0	0	0	0	0
Plug-in Hybrid	0	0	0	0	0
Mass Reduction (1.5)	13	18	28	37	47
Mass Reduction (3.5 to 8.5)	0	0	18	32	45
Low Rolling Resistance Tires	7	14	19	26	29
Low Drag Brakes	6	14	14	14	18
Secondary Axle Disconnect—Unibody	0	0	0	0	0
Secondary Axle Disconnect—Ladder Frame	7	8	8	8	11
Aero Drag Reduction	9	18	26	30	34

In order to pay for this additional technology (and, for some manufacturers, civil penalties), NHTSA estimates that the cost of an average passenger car and light truck will, relative to levels resulting from compliance with baseline (MY 2011) standards, increase by $505–$907 and $322–$961, respectively, during MYs 2011–2016. The following tables summarize the agency's estimates of average cost increases for each manufacturer's passenger car, light truck, and overall fleets (with corresponding averages for the industry):

TABLE IV.G.4–4—AVERAGE PASSENGER CAR INCREMENTAL COST INCREASES ($) UNDER FINAL STANDARDS

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	157	196	255	443	855
Chrysler	794	1,043	1,129	1,270	1,358
Daimler	160	198	564	944	1,252
Ford	1,641	1,537	1,533	1,713	1,884
General Motors	552	896	1,127	1,302	1,323
Honda	33	98	205	273	456
Hyundai	559	591	768	744	838
Kia	110	144	177	235	277
Mazda	632	656	799	854	923
Mitsubishi	644	620	1,588	1,875	1,831
Nissan	119	323	707	723	832
Porsche	316	251	307	390	496
Subaru	413	472	988	1,385	1,361
Suzuki	242	625	779	794	1,005
Tata	243	258	370	532	924
Toyota	31	29	41	121	126
Volkswagen	293	505	587	668	964
Total/Average	505	573	690	799	907

TABLE IV.G.4–5—AVERAGE LIGHT TRUCK INCREMENTAL COST INCREASES ($) UNDER FINAL STANDARDS

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	252	272	338	402	827
Chrysler	409	527	876	931	1,170
Daimler	98	123	155	189	260
Ford	465	633	673	1,074	1,174
General Motors	336	513	749	807	986
Honda	233	217	370	457	806
Hyundai	693	630	1,148	1,136	1,113
Kia	406	467	582	780	1,137
Mazda	144	241	250	354	480
Mitsubishi	39	77	553	686	1,371
Nissan	398	489	970	1,026	1,362
Porsche	44	76	109	568	640
Subaru	1,036	995	1,016	1,060	1,049
Suzuki	66	1,797	1,744	1,689	1,732
Tata	66	110	137	198	690
Toyota	130	150	384	499	713
Volkswagen	44	77	552	557	606
Total/Average	322	416	621	752	961

TABLE IV.G.4–6—AVERAGE INCREMENTAL COST INCREASES ($) BY MANUFACTURER UNDER FINAL STANDARDS

Manufacturer	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
BMW	196	225	283	430	847
Chrysler	553	743	989	1,084	1,257
Daimler	139	171	417	695	937
Ford	1,209	1,187	1,205	1,472	1,622
General Motors	446	705	946	1,064	1,165
Honda	116	144	266	343	585
Hyundai	577	599	847	805	879
Kia	177	221	263	334	426
Mazda	545	587	716	778	858
Mitsubishi	459	453	1,200	1,389	1,647
Nissan	211	376	792	813	984
Porsche	250	207	243	452	544
Subaru	630	650	998	1,267	1,248
Suzuki	231	823	954	946	1,123
Tata	164	199	265	396	832
Toyota	67	70	159	248	317
Volkswagen	245	410	579	648	901
Total/Average	434	513	665	782	926

Based on the agencies' estimates of manufacturers' future sales volumes, these cost increases will lead to a total of $51.7 billion in incremental outlays during MYs 2012–2016 for additional technology attributable to the final standards:

TABLE IV.G.4–7—INCREMENTAL TECHNOLOGY OUTLAYS ($b) UNDER FINAL STANDARDS

	2012	2013	2014	2015	2016	Total
Passenger Cars	4.1	5.4	6.9	8.2	9.5	34.2
Light Trucks	1.8	2.5	3.7	4.3	5.4	17.6
Combined	5.9	7.9	10.5	12.5	14.9	51.7

NHTSA notes that these estimates of the economic costs for meeting higher CAFE standards omit certain potentially important categories of costs, and may also reflect underestimation (or possibly overestimation) of some costs that are included. For example, although the agency's analysis is intended to hold vehicle performance, capacity, and utility constant in estimating the costs of applying fuel-saving technologies to vehicles, the analysis imputes no cost to any actual reductions in vehicle performance, capacity, and utility that may result from manufacturers' efforts to comply with the final CAFE standards. Although these costs are difficult to estimate accurately, they nonetheless represent a notable category of omitted costs if they have not been adequately accounted for in the cost estimates. Similarly, the agency's estimates of net benefits for meeting higher CAFE standards does not estimate the economic value of potential changes in motor vehicle fatalities and injuries that could result from

reductions in the size or weight of vehicles. While NHTSA reports a range of estimates of these potential safety effects below and in the FRIA (ranging from a net negative monetary impact to a net positive benefits for society), no estimate of their economic value is included in the agency's estimates of the net benefits resulting from the final standards.

Finally, while NHTSA is confident that the cost estimates are the best available and appropriate for purposes of this final rule, it is possible that the agency may have underestimated or overestimated manufacturers' direct costs for applying some fuel economy technologies, or the increases in manufacturer's indirect costs associated with higher vehicle manufacturing costs. In either case, the technology outlays reported here will not correctly represent the costs of meeting higher CAFE standards. Similarly, NHTSA's estimates of increased costs of congestion, accidents, and noise associated with added vehicle use are drawn from a 1997 study, and the correct magnitude of these values may have changed since they were developed. If this is the case, the costs of increased vehicle use associated with the fuel economy rebound effect will differ from the agency's estimates in this analysis. Thus, like the agency's estimates of economic benefits, estimates of total compliance costs reported here may underestimate or overestimate the true economic costs of the final standards.

However, offsetting these costs, the achieved increases in fuel economy will also produce significant benefits to society. NHTSA attributes most of these benefits to reductions in fuel consumption, valuing fuel savings at future pretax prices in EIA's reference case forecast from AEO 2010. The total benefits also include other benefits and dis-benefits, examples of which include the social values of reductions in CO_2 and criteria pollutant emissions, the value of additional travel (induced by the rebound effect), and the social cost of additional congestion, accidents, and noise attributable to that additional travel. The FRIA accompanying today's final rule presents a detailed analysis of the rule's specific benefits.

As Table IV.G.4–8 shows, NHTSA estimates that at the discount rate of 3 percent prescribed in OMB guidance for regulatory analysis, the present value of total benefits from the final CAFE standards over the lifetimes of MY 2012–2016 passenger cars and light trucks will be $182.5 billion.

TABLE IV.G.4–8—PRESENT VALUE OF BENEFITS ($BILLION) UNDER FINAL STANDARDS USING 3 PERCENT DISCOUNT RATE [717]

	2012	2013	2014	2015	2016	Total
Passenger Cars	6.8	15.2	21.6	28.7	35.2	107.5
Light Trucks	5.1	10.7	15.5	19.4	24.3	75.0
Combined	11.9	25.8	37.1	48.0	59.5	182.5

Table IV.G.4–9 reports that the present value of total benefits from requiring cars and light trucks to achieve the fuel economy levels specified in the final CAFE standards for MYs 2012–16 will be $146.2 billion when discounted at the 7 percent rate also required by OMB guidance. Thus the present value of fuel savings and other benefits over the lifetimes of the vehicles covered by the final standards is $36.3 billion—or about 20 percent—lower when discounted at a 7 percent annual rate than when discounted using the 3 percent annual rate.[718]

TABLE IV.G.4–9—PRESENT VALUE OF BENEFITS ($BILLION) UNDER FINAL STANDARDS USING 7 PERCENT DISCOUNT RATE

	2012	2013	2014	2015	2016	Total
Passenger Cars	5.5	12.3	17.5	23.2	28.6	87.0
Light Trucks	4.0	8.4	12.2	15.3	19.2	59.2
Combined	9.5	20.7	29.7	38.5	47.8	146.2

For both the passenger car and light truck fleets, NHTSA estimates that the benefits of today's final standards will exceed the corresponding costs in every model year, so that the *net* social benefits from requiring higher fuel economy—the difference between the total benefits that result from higher fuel economy and the technology outlays required to achieve it—will be substantial. Because the technology outlays required to achieve the fuel economy levels required by the final standards are incurred during the model years when vehicles are produced and sold, however, they are not subject to discounting, so that their present value does not depend on the discount rate used.[719] Thus the net benefits of the final standards differ depending on whether the 3 percent or 7 percent discount rate is used, but only because the choice of discount rates affects the present value of total benefits, and not that of technology costs.

As Table IV.G.4–10 shows, over the lifetimes of the affected (MY 2012–2016)

[717] Unless otherwise indicated, all tables in Section IV report benefits calculated using the Reference Case input assumptions, with future benefits resulting from reductions in carbon dioxide emissions discounted at the 3 percent rate prescribed in the interagency guidance on the social cost of carbon.

[718] For tables that report total or net benefits using a 7 percent discount rate, future benefits from reducing carbon dioxide emissions are discounted at 3 percent, in order to maintain consistency with the discount rate used to develop the reference case estimate of the social cost of carbon. All other future benefits reported in these tables are discounted using the 7 percent rate.

[719] Although technology costs are incurred at the beginning of each model year's lifetime and thus are not subject to discounting, the discount rate does influence the effective cost of some technologies. Because NHTSA assumes some manufacturers will be willing to pay civil penalties when compliance costs become sufficiently high, It is still possible for the discount rate to affect the agency's estimate of total technology outlays. However, this does not occur under the alternative NHTSA has adopted for its final MY 2012–16 CAFE standards.

vehicles, the agency estimates that when the benefits of the final standards are discounted at a 3 percent rate, they will exceed the costs of the final standards by $130.7 billion:

TABLE IV.G.4–10—PRESENT VALUE OF NET BENEFITS ($BILLION) UNDER FINAL STANDARDS USING 3 PERCENT DISCOUNT RATE

	2012	2013	2014	2015	2016	Total
Passenger Cars	2.7	9.7	14.8	20.5	25.7	73.3
Light Trucks	3.4	8.2	11.8	15.0	18.9	57.4
Combined	6.0	18.0	26.6	35.5	44.6	130.7

As indicated previously, when fuel savings and other future benefits resulting from the final standards are discounted at the 7 percent rate prescribed in OMB guidance, they are $36.3 billion lower than when the 3 percent discount rate is applied. Because technology costs are not subject to discounting, using the higher 7 percent discount rate reduces net benefits by exactly this same amount. Nevertheless, Table IV.G.4–11 shows that the net benefits from requiring passenger cars and light trucks to achieve higher fuel economy are still substantial even when future benefits are discounted at the higher rate, totaling $94.5 billion over MYs 2012–16. Net benefits are thus about 28 percent lower when future benefits are discounted at a 7 percent annual rate than at a 3 percent rate.

TABLE IV.G.4–11—PRESENT VALUE OF NET BENEFITS ($BILLION) UNDER FINAL STANDARDS USING 7 PERCENT DISCOUNT RATE

	2012	2013	2014	2015	2016	Total
Passenger Cars	1.3	6.8	10.6	15.0	19.0	52.9
Light Trucks	2.3	5.9	8.6	11.0	13.9	41.6
Combined	3.6	12.8	19.2	26.0	32.9	94.5

NHTSA's estimates of economic benefits from establishing higher CAFE standards are subject to considerable uncertainty. Most important, the agency's estimates of the fuel savings likely to result from adopting higher CAFE standards depend critically on the accuracy of the estimated fuel economy levels that will be achieved under both the baseline scenario, which assumes that manufacturers will continue to comply with the MY 2011 CAFE standards, and under alternative increases in the standards that apply to MYs 2012–16 passenger cars and light trucks. Specifically, if the agency has underestimated the fuel economy levels that manufacturers would have achieved under the baseline scenario—or is too optimistic about the fuel economy levels that manufacturers will actually achieve under the final standards—its estimates of fuel savings and the resulting economic benefits attributable to this rule will be too large.

Another major source of potential overestimation in the agency's estimates of benefits from requiring higher fuel economy stems from its reliance on the Reference Case fuel price forecasts reported in AEO 2010. Although NHTSA believes that these forecasts are the most reliable that are available, they are nevertheless significantly higher than the fuel price projections reported in most previous editions of EIA's Annual Energy Outlook, and reflect projections of world oil prices that are well above forecasts issued by other firms and government agencies. If the future fuel prices projected in AEO 2010 prove to be too high, the agency's estimates of the value of future fuel savings—the major component of benefits from this rule—will also be too high.

In addition, it is possible that NHTSA's estimates of economic benefits from the effects of saving fuel on U.S. petroleum consumption and imports are too high. The estimated "energy security premium" the agency uses to value reductions in U.S. petroleum imports includes both increased payments for petroleum imports that occur when world oil prices increase rapidly, and losses in U.S. GDP losses and adjustment costs that result from oil price shocks. One commenter suggested increased import costs associated with rapid increases in petroleum prices represent transfers from U.S. oil consumers to petroleum suppliers rather than real economic costs, so any reduction in their potential magnitude should be excluded when calculating benefits from lower U.S. petroleum imports. If this view is correct, then the agency's estimates of benefits from the effect of reduced fuel consumption on U.S. petroleum imports would indeed be too high.[720]

However, it is also possible that NHTSA's estimates of economic benefits from establishing higher CAFE standards *under*estimate the true economic benefits of the fuel savings those standards would produce. If the AEO 2010 forecast of fuel prices proves to be too low, for example, NHTSA will have underestimated the value of fuel savings that will result from adopting higher CAFE standards for MY 2012–16. As another example, the agency's estimate of benefits from reducing the threat of economic damages from disruptions in the supply of imported petroleum to the U.S. applies to

[720] Doing so, however, would represent a significant departure from how disruption costs associated with oil price shocks have been quantified in research on the value of energy security, and NHTSA believes this issue should be analyzed in more detail before these costs are excluded. Moreover, the agency believes that increases in import costs during oil supply disruptions differ from transfers due to the existence of U.S. monopsony power in the world oil market, since they reflect real resource shortages and costly short-run shifts in demand by energy users, rather than losses to consumers of petroleum products that that are matched by offsetting gains to suppliers. Thus the agency believes that reducing their expected value provides real economic benefits, and they do not represent pure transfers.

calendar year 2015. If the magnitude of this estimate would be expected to grow after 2015 in response to increases in U.S. petroleum imports, growth in the level of U.S. economic activity, or increases in the likelihood of disruptions in the supply of imported petroleum, the agency may have underestimated the benefits from the reduction in petroleum imports expected to result from adopting higher CAFE standards.

NHTSA's benefit estimates could also be too low because they exclude or understate the economic value of certain potentially significant categories of benefits from reducing fuel consumption. As one example, EPA's estimates of the economic value of reduced damages to human health resulting from lower exposure to criteria air pollutants includes only the effects of reducing population exposure to $PM_{2.5}$ emissions. Although this is likely to be the most significant component of health benefits from reduced emissions of criteria air pollutants, it excludes the value of reduced damages to human health and other impacts resulting from lower emissions and reduced population exposure to other criteria air pollutants, including ozone and nitrous oxide (N_2O), as well as airborne toxics. EPA's estimates exclude these benefits because no reliable dollar-per-ton estimates of the health impacts of criteria pollutants other than $PM_{2.5}$ or of the health impacts of airborne toxics were available to use in developing estimates of these benefits.

Similarly, the agency's estimate of the value of reduced climate-related economic damages from lower emissions of GHGs excludes many sources of potential benefits from reducing the pace and extent of global climate change.[721] For example, none of the three models used to value climate-related economic damages includes ocean acidification or loss of species and wildlife. The models also may not adequately capture certain other impacts, such as potentially abrupt changes in climate associated with thresholds that govern climate system responses, inter-sectoral and inter-regional interactions, including global security impacts of high-end extreme warming, or limited near-term substitutability between damage to natural systems and increased consumption. Including monetized estimates of benefits from reducing the extent of climate change and these associated impacts would increase the agency's estimates of benefits from adopting higher CAFE standards.

The following tables present itemized costs and benefits for the combined passenger car and light truck fleets for each model year affected by the final standards as well as for all model years combined, using both discount rates prescribed by OMB regulatory guidance. Table IV.G.4–12 reports technology outlays, each separate component of benefits (including costs associated with additional driving due to the rebound effect, labeled "dis-benefits"), the total value of benefits, and net benefits, using the 3 percent discount rate. (Numbers in parentheses represent negative values.)

TABLE IV.G.4–12—ITEMIZED COST AND BENEFIT ESTIMATES FOR THE COMBINED VEHICLE FLEET USING 3 PERCENT DISCOUNT RATE ($M)

	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016	Total
Costs						
Technology Costs	5,903	7,890	10,512	12,539	14,904	51,748
Benefits						
Savings in Lifetime Fuel Expenditures	9,265	20,178	29,083	37,700	46,823	143,048
Consumer Surplus from Additional Driving	696	1,504	2,150	2,754	3,387	10,491
Value of Savings in Refueling Time	706	1,383	1,939	2,464	2,950	9,443
Reduction in Petroleum Market Externalities	545	1,154	1,630	2,080	2,543	7,952
Reduction in Climate-Related Damages from Lower CO_2 Emissions[722]	921	2,025	2,940	3,840	4,804	14,528
Reduction in Health Damage Costs from Lower Emissions of Criteria Air Pollutants:						
CO	0	0	0	0	0	0
VOC	42	76	102	125	149	494
NO_X	70	104	126	146	166	612
PM	205	434	612	776	946	2,974
SO_X	158	332	469	598	731	2,288
Dis-Benefits from Increased Driving:						
Congestion Costs	(447)	(902)	(1,282)	(1,633)	(2,000)	(6,264)
Noise Costs	(9)	(18)	(25)	(32)	(39)	(122)
Crash Costs	(217)	(430)	(614)	(778)	(950)	(2,989)
Total Benefits	11,936	25,840	37,132	48,040	59,509	182,457

[721] *Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866,* Interagency Working Group on Social Cost of Carbon, United States Government, February 2010. Available in Docket No. NHTSA–2009–0059.

[722] Using the central value of $21 per metric ton for the SCC, and discounting future benefits from reduced CO_2 emissions at a 3 percent annual rate. Additionally, we note that the $21 per metric ton value for the SCC applies to calendar year 2010, and increases over time. See the interagency guidance on SCC for more information.

TABLE IV.G.4–12—ITEMIZED COST AND BENEFIT ESTIMATES FOR THE COMBINED VEHICLE FLEET USING 3 PERCENT DISCOUNT RATE ($M)—Continued

	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016	Total
Net Benefits	6,033	17,950	26,619	35,501	44,606	130,709

Similarly, Table IV.G.4–13 below reports technology outlays, the individual components of benefits (including "dis-benefits" resulting from additional driving) and their total, and net benefits, using the 7 percent discount rate. (Again, numbers in parentheses represent negative values.)

TABLE IV.G.4–13—ITEMIZED COST AND BENEFIT ESTIMATES FOR THE COMBINED VEHICLE FLEET USING 7 PERCENT DISCOUNT RATE ($M)

	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016	Total
Costs						
Technology Costs	5,903	7,890	10,512	12,539	14,904	51,748
Benefits						
Savings in Lifetime Fuel Expenditures	7,197	15,781	22,757	29,542	36,727	112,004
Consumer Surplus from Additional Driving	542	1,179	1,686	2,163	2,663	8,233
Value of Savings in Refueling Time	567	1,114	1,562	1,986	2,379	7,608
Reduction in Petroleum Market Externalities	432	917	1,296	1,654	2,023	6,322
Reduction in Climate-Related Damages from Lower CO_2 Emissions [723]	921	2,025	2,940	3,840	4,804	14,530
Reduction in Health Damage Costs from Lower Emissions of Criteria Air Pollutants:						
CO	0	0	0	0	0	0
VOC	32	60	80	99	119	390
NO_X	53	80	98	114	131	476
PM	154	336	480	611	748	2,329
SO_X	125	265	373	475	581	1,819
Dis-Benefits from Increased Driving:						
Congestion Costs	(355)	(719)	(1,021)	(1,302)	(1,595)	(4,992)
Noise Costs	(7)	(14)	(20)	(26)	(31)	(98)
Crash Costs	(173)	(342)	(488)	(619)	(756)	(2,378)
Total Benefits	9,488	20,682	29,743	38,537	47,793	146,243
Net Benefits	3,586	12,792	19,231	25,998	32,890	94,497

The above benefit and cost estimates did not reflect the availability and use of flexibility mechanisms, such as compliance credits and credit trading, because EPCA prohibits NHTSA from considering the effects of those mechanisms in setting CAFE standards. However, the agency noted that, in reality, manufacturers were likely to rely to some extent on flexibility mechanisms provided by EPCA and would thereby reduce the cost of complying with the final standards to a meaningful extent.

As discussed in the FRIA, NHTSA has performed an analysis to estimate the costs and benefits if EPCA's provisions regarding FFVs are accounted for. The agency considered also attempting to account for other EPCA flexibility mechanisms, in particular credit transfers between the passenger and nonpassenger fleets, but has concluded that, at least within a context in which each model year is represented explicitly, technologies carry forward between model years, and multi-year planning effects are represented, there is no basis to estimate reliably how manufacturers might use these mechanisms. Accounting for the FFV provisions indicates that achieved fuel economies would be 0.5–1.3 mpg lower than when these provisions are not considered (for comparison see Table IV.G.1–2 above):

[723] Using the central value of $21 per metric ton for the SCC, and discounting future benefits from reduced CO_2 emissions at a 3 percent annual rate. Additionally, we note that the $21 per metric ton value for the SCC applies to calendar year 2010, and increases over time. *See* the interagency guidance on SCC for more information.

TABLE IV.G.4–14—AVERAGE ACHIEVED FUEL ECONOMY (mpg) UNDER FINAL STANDARDS (WITH FFV CREDITS)

	2012	2013	2014	2015	2016
Passenger Cars	32.3	33.5	34.2	35.0	36.2
Light Trucks	24.5	25.1	25.9	26.7	27.5
Combined	28.7	29.7	30.6	31.5	32.7

As a result, NHTSA estimates that, when FFV credits are taken into account, fuel savings will total 58.6 billion gallons—about 3.9 percent less than the 61.0 billion gallons estimated when these credits are not considered:

TABLE IV.G.4–15—FUEL SAVED (BILLION GALLONS) UNDER FINAL STANDARDS (WITH FFV CREDITS)

	2012	2013	2014	2015	2016	Total
Passenger Cars	2.7	4.7	6.4	8.4	11.0	33.1
Light Trucks	2.3	3.6	5.0	6.6	8.1	25.5
Combined	4.9	8.2	11.3	15.0	19.1	58.6

The agency similarly estimates CO_2 emissions reductions will total 636 million metric tons (mmt), about 2.9 percent less than the 655 mmt estimated when these credits are not considered:[724]

TABLE IV.G.4–16—AVOIDED CARBON DIOXIDE EMISSIONS (mmt) UNDER FINAL STANDARDS (WITH FFV CREDITS)

	2012	2013	2014	2015	2016	Total
Passenger Cars	28	50	69	91	119	357
Light Trucks	25	39	54	72	88	279
Combined	53	89	123	163	208	636

This analysis further indicates that significant reductions in outlays for additional technology will result when FFV provisions are taken into account. Table IV.G.4–17 below shows that as a result, total technology costs are estimated to decline to $37.5 billion, or about 27 percent less than the $51.7 billion estimated when excluding these provisions:

TABLE IV.G.4–17—INCREMENTAL TECHNOLOGY OUTLAYS ($B) UNDER FINAL STANDARDS WITH FFV CREDITS

	2012	2013	2014	2015	2016	Total
Passenger Cars	2.6	3.6	4.8	6.1	7.5	24.6
Light Trucks	1.1	1.5	2.5	3.4	4.4	12.9
Combined	3.7	5.1	7.3	9.5	11.9	37.5

Because NHTSA's analysis indicated that FFV provisions will not significantly reduce fuel savings, the agency's estimate of the present value of total benefits will be $175.6 billion when discounted at a 3 percent annual rate, as Table IV.G.4–18 following reports. This estimate of total benefits is $6.9 billion, or about 3.8 percent, lower than the $182.5 billion reported previously for the analysis that excluded these provisions:

TABLE IV.G.4–18—PRESENT VALUE OF BENEFITS ($BILLION) UNDER FINAL STANDARDS WITH FFV CREDITS USING 3 PERCENT DISCOUNT RATE

	2012	2013	2014	2015	2016	Total
Passenger Cars	7.6	13.7	19.1	25.6	34.0	100.0
Light Trucks	6.4	10.4	14.6	19.8	24.4	75.6
Combined	14.0	24.1	33.7	45.4	58.4	175.6

[724] Differences in the application of diesel engines lead to differences in the incremental percentage changes in fuel consumption and carbon dioxide emissions.

Similarly, because the FFV are not expected to reduce fuel savings significantly, NHTSA estimates that the present value of total benefits will decline only slightly from its previous estimate when future fuel savings and other benefits are discounted at the higher 7 percent rate. Table IV.G.4–19 reports that the present value of benefits from requiring higher fuel economy for MY 2012–16 cars and light trucks will total $140.7 billion when discounted using a 7 percent rate, about $5.5 billion (or again, 3.8 percent) below the previous $146.2 billion estimate of total benefits when FFV credits were not permitted:

TABLE IV.G.4–19—PRESENT VALUE OF BENEFITS ($BILLION) UNDER FINAL STANDARDS WITH FFV CREDITS USING 7 PERCENT DISCOUNT RATE

	2012	2013	2014	2015	2016	Total
Passenger Cars	6.1	11.1	15.5	20.7	27.6	80.9
Light Trucks	5.0	8.2	11.5	15.6	19.3	59.7
Combined	11.2	19.3	27.0	36.4	46.9	140.7

Although the discounted present value of total benefits will be slightly lower when FFV provisions are taken into account, the agency estimates that these provisions will slightly *increase* net benefits. This occurs because the flexibility these provisions provide to manufacturers will allow them to reduce technology costs for meeting the new standards by considerably more than the reduction in the value of fuel savings and other benefits. As Table IV.G.4–20 shows, the agency estimates that the availability of FFV credits will increase net benefits from the final CAFE standards to $138.2 billion from the previously-reported estimate of $130.7 billion without those credits, or by about 5.7 percent.

TABLE IV.G.4–20—PRESENT VALUE OF NET BENEFITS ($BILLION) UNDER FINAL STANDARDS WITH FFV CREDITS USING 3% DISCOUNT RATE

	2012	2013	2014	2015	2016	Total
Passenger Cars	5.1	10.1	14.3	19.5	26.5	75.4
Light Trucks	5.3	8.8	12.1	16.4	20.0	62.7
Combined	10.4	19.0	26.5	35.9	46.5	138.2

Similarly, Table IV.G.4–21 immediately below shows that NHTSA estimates manufacturers' use of FFV credits will raise net benefits from requiring higher fuel economy for MY 2012–16 cars and light trucks to $103.2 billion if a 7 percent discount rate is applied to future benefits. This estimate is $8.7 billion—or about 9.2%—higher than the previously-reported $94.5 billion estimate of net benefits without the availability of FFV credits using that same discount rate.

TABLE IV.G.4–21—PRESENT VALUE OF NET BENEFITS ($BILLION) UNDER FINAL STANDARDS WITH FFV CREDITS USING 7% DISCOUNT RATE

	2012	2013	2014	2015	2016	Total
Passenger Cars	3.6	7.5	10.7	14.6	20.0	56.4
Light Trucks	3.9	6.6	9.1	12.3	14.9	46.8
Combined	7.5	14.1	19.7	26.9	35.0	103.2

The agency has also performed several sensitivity analyses to examine the effects of varying important assumptions that affect its estimates of benefits and costs from higher CAFE standards for MY 2012–16 cars and light trucks. We examine the sensitivity of fuel savings, total economic benefits, and technology costs with respect to the following five economic parameters:

(1) The price of gasoline: The Reference Case uses the AEO 2010 reference case estimate for the price of gasoline. In this sensitivity analysis we examine the effect of instead using the AEO 2009 high and low price forecasts.

(2) The rebound effect: The Reference Case uses a rebound effect of 10 percent to project increased miles traveled as the cost per mile driven decreases. In the sensitivity analysis, we examine the effect of instead using a 5 percent or 15 percent rebound effect.

(3) The values of CO_2 benefits: The Reference Case uses $21 per ton (in 2010 in 2007$, rising over time to $45 in 2030) to quantify the benefits of reducing CO_2 emissions and $0.17 per gallon to quantify the energy security benefits from reducing fuel consumption. In the sensitivity analysis, we examine the effect of using values of $5, and $65 per ton instead of the reference value of $21 per ton to value CO_2 benefits. These values can be translated into cents per gallon by multiplying by 0.0089,[725] giving the following values:

($5 per ton CO_2) × 0.0089 = $0.045 per gallon

[725] The molecular weight of Carbon (C) is 12, the molecular weight of Oxygen (O) is 16, thus the molecular weight of CO_2 is 44. One ton of C = 44/12 tons CO_2 = 3.67 tons CO_2. 1 gallon of gas weighs 2,819 grams, of that 2,433 grams are carbon. $1.00 CO_2 = $3.67 C and $3.67/ton * ton/1,000kg * kg/1,000g * 2,433g/gallon = (3.67 * 2,433)/1,000 * 1,000 = $0.0089/gallon.

($21 per ton CO_2) × 0.0089 = $0.187 per gallon
($35 per ton CO_2) × 0.0089 = $0.312 per gallon
($67 per ton CO_2) × 0.0089 = $0.596 per gallon

(4) Military security: The Reference Case uses $0 per gallon to quantify the military security benefits of reducing fuel consumption. In the sensitivity analysis, we examine the impact of instead using a value of 5 cents per gallon.

Varying each of these four parameters in isolation results in 9 additional economic scenarios, in addition to the Reference case. These are listed in Table IV.G.4–22 below, together with two additional scenarios that use combinations of these parameters that together produce the lowest and highest benefits.

TABLE IV.G.4–22—SENSITIVITY ANALYSES EVALUATED IN NHTSA'S FRIA

Name	Fuel price	Discount rate (percent)	Rebound effect (percent)	SCC	Military security
Reference	AEO 20210 Reference Case	3	10	$21	0¢/gal.
High Fuel Price	AEO 2009 High Price Case	3	10	21	0¢/gal.
Low Fuel Price	AEO 2009 Low Price Case	3	10	21	0¢/gal.
5% Rebound Effect	AEO 20210 Reference Case	3	5	21	0¢/gal.
15% Rebound Effect	AEO 20210 Reference Case	3	15	21	0¢/gal.
$67/ton CO_2 Value	AEO 20210 Reference Case	3	10	67	0¢/gal.
$35/ton CO_2 Value	AEO 20210 Reference Case	3	10	35	0¢/gal.
$5/ton CO_2 Value	AEO 20210 Reference Case	3	10	5	0¢/gal.
$5/ton CO_2	AEO 20210 Reference Case	3	10	5	0¢/gal.
5¢/gal Military Security Value	AEO 20210 Reference Case	3	10	21	5¢/gal.
Lowest Discounted Benefits	AEO 2009 Low Price Case	7	15	5	0¢/gal.
Highest Discounted Benefits	AEO 2009 High Price Case	3	5	67	5¢/gal.

The basic results of the sensitivity analyses were as follows:

(1) The various economic assumptions have no effect on the final passenger car and light truck standards established by this rule, because these are determined without reference to economic benefits.

(2) Varying the economic assumptions *individually* has comparatively modest impacts on fuel savings resulting from the adopted standards. The range of variation in fuel savings in response to changes in individual assumptions extends from a reduction of nearly 5 percent to an increase of that same percentage.

(3) The economic parameter with the greatest impacts on fuel savings is the magnitude of the rebound effect. Varying the rebound effect from 5 percent to 15 percent is responsible for a 4.6 percent increase and 4.6 percent reduction in fuel savings compared to the Reference results.

(4) The only other parameter that has a significant effect on fuel savings is forecast fuel prices, although its effect is complex because changes in fuel prices affect vehicle use and fuel consumption in both the baseline and under the final standards.

(5) Variation in forecast fuel prices and in the value of reducing CO_2 emissions have significant effects on the total economic benefits resulting from the final standards. Changing the fuel price forecast to AEO's High Price forecast raises estimated economic benefits by almost 40 percent, while using AEO's Low Price forecast reduces total economic benefits by only about 5 percent. Raising the value of eliminating each ton of CO_2 emissions to $67 increases total benefits by 15 percent.

(6) Varying all economic parameters simultaneously has a significant effect on total economic benefits. The combination of parameter values producing the highest benefits increases their total by slightly more than 50 percent, while that producing the lowest benefits reduces their value by almost 55 percent. However, varying these parameters in combination has less significant effects on other measures; for example, the high- and low-benefit combinations of parameter values raise or lower fuel savings and technology costs by only about 5 percent.

For more detailed information regarding NHTSA's sensitivity analyses for this final rule, please see Chapter X of NHTSA's FRIA.

5. How would these final standards impact vehicle sales?

The effect of this rule on sales of new vehicles depends partly on how potential buyers evaluate and respond to its effects on vehicle prices and fuel economy. The rule will make new cars and light trucks more expensive, as manufacturers attempt to recover their costs for complying with the rule by raising vehicle prices, which by itself would discourage sales. At the same time, the rule will require manufacturers to improve the fuel economy of at least some of their models, which will lower their operating costs.

However, this rule will *not* change the way that potential buyers evaluate improved fuel economy. If some consumers find it difficult to estimate the value of future fuel savings and correctly compare it with the increased cost of purchasing higher fuel economy (possibilities discussed below in Section IV.G.6)—or if they simply have low values of saving fuel—this rule will not change that situation, and they are unlikely to purchase the more fuel-efficient models that manufacturers offer. To the extent that other consumers more completely or correctly account for the value of fuel savings and the costs of acquiring higher fuel economy in their purchasing decisions, they will also continue to do so, and they are likely to view models with improved fuel economy as more attractive purchases than currently available models. The effect of the rule on sales of new vehicles will depend on which form of behavior is more widespread.

In general we would expect that the net effect of this rule would be to reduce sales of new vehicles or leave them unchanged. If consumers are satisfied with the combinations of fuel economy levels and prices that current models offer, we would expect some to decide that the higher prices of those models no longer justify purchasing them, even though they offer higher fuel economy. Other potential buyers may decide to purchase the same vehicle they would have before the rule took effect, or to adjust their purchases in favor of models offering other attributes. Thus sales of new models would decline,

regardless of whether "consumer-side" failures in the market for fuel economy currently lead buyers to under-invest in fuel economy. However, if there is some market failure on the producer or supply side that currently inhibits manufacturers from offering increases in fuel economy that would increase their profits—for example, if producers have underestimated the demand for fuel economy, or do not compete vigorously to provide as much as buyers would prefer—then the new standards would make vehicles more attractive to many buyers, and their sales should increase (potential explanations for such producer market failures are discussed in Section IV.G.6 below).

NHTSA examined the potential impact of higher vehicle prices on sales on an industry-wide basis for passenger cars and light trucks separately. We note that the analysis conducted for this rule does not have the precision to examine effects on individual manufacturers or different vehicle classes. The methodology NHTSA used for estimating the impact on vehicle sales in effect assumes that the latter situation will prevail; although it is relatively straightforward, it relies on a number of simplifying assumptions.

There is a broad consensus in the economic literature that the price elasticity for demand for automobiles is approximately −1.0.[726] Thus, every one percent increase in the price of the vehicle would reduce sales by one percent. Elasticity estimates assume no perceived change in the quality of the product. However, in this case, vehicle price increases result from adding technologies that improve fuel economy. If consumers did not value improved fuel economy at all, and considered nothing but the increase in price in their purchase decisions, then the estimated impact on sales from price elasticity could be applied directly. However, NHTSA believes that consumers do value improved fuel economy, because it reduces the operating cost of the vehicles. NHTSA also believes that consumers consider other factors that affect their costs and have included these in the analysis.

The main question, however, is how much of the retail price needed to cover the technology investments to meet higher fuel economy standards will manufacturers be able to pass on to consumers. The ability of manufacturers to pass the compliance costs on to consumers depends upon how consumers value the fuel economy improvements.[727] The estimates reported below as part of NHTSA's analysis on sales impacts assume that manufacturers will be able to pass all of their costs to improve fuel economy on to consumers. To the extent that NHTSA has accurately predicted the price of gasoline and consumers reactions, and manufacturers can pass on all of the costs to consumers, then the sales and employment impact analyses are reasonable. On the other hand, if manufacturers only increase retail prices to the extent that consumers value these fuel economy improvements (*i.e.,* to the extent that they value fuel savings), then there would be no impact on sales, although manufacturers' profit levels would fall. Sales losses are predicted to occur only if consumers fail to value fuel economy improvements at least as much as they pay in higher vehicle prices. Likewise, if fuel prices rise beyond levels used in this analysis, consumer valuation of improved fuel economy could potentially increase beyond that estimated here, which could result in an increase in sales levels.

To estimate the average value consumers place on fuel savings at the time of purchase, NHTSA assumes that the average purchaser considers the fuel savings they would receive over a 5 year time frame. NHTSA chose 5 years because this is the average length of time of a financing agreement.[728] The present values of these savings were calculated using a 3 percent discount rate. NHTSA used a fuel price forecast that included taxes, because this is what consumers must pay. Fuel savings were calculated over the first 5 years and discounted back to a present value.

NHTSA believes that consumers may consider several other factors over the 5 year horizon when contemplating the purchase of a new vehicle. NHTSA added these factors into the calculation to represent how an increase in technology costs might affect consumers' buying considerations.

First, consumers might consider the sales taxes they have to pay at the time of purchasing the vehicle. NHTSA took sales taxes in 2007 by state and weighted them by population by state to determine a national weighted-average sales tax of 5.5 percent.

Second, NHTSA considered insurance costs over the 5 year period. More expensive vehicles will require more expensive collision and comprehensive (*e.g.,* theft) car insurance. The increase in insurance costs is estimated from the average value of collision plus comprehensive insurance as a proportion of average new vehicle price. Collision plus comprehensive insurance is the portion of insurance costs that depend on vehicle value. The Insurance Information Institute provides the average value of collision plus comprehensive insurance in 2006 as $448.[729] This is compared to an average price for light vehicles of $24,033 for 2006.[730] Average prices and estimated sales volumes are needed because price elasticity is an estimate of how a percent increase in price affects the percent decrease in sales.

Dividing the insurance cost by the average price of a new vehicle gives the proportion of comprehensive plus collision insurance as 1.86 percent of the price of a vehicle. If we assume that this premium is proportional to the new vehicle price, it represents about 1.86 percent of the new vehicle price and insurance is paid each year for the five year period we are considering for payback. Discounting that stream of insurance costs back to present value indicates that the present value of the component of insurance costs that vary with vehicle price is equal to 8.5 percent of the vehicle's price at a 3 percent discount rate.

Third, NHTSA considered that 70 percent of new vehicle purchasers take out loans to finance their purchase. The average new vehicle loan is for 5 years at a 6 percent rate.[731] At these terms, the average person taking a loan will pay 16 percent more for their vehicle over the 5 years than a consumer paying cash for

[726] Kleit, A.N. (1990). "The Effect of Annual Changes in Automobile Fuel Economy Standards," *Journal of Regulatory Economics,* vol. 2, pp 151–172 (Docket EPA–HQ–OAR–2009–0472–0015); Bordley, R. (1994). "An Overlapping Choice Set Model of Automotive Price Elasticities," *Transportation Research B,* vol 28B, no 6, pp 401–408 (Docket NHTSA–2009–0059–0153); McCarthy, P.S. (1996). "Market Price and Income Elasticities of New Vehicle Demands," *The Review of Economics and Statistics,* vol. LXXVII, no. 3, pp. 543–547 (Docket NHTSA–2009–0059–0039).

[727] Gron, Ann and Swenson, Deborah, 2000, "Cost Pass-Through in the U.S. Automobile Market," *The Review of Economics and Statistics,* 82: 316–324. (Docket EPA–HQ–OAR–2009–0472–0007).

[728] National average financing terms for automobile loans are available from the Board of Governors of the Federal Reserve System G.19 "Consumer Finance" release. *See http://www.federalreserve.gov/releases/g19/* (last accessed February 26, 2010).

[729] Insurance Information Institute, 2008, "Average Expenditures for Auto Insurance By State, 2005–2006." *Available at http://www.iii.org/media/facts/statsbyissue/auto/* (last accessed March 15, 2010).

[730] $29,678/$26,201 = 1.1327 * $22,651 = $25,657 average price for light trucks. In 2006, passenger cars were 54 percent of the on-road fleet and light trucks were 46 percent of the on-road fleet, resulting in an average light vehicle price for 2006 of $24,033.

[731] New car loan rates in 2007 averaged about 7.8 percent at commercial banks and 4.5 percent at auto finance companies, so their average is close to 7 percent.

the vehicle at the time of purchase.[732] Discounting the additional 3.2 percent (16 percent/5 years) per year over the 5 years using a 3 percent mid-year discount rate[733] results in a discounted present value of 14.87 percent higher for those taking a loan. Multiplying that by the 70 percent of consumers who take out a loan means that the average consumer would pay 10.2 percent more than the retail price for loans the consumer discounted at a 3 percent discount rate.

Fourth, NHTSA considered the residual value (or resale value) of the vehicle after 5 years and expressed this as a percentage of the new vehicle price. In other words, if the price of the vehicle increases due to fuel economy technologies, the resale value of the vehicle will go up proportionately. The average resale price of a vehicle after 5 years is about 35 percent of the original purchase price.[734] Discounting the residual value back 5 years using a 3 percent discount rate (35 percent * .8755) gives an effective residual value at new of 30.6 percent.

NHTSA then adds these four factors together. At a 3 percent discount rate, the consumer considers she could get 30.6 percent back upon resale in 5 years, but will pay 5.5 percent more for taxes, 8.5 percent more in insurance, and 10.2 percent more for loans, results in a 6.48 percent return on the increase in price for fuel economy technology. Thus, the increase in price per vehicle is multiplied by 0.9352 (1 − 0.0648) before subtracting the fuel savings to determine the overall net consumer valuation of the increase of costs on her purchase decision.

The following table shows the estimated impact on sales for passenger cars, light trucks, and both combined for the final standards. For all model years except MY 2012, NHTSA anticipates an increase in sales, based on consumers valuing the improvement in fuel economy more than the increase in price.

TABLE IV.G.5–1—POTENTIAL IMPACT ON SALES, PASSENGER CARS AND LIGHT TRUCKS, AND COMBINED

	MY 2012	MY 2013	MY 2014	MY 2015	MY 2016
Passenger Cars	−65,202	46,801	103,422	168,334	227,039
Light Trucks	48,561	106,658	139,893	171,920	213,868
Combined	−16,641	153,459	243,315	340,255	440,907

The estimates provided in the tables above are meant to be illustrative rather than a definitive prediction. When viewed at the industry-wide level, they give a general indication of the potential impact on vehicle sales. As shown below, the overall impact is positive and growing over time for both cars and trucks. Because the fuel savings associated with this rule are expected to exceed the technology costs, the effective prices of vehicles (the adjusted increase in technology cost less the fuel savings over five years) to consumers will fall, and consumers will buy more new vehicles. As a result, the lower net cost of the vehicles is projected to lead to an increase in sales for both cars and trucks.

As discussed above, this result depends on the assumption that more fuel efficient vehicles yielding net consumer benefits over their first five years would not otherwise be offered, due to market failures on the part of vehicle manufacturers. However, vehicle models that achieve the fuel economy targets prescribed by today's rulemaking are already available, and consumers do not currently purchase a combination of them that meets the fuel economy levels this rule requires. This suggests that the rule may not result in an increase in vehicle sales, because it does not alter how consumers currently make decisions about which models to purchase. In addition, this analysis has not accounted for a number of factors that might affect consumer vehicle purchases, such as changing market conditions, changes in vehicle characteristics that might accompany improvements in fuel economy, or consumers considering a different "payback period" for their fuel economy purchases. If consumers use a shorter payback period, sales will increase by less than estimated here, and might even decline, while if consumers use longer payback periods, the increase in sales is likely to be larger than reported. In addition, because this is an aggregate analysis some individual consumers (including those who drive less than estimated here) will receive lower net benefits from the increase n fuel economy this rule requires, while others (who drive more than estimated here) will realize even greater savings. These complications—which have not been taken into account in our analysis—add considerable uncertainty to our estimates of changes in vehicle sales resulting from this rule.

6. Potential Unquantified Consumer Welfare Impacts of the Final Standards

The underlying goal of the CAFE and GHG standards is to increase social welfare, in the broadest sense, and as shown in earlier sections, NHTSA projects that the MY 2012–2016 CAFE standards will yield large net social benefits. In its net benefits analysis, NHTSA made every attempt to include all of the costs and benefits that could be identified and quantified.

It is important to highlight several features of the rulemaking analysis that NHTSA believes gives high confidence to its conclusion that there are large net social benefits from these standards. First, the agencies adopted footprint-based standards in large part so that the full range of vehicle choices in the marketplace could be maintained. Second, the agencies performed a rigorous technological feasibility, cost, and leadtime analysis that showed that the standards could be met while maintaining current levels of other vehicle attributes such as safety, utility, and performance. Third, widespread automaker support for the standards, in conjunction with the future product plans that have been provided by automakers to the agencies and recent industry announcements on new product offerings, provides further indication that the standards can be met while retaining the full spectrum of vehicle choices.

Notwithstanding these points, and its high degree of confidence that the benefits amply justify the costs, NHTSA recognizes the possibility of consumer welfare impacts that are not accounted for in its analysis of benefits and costs

[732] Based on *http://www.bankrate.com* auto loan calculator for a 5 year loan at 6 percent.

[733] For a 3 percent discount rate, the summation of 3.2 percent × 0.9853 in year one, 3.2 × 0.9566 in year two, 3.2 × 0.9288 in year three, 3.2 × 0.9017 in year 4, and 3.2 × 0.8755 in year five.

[734] Consumer Reports, August 2008, "What That Car Really Costs to Own." *Available at http://www.consumerreports.org/cro/cars/pricing/what-that-car-really-costs-to-own-4-08/overview/what-that-car-really-costs-to-own-ov.htm* (last accessed February 26, 2010).

from higher CAFE standards. The agencies received public comments expressing diverging views on this issue. The majority of commenters suggested that potential losses in welfare from requiring higher fuel economy were unlikely to be a significant concern, because of the many imperfections in the market for fuel economy. In contrast, other comments suggested that potential unidentified and unquantified consumer welfare losses could be large. Acknowledging the comments, the FRIA provides a sensitivity analysis showing how various levels of unidentified consumer welfare losses would affect the projected net social benefits from the CAFE standards established by this final rule.

There are two viewpoints for evaluating the costs and benefits of the increase in CAFE standards: The private perspective of vehicle buyers themselves on the higher fuel economy levels that the rule would require, and the economy-wide or "social" perspective on the costs and benefits of requiring higher fuel economy. It is important, in short, to distinguish between costs and benefits that are "private" and costs and benefits that are "social." The agency's analysis of benefits and costs from requiring higher fuel efficiency, presented above, includes several categories of benefits ("social benefits") that are not limited to automobile purchasers and that extend throughout the U.S. economy, such as reductions in the energy security costs associated with U.S. petroleum imports and in the economic damages expected to result from climate change. In contrast, other categories of benefits—principally the economic value of future fuel savings projected to result from higher fuel economy—will be experienced exclusively by the initial purchasers and subsequent owners of vehicle models whose fuel economy manufacturers elect to improve as part of their strategies for complying with higher CAFE standards ("private benefits").

Although the economy-wide or "social" benefits from requiring higher fuel economy represent an important share of the total economic benefits from raising CAFE standards, NHTSA estimates that benefits *to vehicle buyers themselves* will significantly exceed the costs of complying with the stricter fuel economy standards this rule establishes, as shown above. Since the agency also assumes that the costs of new technologies manufacturers will employ to improve fuel economy will ultimately be shifted to vehicle buyers in the form of higher purchase prices, NHTSA concludes that the benefits to vehicle buyers from requiring higher fuel efficiency will far outweigh the costs they will be required to pay to obtain it. However, this raises the question of why current purchasing patterns do not already result in higher average fuel economy, and why stricter fuel efficiency standards should be necessary to achieve that goal.

As an illustration, Table IV.G.6–1 reports the agency's estimates of the average lifetime values of fuel savings for MY 2012–2016 passenger cars and light trucks calculated using future retail fuel prices, which are those likely to be used by vehicle buyers to project the value of fuel savings they expect from higher fuel economy. The table compares NHTSA's estimates of the average lifetime value of fuel savings for cars and light trucks to the price increases it projects to result as manufacturers attempt to recover their costs for complying with increased CAFE standards for those model years by increasing vehicle sales prices. As the table shows, the agency's estimates of the present value of lifetime fuel savings (discounted using the OMB-recommended 3% rate) substantially outweigh projected vehicle price increases for both cars and light trucks in every model year, even under the assumption that all of manufacturers' technology outlays are passed on to buyers in the form of higher selling prices for new cars and light trucks. By model year 2016, NHTSA projects that average lifetime fuel savings will exceed the average price increase by more than $2,000 for cars, and by more than $2,700 for light trucks.

TABLE IV.G.6–1—VALUE OF LIFETIME FUEL SAVINGS VS. VEHICLE PRICE INCREASES

Fleet	Measure	Model year				
		2012	2013	2014	2015	2016
Passenger Cars ..	Value of Fuel Savings	$759	$1,349	$1,914	$2,480	$2,932
	Average Price Increase	505	573	690	799	907
	Difference	255	897	1,264	1,680	2,025
Light Trucks	Value of Fuel Savings	828	1,634	2,277	2,887	3,700
	Average Price Increase	322	416	621	752	961
	Difference	506	1,218	1,656	2,135	2,739

The comparisons above immediately raise the question of why current vehicle purchasing patterns do not already result in average fuel economy levels approaching those that this rule would require, and why stricter CAFE standards should be necessary to increase the fuel economy of new cars and light trucks. They also raise the question of why manufacturers do not elect to provide higher fuel economy even in the absence of increases in CAFE standards, since the comparisons in Table IV.G.6–1 suggest that doing so would increase the value of many new vehicle models by far more than it would raise the cost of producing them (and thus raise their purchase prices), thus presumably increasing sales of new vehicles. More specifically, why would potential buyers of new vehicles hesitate to make investments in higher fuel economy that would produce the substantial economic returns illustrated by the comparisons presented in Table IV.G.6–1? And why would manufacturers voluntarily forego opportunities to increase the attractiveness, value, and competitive positioning of their car and light truck models by improving their fuel economy?

The majority of comments received on this topic answered these questions by pointing out many reasons why the market for vehicle fuel economy does not appear to work perfectly, and accordingly, that properly designed CAFE standards would be expected to increase consumer welfare. Some of these imperfections might stem from standard market failures (such as an absence of adequate information on the part of consumers); some of them might involve findings in behavioral

economics (including, for example, a lack of sufficient consumer attention to long-term savings, or a lack of salience, to consumers at the time of purchase, of relevant benefits, including fuel and time savings). Both theoretical and empirical research suggests that many consumers do not make energy-efficient investments even when those investments would pay off in the relatively short-term.[735] This research is in line with related findings that consumers may underweigh benefits and costs that are less salient or that will be realized only in the future.[736]

Existing work provides support for the agency's conclusion that the benefits buyers will receive from requiring manufacturers to increase fuel economy far outweigh the costs they will pay to acquire those benefits, by identifying aspects of normal behavior that may explain buyers' current reluctance to purchase vehicles whose higher fuel economy appears to offer an attractive economic return. For example, consumers' understandable aversion to the prospect of losses ("loss aversion") may produce an exaggerated sense of uncertainty about the value of future fuel savings, making consumers reluctant to purchase a more fuel-efficient vehicle seem unattractive, even when doing so *is* likely to be a sound economic decision. Compare the finding in Greene et al. (2009) to the effect that the expected net present value of increasing the fuel economy of a passenger car from 28 to 35 miles per gallon falls from $405 when calculated using standard net present value calculations, to nearly zero when uncertainty regarding future cost savings is taken into account.[737]

The well-known finding that as gas prices rise, consumers show more willingness to pay for fuel-efficient vehicles is not inconsistent with the possibility that many consumers undervalue gasoline costs and fuel economy at the time of purchase. In ordinary circumstances, such costs may be a relatively "shrouded" attribute in consumers' decisions, in part because the savings are cumulative and extend over a significant period of time. This claim fits well with recent findings to the effect that many consumers are willing to pay less than $1 upfront to obtain a $1 benefit reduction in discounted gasoline costs.[738]

Some research suggests that the consumers' apparent unwillingness to purchase more fuel efficient vehicles stems from their inability to value future fuel savings correctly. For example, Larrick and Soll (2008) find evidence that consumers do not understand how to translate changes in fuel economy, which is denominated in miles per gallon, into resulting changes in fuel consumption, measured in gallons per time period.[739] Sanstad and Howarth (1994) argue that consumers resort to imprecise but convenient rules of thumb to compare vehicles that offer different fuel economy ratings, and that this behavior can cause many buyers to underestimate the value of fuel savings, particularly from significant increases in fuel economy.[740] If the behavior identified in these studies is widespread, then the agency's estimates suggesting that the benefits to vehicle owners from requiring higher fuel economy significantly exceed the costs of providing it are indeed likely to be correct.

Another possible reconciliation of the agency's claim that the *average* vehicle buyer will experience large fuel savings from the higher CAFE standards this rule establishes with the fact that the *average* fuel economy of vehicles currently purchased falls well short of the new standards is that the values of future savings from higher fuel economy vary widely across consumers. As an illustration, one recent review of consumers' willingness to pay for improved fuel economy found estimates that varied from less than 1% to almost ten times the present value of the resulting fuel savings when those are discounted at 7% over the vehicle's expected lifetime.[741] The wide variation in these estimates undoubtedly reflects methodological and measurement differences among the studies surveyed. However, it may also reveal that the expected savings from purchasing a vehicle with higher fuel economy vary widely among individuals, because they travel different amounts, have different driving styles, or simply have varying expectations about future fuel prices.

These differences reflect the possibility that many buyers with high valuations of increased fuel economy *already* purchase vehicle models that offer it, while those with lower values of fuel economy emphasize other vehicle attributes in their purchasing decisions. A related possibility is that because the effects of differing fuel economy levels are relatively modest when compared to those provided by other, more prominent features of new vehicles—passenger and cargo-carrying capacity, performance, safety, etc.—it is simply not in many shoppers' interest to spend the time and effort necessary to determine the economic value of higher fuel economy, attempt to isolate the component of a new vehicle's selling price that is related to its fuel economy, and compare these two. (This possibility is consistent with the view that fuel economy is a relatively "shrouded" attribute.) In either case, the agency's estimates of the *average* value of fuel savings that will result from requiring cars and light trucks to achieve higher fuel economy may be correct, but those savings may not be large enough to lead a sufficient number of buyers to push for vehicles with higher fuel economy to increase average fuel economy from its current levels.

Defects in the market for cars and light trucks could also lead manufacturers to undersupply fuel economy, even in cases where many buyers were willing to pay the increased prices necessary to provide it.

To be sure, the relevant market, taken as a whole, has a great deal of competition. But even in those circumstances, there may not such competition with respect to all vehicle attributes. Incomplete or "asymmetric" access to information on vehicle attributes such as fuel economy—whereby manufacturers of new vehicles or sellers of used cars and light trucks

[735] Jaffe, A. B., and Stavins, R. N. (1994). The Energy Paradox and the Diffusion of Conservation Technology. Resource and Energy Economics, 16(2); see Hunt Alcott and Nathan Wozny, Gasoline Prices, Fuel Economy, and the Energy Paradox (2010, available at *http://web.mit.edu/allcott/www/Allcott%20and%20Wozny%202010%20-%20Gasoline%20Prices,%20Fuel%20Economy,%20and%20the%20Energy%20Paradox.pdf*.

[736] Hossain, Janjim, and John Morgan (2009). " * * * Plus Shipping and Handling: Revenue (Non)Equivalence in Field Experiments on eBay," Advances in Economic Analysis and Policy vol. 6; Barber, Brad, Terrence Odean, and Lu Zheng (2005). "Out of Sight, Out of Mind: The Effects of Expenses on Mutual Fund Flows," Journal of Business vol. 78, no. 6, pp. 2095–2020.

[737] Greene, D., J. German, and M. Delucchi (2009). "Fuel Economy: The Case for Market Failure" in Reducing Climate Impacts in the Transportation Sector, Sperling, D., and J. Cannon, eds. Springer Science. Surprisingly, the authors find that uncertainty regarding the future price of gasoline appears to be less important than uncertainty surrounding the expected lifetimes of new vehicles. (Docket NHTSA–2009–0059–0154).

[738] *See* Alcott and Wozny.

[739] Larrick, R. P., and J.B. Soll (2008). "The MPG illusion." *Science* 320: 1593–1594.

[740] Sanstad, A., and R. Howarth (1994). " 'Normal' Markets, Market Imperfections, and Energy Efficiency." Energy Policy 22(10): 811–818.

[741] Greene, David L., "How Consumers Value Fuel Economy: A Literature Review," Draft report to U.S. Environmental Protection Agency, Oak Ridge National Laboratory, December 29, 2009; *see* Table 10, p. 37.

See also David Greene and Jin-Tan Liu (1988). "Automotive Fuel Economy Improvements and Consumers' Surplus." Transportation Research Part A 22A(3): 203–218 (Docket EPA–HQ–OAR–2009–0472–0045). The study actually calculated the willingness to pay for reduced vehicle operating costs, of which vehicle fuel economy is a major component.

have more complete knowledge of the value of purchasing higher fuel economy, than do potential buyers—may also prevents sellers of new or used vehicles from capturing its full value. In this situation, the level of fuel efficiency provided in the markets for new or used vehicles might remain persistently lower than that demanded by potential buyers (at least if they are well-informed).

It is also possible that deliberate decisions by manufacturers of cars and light trucks, rather than constraints on the combinations of fuel economy, carrying capacity, and performance that manufacturers can offer using current technologies, limit the range of fuel economy available to buyers within individual vehicle market segments, such as full-size automobiles, small SUVs, or minivans. As an illustration, once a potential buyer has decided to purchase a minivan, the range of fuel economy among current models extends only from 18 to 24 mpg.[742] Manufacturers might make such decisions if they underestimate the premiums that shoppers in certain market segments are willing to pay for more fuel-efficient versions of the vehicle models they currently offer to prospective buyers within those segments. If this occurs, manufacturers may fail to supply levels of fuel efficiency as high as those buyers are willing to pay for, and the average fuel efficiency of their entire new vehicle fleets could remain below the levels that potential buyers demand and are willing to pay for. (Of course this possibility is most realistic if it is also assumed that buyers are imperfectly informed or if fuel economy savings are not sufficiently salient.) However, other commenters suggested that, if one assumes a perfectly functioning market, there must be unidentified consumer welfare losses that could offset the private fuel savings that consumers are currently foregoing.

One explanation for this apparent paradox is that NHTSA's estimates of benefits and costs from requiring manufacturers to improve the fuel efficiency of their vehicle models do not match potential vehicle buyers' assessment of the likely benefits and costs from requiring higher fuel efficiency. This could occur because the agency's underlying assumptions about some of the factors that affect the value of fuel savings differ from those made by potential buyers, because NHTSA has used different estimates for some components of the benefits from saving fuel than do buyers, or because the agency has failed to account for some potential costs of achieving higher fuel economy.

For example, buyers may not value increased fuel economy as highly as the agencies' calculations suggest, because they have shorter time horizons than the full vehicle lifetimes assumed by NHTSA and EPA, or because, when buying vehicles, they discount future fuel future savings using higher rates than those prescribed by OMB for evaluating Federal regulations. Potential buyers may also anticipate lower fuel prices in the future than those forecast by the Energy Information Administration, or may expect larger differences between vehicles rated and actual on-road MPG levels than the agencies' estimate.

To illustrate the first of these possibilities, Table IV.G.6–2 shows the effect of differing assumptions about vehicle buyers' time horizons for assessing the value of future fuel savings. Specifically, the table compares the average value of fuel savings from purchasing a MY 2016 car or light truck when fuel savings are evaluated over different time horizons to the estimated increase in its price. This table shows that as reported previously in Table IV.G.6–2, when fuel savings are evaluated over the entire expected lifetime of a MY 2016 car (approximately 14 years) or light truck (about 16 years), their discounted present value (using the OMB-recommended 3% discount rate) lifetime fuel savings exceeds the estimated average price increase by more than $2,000 for cars and by more than $2,700 for light trucks.

If buyers are instead assumed to consider fuel savings over a 10-year time horizon, however, the present value of fuel savings exceeds the projected price increase for a MY 2016 car by about $1,300, and by somewhat more than $1,500 for a MY 2016 light truck. Finally, Table VI.G.6–2 shows that under the assumption that buyers consider fuel savings only over the length of time for which they typically finance new car purchases (slightly more than 5 years during 2009), the value of fuel savings exceeds the estimated increase in the price of a MY 2016 car by only about $350, and the corresponding difference is reduced to slightly more than $500 for a MY 2016 light truck.

TABLE IV.G.6–2—VALUE OF FUEL SAVINGS VS. VEHICLE PRICE INCREASES WITH ALTERNATIVE ASSUMPTIONS ABOUT VEHICLE BUYER TIME HORIZONS

Vehicle	Measure	Value over alternative time horizons		
		Expected lifetime [743]	10 years	Average loan term [744]
MY 2016 Passenger Car	Fuel Savings	$2,932	$2,180	$1,254
	Price Increase	907	907	907
	Difference	2,025	1,273	347
MY 2016 Light Truck	Fuel Savings	3,700	2,508	1,484
	Price Increase	961	961	961
	Difference	2,739	1,547	523

Potential vehicle buyers may also discount future fuel future savings using higher rates than those typically used to evaluate Federal regulations. OMB guidance prescribes that future benefits and costs of regulations that mainly

[742] This is the range of combined city and highway fuel economy levels from lowest (Toyota Siena 4WD) to highest (Mazda 5) available for model year 2010; *http://www.fueleconomy.gov/feg/bestworstEPAtrucks.htm* (last accessed February 15, 2010).

[743] Expected lifetimes are approximately 14 years for cars and 16 years for light trucks.

[744] Average term on new vehicle loans made by auto finance companies during 2009 was 62 months; *See* Board of Governors of the Federal Reserve System, Federal Reserve Statistical Release G.19, Consumer Credit. *Available at http://www.federalreserve.gov/releases/g19/Current* (last accessed March 1, 2010).

affect private consumption decisions, as will be the case if manufacturers' costs for complying with higher fuel economy standards are passed on to vehicle buyers, should be discounted using a consumption rate of time preference.[745] OMB estimates that savers currently discount future consumption at an average real or inflation-adjusted rate of about 3 percent when they face little risk about its likely level, which makes it a reasonable estimate of the consumption rate of time preference. However, vehicle buyers may view the value of future fuel savings that results from purchasing a vehicle with higher fuel economy as risky or uncertain, or they may instead discount future consumption at rates reflecting their costs for financing the higher capital outlays required to purchase more fuel-efficient models. In either case, they may discount future fuel savings at rates well above the 3% assumed in NHTSA's evaluation in their purchase decisions.

Table IV.G.6–3 shows the effects of higher discount rates on vehicle buyers' evaluation of the fuel savings projected to result from the CAFE standards established by this rule, again using MY 2016 passenger cars and light trucks as an example. As Table IV.G.6–1 showed previously, average future fuel savings discounted at the OMB 3% consumer rate exceed the agency's estimated price increases by more than $2,000 for MY 2016 passenger cars and by more than $2,700 for MY 2016 light trucks. If vehicle buyers instead discount future fuel savings at the average new-car loan rate during 2009 (6.7%), however, these differences decline to slightly more than $1,400 for cars and $1,900 for light trucks, as Table IV.G.6–3 illustrates.

This is a potentially plausible alternative assumption, because buyers are likely to finance the increases in purchase prices resulting from compliance with higher CAFE standards as part of the process of financing the vehicle purchase itself. Finally, as the table also shows, discounting future fuel savings using a consumer credit card rate (which averaged 13.4% during 2009) reduces these differences to less than $800 for a MY 2016 passenger car and less than $1,100 for the typical MY 2016 light truck. Note, however, that even at these higher discount rates, the table shows that the private net benefits from purchasing a vehicle with the average level of fuel economy this rule requires remains large.

TABLE IV.G.6–3—VALUE OF FUEL SAVINGS VS. VEHICLE PRICE INCREASES WITH ALTERNATIVE ASSUMPTIONS ABOUT CONSUMER DISCOUNT RATES

Vehicle	Measure	Value over alternative time horizons			
		OMB consumer rate (3%)	New car loan rate (6.7%)[746]	OMB investment rate (7%)	Consumer credit card rate (13.4%)[747]
MY 2016 Passenger Car	Fuel Savings	$2,932	$2,336	$2,300	$1,669
	Price Increase	907	907	907	907
	Difference	2,025	1,429	1,393	762
MY 2016 Light Truck	Fuel Savings	3,700	2,884	2,836	2,030
	Price Increase	961	961	961	961
	Difference	2,739	1,923	1,875	1,069

Combinations of a shorter time horizon and a higher discount rate could further reduce or even eliminate the difference between the value of fuel savings and the agency's estimates of increases in vehicle prices. One plausible combination would be for buyers to discount fuel savings over the term of a new car loan, using the interest rate on that loan as a discount rate. Doing so would reduce the amount by which future fuel savings exceed the estimated increase in the prices of MY 2016 vehicles to about $340 for passenger cars and $570 for light trucks. Some evidence also suggests directly that vehicle buyers may employ combinations of higher discount rates and shorter time horizons for their purchase decisions; for example, consumers surveyed by Kubik (2006) reported that fuel savings would have to be adequate to pay back the additional purchase price of a more fuel-efficient vehicle in less than 3 years to persuade a typical buyer to purchase it.[748] As these comparisons and evidence illustrate, reasonable alternative assumptions about how consumers might evaluate the major benefit from requiring higher fuel economy can significantly affect the benefits they expect to receive when they decide to purchase a new vehicle.

Imaginable combinations of shorter time horizons, higher discount rates, and lower expectations about future fuel prices or annual vehicle use and fuel savings could make potential buyers hesitant or even unwilling to purchase vehicles offering the increased fuel economy levels this rule will require manufacturers to produce. At the same time, they might cause vehicle buyers' collective assessment of the aggregate benefits and costs of this rule to differ from NHTSA's estimates. If consumers' views about critical variables such as future fuel prices or the appropriate discount rate differ sufficiently from the assumptions used by the agency, some or perhaps many potential vehicle buyers might conclude that the value of fuel savings and other benefits they will experience from higher fuel economy are not sufficient to justify the increase in purchase prices they expect to pay. This would explain why their current choices among available models do not result in average fuel economy levels

[745] Office of Management and Budget, Circular A–4, "Regulatory Analysis," September 17, 2003, 33. *Available at http://www.whitehouse.gov/omb/assets/regulatory_matters_pdf/a-4.pdf* (last accessed March 1, 2010).

[746] Average rate on 48-month new vehicle loans made by commercial banks during 2009 was 6.72%; *See* Board of Governors of the Federal Reserve System, Federal Reserve Statistical Release G.19, Consumer Credit. *Available at http://www.federalreserve.gov/releases/g19/Current* (last accessed March 1, 2010).

[747] Average rate on consumer credit card accounts at commercial banks during 2009 was 13.4%; *See* Board of Governors of the Federal Reserve System, Federal Reserve Statistical Release G.19, Consumer Credit. *Available at http://www.federalreserve.gov/releases/g19/Current* (last accessed March 1, 2010).

[748] Kubik, M. (2006). Consumer Views on Transportation and Energy. Second Edition. Technical Report: National Renewable Energy Laboratory. *Available at* Docket No. NHTSA–2009–0059–0038.

approaching those this rule would require.

Another possibility is that achieving the fuel economy improvements required by stricter fuel economy standards might mean that manufacturers will forego planned future improvements in performance, carrying capacity, safety, or other features of their vehicle models that represent important sources of utility to vehicle owners. Although the specific economic values that vehicle buyers attach to individual vehicle attributes such as fuel economy, performance, passenger- and cargo-carrying capacity, and other sources of vehicles' utility are difficult to infer from their purchasing decisions and vehicle prices, changes in vehicle attributes can significantly affect the overall utility that vehicles offer to potential buyers. Foregoing future improvements in these or other highly-valued attributes could be viewed by potential buyers as an additional cost of improving fuel economy.

As indicated in its previous discussion of technology costs, NHTSA has approached this potential problem by developing cost estimates for fuel economy-improving technologies that include allowances for any additional manufacturing costs that would be necessary to maintain the reference fleet (or baseline) levels of performance, comfort, capacity, or safety of light-duty vehicle models to which those technologies are applied. In doing so, the agency followed the precedent established by the 2002 NAS Report on improving fuel economy, which estimated "constant performance and utility" costs for technologies that manufacturers could employ to increase the fuel efficiency of cars or light trucks. Although NHTSA has revised its estimates of manufacturers' costs for some technologies significantly for use in this rulemaking, these revised estimates are still intended to represent costs that would allow manufacturers to maintain the performance, safety, carrying capacity, and utility of vehicle models while improving their fuel economy. The adoption of the footprint-based standards also addresses this concern.

Finally, vehicle buyers may simply prefer the choices of vehicle models they now have available to the combinations of price, fuel economy, and other attributes that manufacturers are likely to offer when required to achieve higher overall fuel economy. If this is the case, their choices among models—and even some buyers' decisions about whether to purchase a new vehicle—will respond accordingly, and their responses to these new choices will reduce their overall welfare. Some may buy models with combinations of price, fuel efficiency, and other attributes that they consider less desirable than those they would otherwise have purchased, while others may simply postpone buying a new vehicle. The use of the footprint-based standards, the level of stringency, and the lead time this rule allows manufacturers are all intended to ensure that this does not occur. Although the potential losses in buyers' welfare associated with these responses cannot be large enough to offset the estimated value of fuel savings reported in the agencies' analyses, they might reduce the benefits from requiring manufacturers to achieve higher fuel efficiency, particularly in combination with the other possibilities outlined previously.

As the foregoing discussion suggests, the agency does not have a complete answer to the question of why the apparently large differences between its estimates of benefits from requiring higher fuel economy and the costs of supplying it do not result in higher average fuel economy for new cars and light trucks in the absence of this rule. One explanation is that NHTSA's estimates are reasonable, and that for the reasons outlined above, the market for fuel economy is not operating efficiently. NHTSA believes that the existing literature gives support for the view that because of various market failures (including behavioral factors, such as emphasis on the short-term and a lack of salience), there are likely to be substantial private gains, on net, from the rule, but it will continue to investigate new empirical literature as it becomes available.

NHTSA acknowledges the possibility that it has incorrectly characterized the impact of the CAFE standards this rule establishes on consumers. To recognize this possibility, this section presents an alternative accounting of the benefits and costs of CAFE standards for MYs 2012–2016 passenger cars and light trucks and discusses its implications. Table IV.G.6–4 displays the economic impacts of the rule as viewed from the perspective of potential buyers, and also reconciles the estimated net benefits of the rule as they are likely to be viewed by vehicle buyers with its net benefits to the economy as a whole.

As the table shows, the total benefits to vehicle buyers (line 4) consist of the value of fuel savings at retail fuel prices (line 1), the economic value of vehicle occupants' savings in refueling time (line 2), and the economic benefits from added rebound-effect driving (line 3). As the zero entries in line 5 of the table suggest, the agency's estimate of the retail value of fuel savings reported in line 1 is assumed to be correct, and no losses in consumer welfare from changes in vehicle attributes (other than those from increases in vehicle prices) are assumed to occur. Thus there is no reduction in the total private benefits to vehicle owners, so that net private benefits to vehicle buyers (line 6) are equal to total private benefits (reported previously in line 4).

As Table IV.G.6–4 also shows, the decline in fuel tax revenues (line 7) that results from reduced fuel purchases is in effect a social cost that offsets part of the benefits of fuel savings to vehicle buyers (line 1).[749] Thus the sum of lines 1 and 7 is the savings in fuel production costs that was reported previously as the value of fuel savings at pre-tax prices in the agency's usual accounting of benefits and costs. Lines 8 and 9 of Table IV.G.6–4 report the value of reductions in air pollution and climate-related externalities resulting from lower emissions during fuel production and consumption, while line 10 reports the savings in energy security externalities to the U.S. economy from reduced consumption and imports of crude petroleum and refined fuel. Line 12 reports the costs of increased congestion delays, accidents, and noise that result from additional driving due to the fuel economy rebound effect; net social benefits (line 13) is thus the sum of the change in fuel tax revenues, the reduction in environmental and energy security externalities, and increased costs from added driving.

Line 14 of Table IV.G.6–4 shows manufacturers' technology outlays for meeting higher CAFE standards for passenger cars and light trucks, which represent the principal cost of requiring higher fuel economy. The net total benefits (line 15 of the table) resulting from the rule consist of the sum of private (line 6) and external (line 13) benefits, minus technology costs (line 14); as expected, the figures reported in line 15 of the table are identical to those reported previously in the agency's customary format.

Table IV.G.6–4 highlights several important features of this rule's

[749] Strictly speaking, fuel taxes represent a transfer of resources from consumers of fuel to government agencies and not a use of economic resources. Reducing the volume of fuel purchases simply reduces the value of this transfer, and thus cannot produce a real economic cost or benefit. Representing the change in fuel tax revenues in effect as an economy-wide cost is necessary to offset the portion of fuel savings included in line 1 that represents savings in fuel tax payments by consumers. This prevents the savings in tax revenues from being counted as a benefit from the economy-wide perspective.

economic impacts. First, comparing the rule's net private (line 6) and external (line 13) benefits makes it clear that a substantial majority of the benefits from requiring higher fuel economy are experienced by vehicle buyers, with only a small share distributed throughout the remainder of the U.S. economy. In turn, the vast majority of private benefits stem from fuel savings. External benefits are small because the value of reductions in environmental and energy security externalities is almost exactly offset by the decline in fuel tax revenues and the increased costs associated with added vehicle use via the rebound effect of higher fuel economy. As a consequence, the net economic benefits of the rule mirror closely its benefits to private vehicle buyers and the technology costs for achieving higher fuel economy, again highlighting the importance of accounting for any other effects of the rule on the economic welfare of vehicle buyers.

TABLE IV.G.6–4—PRIVATE, SOCIAL, AND TOTAL BENEFITS AND COSTS OF MY 2012–16 CAFE STANDARDS: PASSENGER CARS PLUS LIGHT TRUCKS

Entry	Model year					
	2012	2013	2014	2015	2016	Total, 2012–2016
1. Value of Fuel Savings (at Retail Fuel Prices)	$10.5	$22.9	$32.9	$42.5	$52.7	$161.6
2. Savings in Refueling Time	0.7	1.4	1.9	2.5	3.0	9.4
3. Consumer Surplus from Added Driving	0.7	1.5	2.2	2.8	3.4	10.5
4. Total Private Benefits (= 1+ 2 + 3)	11.9	25.8	37.0	47.8	59.0	181.5
5. Reduction in Private Benefits	0.0	0.0	0.0	0.0	0.0	0.0
6. Net Private Benefits (= 1 + 2)	11.9	25.8	37.0	47.8	59.0	181.5
7. Change in Fuel Tax Revenues	−1.3	−2.7	−3.8	−4.8	−5.9	−18.5
8. Reduced Health Damages from Criteria Emissions	0.5	0.9	1.3	1.6	2.0	6.4
9. Reduced Climate Damages from CO_2 Emissions	0.9	2.0	2.9	3.8	4.8	14.5
10. Reduced Energy Security Externalities	0.5	1.2	1.6	2.1	2.5	8.0
11. Reduction in Externalities (= 8 + 9 + 10)	1.9	4.1	5.9	7.6	9.3	28.8
12. Increased Costs of Congestion, etc	−0.7	−1.3	−1.9	−2.4	−3.0	−9.4
13. Net Social Benefits (= 7 + 11 + 12)	0.0	0.1	0.1	0.3	0.5	1.0
14. Technology Costs	5.9	7.9	10.5	12.5	14.9	51.7
15. Net Social Benefits (= 6 + 12 − 14)	6.0	17.9	26.6	35.5	44.6	130.7

As discussed in detail previously, NHTSA believes that the aggregate benefits from this rule amply justify its aggregate costs, but it remains possible that the agency has overestimated the value of fuel savings to buyers and subsequent owners of the cars and light trucks to which higher CAFE standards will apply. It is also possible that the agency has failed to identify and value reductions in consumer welfare that could result from buyers' responses to changes in vehicle attributes that manufacturers make as part of their efforts to achieve higher fuel economy. To acknowledge these possibilities, NHTSA examines their potential impact on the rule's benefits and costs, showing the rule's economic impacts for MY 2012–16 passenger cars and light trucks under varying theoretical assumptions about the agency's potential overestimation of private benefits from higher fuel economy and the value of potential changes in other vehicle attributes. See Chapter VIII of the FRIA.

7. What other impacts (quantitative and unquantifiable) will these final standards have?

In addition to the quantified benefits and costs of fuel economy standards, the final standards will have other impacts that we have not quantified in monetary terms. The decision on whether or not to quantify a particular impact depends on several considerations:

- Does the impact exist, and can the magnitude of the impact reasonably be attributed to the outcome of this rulemaking?
- Would quantification help NHTSA and the public evaluate standards that may be set in rulemaking?
- Is the impact readily quantifiable in monetary terms? Do we know how to quantify a particular impact?
- If quantified, would the monetary impact likely be material?
- Can a quantification be derived with a sufficiently narrow range of uncertainty so that the estimate is useful?

NHTSA expects that this rulemaking will have a number of genuine, material impacts that have not been quantified due to one or more of the considerations listed above. In some cases, further research may yield estimates for future rulemakings.

Technology Forcing

The final rule will improve the fuel economy of the U.S. new vehicle fleet, but it will also increase the cost (and presumably, the price) of new passenger cars and light trucks built during MYs 2012–2016. We anticipate that the cost, scope, and duration of this rule, as well as the steadily rising standards it requires, will cause automakers and suppliers to devote increased attention to methods of improving vehicle fuel economy.

This increased attention will stimulate additional research and engineering, and we anticipate that, over time, innovative approaches to reducing the fuel consumption of light duty vehicles will emerge. Several commenters agreed. These innovative approaches may reduce the cost of the final rule in its later years, and also increase the set of feasible technologies in future years.

We have attempted to estimate the effect of learning on known technologies within the period of the rulemaking. We have not attempted to estimate the extent to which not-yet-invented technologies will appear, either within the time period of the current rulemaking or that might be available after MY 2016.

Effects on Vehicle Maintenance, Operation, and Insurance Costs

Any action that increases the cost of new vehicles will subsequently make such vehicles more costly to maintain, repair, and insure. In general, this effect can be expected to be a positive linear function of vehicle costs. The final rule raises vehicle costs by over $900 by 2016, and for some manufacturers costs will increase by $1,000–$1,800. Depending on the retail price of the

vehicle, this could represent a significant increase in the overall vehicle cost and subsequently increase insurance rates, operation costs, and maintenance costs. Comprehensive insurance costs are likely to be directly related to price increases, but liability premiums will go up by a smaller proportion because the bulk of liability coverage reflects the cost of personal injury. The impact on operation and maintenance costs is less clear, because the maintenance burden and useful life of each technology are not known. However, one of the common consequences of using more complex or innovative technologies is a decline in vehicle reliability and an increase in maintenance costs, borne, in part, by the manufacturer (through warranty costs, which are included in the indirect costs of production) and, in part by the vehicle owner. NHTSA believes that this effect is difficult to quantify for purposes of this final rule. The agency will analyze this issue further for future rulemakings to attempt to gauge its impact more completely.

Effects on Vehicle Miles Traveled (VMT)

While NHTSA has estimated the impact of the rebound effect on VMT, we have not estimated how a change in vehicle sales could impact VMT. Since the value of the fuel savings to consumers outweighs the technology costs, new vehicle sales are predicted to increase. A change in vehicle sales will have complicated and a hard-to-quantify effect on vehicle miles traveled given the rebound effect, the trade-in of older vehicles, etc. In general, overall VMT should not be significantly affected.

Effect on Composition of Passenger Car and Light Truck Sales

In addition, manufacturers, to the extent that they pass on costs to customers, may distribute these costs across their motor vehicle fleets in ways that affect the composition of sales by model. To the extent that changes in the composition of sales occur, this could affect fuel savings to some degree. However, NHTSA's view is that the scope for compositional effects is relatively small, since most vehicles will to some extent be impacted by the standards. Compositional effects might be important with respect to compliance costs for individual manufacturers, but are unlikely to be material for the rule as a whole.

NHTSA is continuing to study methods of estimating compositional effects and may be able to develop methods for use in future rulemakings.

Effects on the Used Vehicle Market

The effect of this rule on the use and scrappage of older vehicles will be related to its effects on new vehicle prices, the fuel efficiency of new vehicle models, and the total sales of new vehicles. Elsewhere in this analysis, NHTSA estimates that vehicle sales will increase. This would occur because the value of fuel savings resulting from improved fuel efficiency to the typical potential buyer of a new vehicle outweighs the average increase in new models' costs. Under these circumstances, sales of new vehicles will rise, while scrappage rates of used vehicles will increase slightly. This will cause the "turnover" of the vehicle fleet—that is, the retirement of used vehicles and their replacement by new models—to accelerate slightly, thus accentuating the anticipated effect of the rule on fleet-wide fuel consumption and CO_2 emissions. However, if potential buyers value future fuel savings resulting from the increased fuel efficiency of new models at less than the increase in their average selling price, sales of new vehicles would decline, as would the rate at which used vehicles are retired from service. This effect will slow the replacement of used vehicles by new models, and thus partly offset the anticipated effects of the proposed rules on fuel use and emissions.

Impacts of Changing Fuel Composition on Costs, Benefits, and Emissions

EPAct, as amended by EISA, creates a Renewable Fuels Standard that sets targets for greatly increased usage of renewable fuels over the next decade. The law requires fixed volumes of renewable fuels to be used—volumes that are not linked to actual usage of transportation fuels.

Ethanol and biodiesel (in the required volumes) may increase or decrease the cost of blended gasoline and diesel depending on crude oil prices and tax subsidies. The potential extra cost of renewable fuels would be borne through a cross-subsidy: The price of every gallon of blended gasoline could rise sufficiently to pay for any extra cost of renewable fuels. However, if the price of fuel increases enough, the consumer could actually realize a savings through the increased usage of renewable fuels. The final CAFE rule, by reducing total fuel consumption, could tend to increase any necessary cross-subsidy per gallon of fuel, and hence raise the market price of transportation fuels, while there would be no change in the volume or cost of renewable fuels used.

These effects are indirectly incorporated in NHTSA's analysis of the proposed CAFE rule because they are directly incorporated in EIA's projections of future gasoline and diesel prices in the Annual Energy Outlook, which incorporates in its baseline both a Renewable Fuel Standard and an increasing CAFE standard.

The net effect of incorporating an RFS then might be to slightly reduce the benefits of the rule because affected vehicles might be driven slightly less, and because they emit slightly fewer greenhouse gas emissions per gallon. In addition there might be corresponding losses from the induced reduction in VMT. All of these effects are difficult to estimate, because of uncertainty in future crude oil prices, uncertainty in future tax policy, and uncertainty about how petroleum marketers will actually comply with the RFS, but they are likely to be small, because the cumulative deviation from baseline fuel consumption induced by the final rule will itself be small.

Macroeconomic Impacts of This Rule

The final rule will have a number of consequences that may have short-run and longer-run macroeconomic effects. It is important to recognize, however, that these effects do *not* represent benefits in addition to those resulting directly from reduced fuel consumption and emissions. Instead, they represent the economic effects that occur as these direct impacts filter through the interconnected markets comprising the U.S. economy.

- Increasing the cost and quality (in the form of better fuel economy) of new passenger cars and light trucks will have ripple effects through the rest of the economy. Depending on the assumptions made, the rule could generate very small increases or declines in output.
- Reducing consumption of imported petroleum should induce an increase in long-run output.
- Decreasing the world price of oil should induce an increase in long-run output.

NHTSA has not studied the macroeconomic effects of the final rule, however a discussion of the economy-wide impacts of this rule conducted by EPA is presented in Section III.H and is included in the docket. Although economy-wide models do not capture all of the potential impacts of this rule (*e.g.,* improvements in product quality), these models can provide valuable insights on how this final rule would impact the U.S. economy in ways that extend beyond the transportation sector.

Military Expenditures

This analysis contains quantified estimates for the social cost of petroleum imports based on the risk of oil market disruption. We have not included estimates of monopsony effects or the cost of military expenditures associated with petroleum imports.

Distributional Effects

The final rule analysis provides a national-level distribution of impacts for gas price and similar variables. NHTSA also shows the effects of the EIA high and low gas price forecasts on the aggregate benefits in the sensitivity analysis. Generally, this rule has the greatest impact on those individuals who purchase vehicles. In terms of how the benefits of the rule might accrue differently for different consumers, consumers who drive more than our mean estimates for VMT will see more fuel savings, while those who drive less than our mean VMT estimates will see less fuel savings.

H. Vehicle Classification

Vehicle classification, for purposes of the CAFE program, refers to whether NHTSA considers a vehicle to be a passenger automobile or a light truck, and thus subject to either the passenger automobile or the light truck standards. As NHTSA explained in the MY 2011 rulemaking, EPCA categorizes some light 4-wheeled vehicles as passenger automobiles (cars) and the balance as non-passenger automobiles (light trucks). EPCA defines passenger automobiles as any automobile (other than an automobile capable of off-highway operation) which NHTSA decides by rule is manufactured primarily for use in the transportation of not more than 10 individuals. EPCA 501(2), 89 Stat. 901. NHTSA created regulatory definitions for passenger automobiles and light trucks, found at 49 CFR part 523, to guide the agency and manufacturers in classifying vehicles.

Under EPCA, there are two general groups of automobiles that qualify as non-passenger automobiles or light trucks: (1) Those defined by NHTSA in its regulations as other than passenger automobiles due to their having design features that indicate they were not manufactured "primarily" for transporting up to ten individuals; and (2) those expressly excluded from the passenger category by statute due to their capability for off-highway operation, regardless of whether they might have been manufactured primarily for passenger transportation.[750] NHTSA's classification rule directly tracks those two broad groups of non-passenger automobiles in subsections (a) and (b), respectively, of 49 CFR 523.5.

For the purpose of this NPRM for the MYs 2012–2016 standards, EPA agreed to use NHTSA's regulatory definitions for determining which vehicles would be subject to which CO_2 standards.

In the MY 2011 rulemaking, NHTSA took a fresh look at the regulatory definitions in light of several factors and developments: Its desire to ensure clarity in how vehicles are classified, the passage of EISA, and the Ninth Circuit's decision in *CBD* v. *NHTSA*.[751] NHTSA explained the origin of the current definitions of passenger automobiles and light trucks by tracing them back through the history of the CAFE program, and did not propose to change the definitions themselves at that time, because the agency concluded that the definitions were largely consistent with Congress' intent in separating passenger automobiles and light trucks, but also in part because the agency tentatively concluded that doing so would not lead to increased fuel savings. However, the agency tightened the definitions in § 523.5 to ensure that only vehicles that actually have 4WD will be classified as off-highway vehicles by reason of having 4WD (to prevent 2WD SUVs that also come in a 4WD "version" from qualifying automatically as "off-road capable" simply by reason of the existence of the 4WD version). It also took this action to ensure that manufacturers may only use the "greater cargo-carrying capacity" criterion of 523.5(a)(4) for cargo van-type vehicles, rather than for SUVs with removable second-row seats unless they truly have greater cargo-carrying than passenger-carrying capacity "as sold" to the first retail purchaser. NHTSA concluded that these changes increased clarity, were consistent with EPCA and EISA, and responded to the Ninth Circuit's decision with regard to vehicle classification.

However, NHTSA recognizes that manufacturers may have an incentive to classify vehicles as light trucks if the fuel economy target for light trucks with a given footprint is less stringent than the target for passenger cars with the same footprint. This is often the case given the current fleet, due to the fact that the curves are based on actual fuel economy capabilities of the vehicles to which they apply. Because of characteristics like 4WD and towing and hauling capacity (and correspondingly, although not necessarily, heavier weight), the vehicles in the current light truck fleet are generally less capable of achieving higher fuel economy levels as compared to the vehicles in the passenger car fleet. 2WD SUVs are the vehicles that could be most readily redesigned so that they can be "moved" from the passenger car to the light truck fleet. A manufacturer could do this by adding a third row of seats, for example, or boosting GVWR over 6,000 lbs for a 2WD SUV that already meets the ground clearance requirements for "off-road capability." A change like this may only be possible during a vehicle redesign, but since vehicles are redesigned, on average, every 5 years, at least some manufacturers may choose to make such changes before or during the model years covered by this rulemaking.

In the NPRM, in looking forward to model years beyond 2011 and considering how CAFE should operate in the context of the National Program and previously-received comments as requested by President Obama, NHTSA sought comment on the following potential changes to NHTSA's vehicle classification system, as well as on whether, if any of the changes were to be adopted, they should be applied to any of the model years covered by this rulemaking or whether, due to lead time concerns, they should apply only to MY 2017 and thereafter.

Reclassifying minivans and other "3-row" light trucks as passenger cars (i.e., removing 49 CFR 523.5(a)(5)):

NHTSA has received repeated comments over the course of the last several rulemakings from environmental and consumer groups regarding the classification of minivans as light trucks instead of as passenger cars. Commenters have argued that because minivans generally have three rows of seats, are built on unibody chassis, and are used primarily for transporting passengers, they should be classified as passenger cars. NHTSA did not accept these arguments in the MY 2011 final rule, due to concerns that moving minivans to the passenger car fleet would lower the fuel economy targets for those passenger cars having essentially the same footprint as the minivans, and thus lower the overall fuel average fuel economy level that the

[750] 49 U.S.C. 32901(a)(18). We note that the statute refers both to vehicles that are 4WD and to vehicles over 6,000 lbs GVWR as potential candidates for off-road capability, if they also meet the "significant feature * * * designed for off-highway operation" as defined by the Secretary. NHTSA would consider "AWD" vehicles as 4WD for purposes of this determination—they send power to all wheels of the vehicle all the time, while 4WD vehicles may only do so part of the time, which appears to make them equal candidates for off-road capability given other necessary characteristics.

[751] 538 F.3d 1172 (9th Cir. 2008).

manufacturers would need to meet. However, due to the new methodology for setting standards, the as-yet-unknown fuel-economy capabilities of future minivans and 3-row 2WD SUVs, and the unknown state of the vehicle market (particularly for MYs 2017 and beyond), NHTSA did not feel that it could say with certainty that moving these vehicles could negatively affect potential stringency levels for either passenger cars or light trucks. Thus, although such a change would not be made applicable during the MY 2012–2016 time frame, NHTSA sought comment on why the agency should or should not consider, as part of this rulemaking, reclassifying minivans (and other current light trucks that qualify as such because they have three rows of designated seating positions as standard equipment) for MYs 2017 and after.

Comments received on this issue were split between support and opposition. As perhaps expected, the Alliance, AIAM, NADA, Chrysler, Ford, and Toyota all commented in favor of maintaining 3-row vehicles as light trucks indefinitely. The Alliance and Chrysler stated that the existing definitions for light trucks are consistent with Congressional intent in EPCA and EISA, given that Congress could have changed the 3-row definition in passing EISA but did not do so. The Alliance, AIAM, and Chrysler also argued that the functional characteristics of 3-row vehicles do make them "truck-like," citing their "high load characteristics" and ability to carry cargo if their seats are stowed or removed. Ford and Toyota emphasized the need for stability in the definitions as manufacturers adjust to the recent reclassification of many 2WD SUVs from the truck to the car fleet, and the Alliance argued further that moving the 3-row vehicles to the car fleet would simply deter manufacturers from continuing to provide them, causing consumers to purchase larger full-size vans instead and resulting in less fuel savings and emissions reductions. Toyota stated further that no significant changes have occurred in the marketplace (as in, not all 2WD SUVs suddenly have 3 rows) to trigger additional reclassification beyond that required by the MY 2011 final rule. Hyundai neither supported nor objected to reclassification, but requested ample lead time for the industry if any changes are eventually made.

Other commenters favored reclassification of 3-row vehicles from the truck to the car fleet: NJ DEP expressed general support for reclassifying 3-row vehicles for MYs 2017 and beyond, while the UCSB student commenters seemed to support reclassifying these vehicles for the current rulemaking. The UCSB students stated that EPCA/EISA properly distinguishes light trucks based on their "specialized utility," either their ability to go off-road or to transport material loads, but that 3-row vehicles do not generally have such utility as sold, and are clearly primarily sold and used for transporting passengers. The UCSB students suggested that reclassifying the 3-row vehicles from the truck to the car fleet could help to ensure the anticipated levels of fuel savings by moving the fleet closer to the 67/33 fleet split assumed in the agencies' analysis for MY 2016, and stated that this would increase fuel economy over the long term. The students urged NHTSA to look at the impact on fuel savings from reclassifying these vehicles for the model years covered by the rulemaking.

In response, NHTSA did conduct such an analysis to attempt to consider the impact of moving these vehicles. As previously stated, the agency's hypothesis is that moving 3-row vehicles from the truck to the car fleet will tend to bring the achieved fuel economy levels down in both fleets—the car fleet achieved levels could theoretically fall due to the introduction of many more vehicles that are relatively heavy for their footprint and thus comparatively less fuel economy-capable, while the truck fleet achieved levels could theoretically fall due to the characteristics of the vehicles remaining in the fleet (4WDs and pickups, mainly) that are often comparatively less fuel-economy capable than 3-row vehicles, although more vehicles would be subject to the relatively more stringent passenger car standards, assuming the curves were not refit to the data.

The agency first identified which vehicles should be moved. We identified all of the 3-row vehicles in the baseline (MY 2008) fleet,[752] and then considered whether any could be properly classified as a light truck under a different provision of 49 CFR 523.5—about 40 vehicles were classifiable under § 523.5(b) as off-highway capable.

The agency then transferred those remaining 3-row vehicles from the light truck to the passenger car input sheets for the Volpe model, re-estimated the gap in stringency between the passenger car and light truck standards, shifted the curves to obtain the same overall average required fuel economy as under the final standards, and ran the model to evaluate potential impacts (in terms of costs, fuel savings, etc.) of moving these vehicles. The results of this analysis may be found in the same location on NHTSA's Web site as the results of the analysis of the final standards. In summary, moving the vehicles reduced the stringency of the passenger car standards by approximately 0.8 mpg on average for the five years of the rule, and reduced the stringency of the light truck standards by approximately 0.2 mpg on average for the five years of the rule. It also caused the gap between the car curve and the truck curve to decrease or narrow slightly, by 0.1 mpg. However, the analysis also showed that such a shift in 3-row vehicles could result in approximately 676 million fewer gallons of fuel consumed (equivalent to about 1 percent of the reduction in fuel consumption under the final standards) and 7.1 mmt fewer CO_2 emissions (equivalent to about 1 percent of the reduction in CO_2 emissions under the final standards) over the lifetime of the MYs 2012–2016 vehicles. This result is attributable to slight differences (due to rounding precision) in the overall average required fuel economy levels in MYs 2012–2014, and to the retention of the relatively high lifetime mileage accumulation (compared to "traditional" passenger cars) of the vehicles moved from the light truck fleet to the passenger car fleet.

The changes in overall costs and vehicle price did not necessarily go in the same direction for both fleets, however. Overall costs of applying technology for the passenger car fleet went up approximately $1 billion per year for each of MYs 2012–2016, while overall costs for the light truck fleet went down by an average of approximately $800 million for each year, such that the net effect was approximately $200 million additional spending on technology each year (equivalent to about 2 percent of the average increase in annual technology outlays under the final standards). Assuming manufacturers would pass that cost forward to consumers by increasing vehicle costs, vehicle prices would increase by an average of approximately $13 during MYs 2012–2016.

However, one important point to note in this comparative analysis is that, due to time constraints, the agency did not attempt to refit the respective fleet target curves or to change the intended required stringency in MY 2016 of 34.1 mpg for the combined fleets. If we had refitted curves following the same procedures described above in Section II, considering the vehicles in question, we expect that we might have obtained a somewhat steeper passenger car curve, and a somewhat flatter light truck curve.

[752] Of the 430 light trucks models in the fleet, 175 of these had 3 rows.

If so, this might have increased the gap in between portions of the passenger car and light truck curves.

NHTSA agrees with the industry commenters that some degree of stability in the passenger car and light truck definitions will assist the industry in making the transition to the stringency of the new National Program, and therefore will not reclassify 3-row vehicles to the passenger car fleet for purposes of MYs 2012–2016. Going forward, the real question is how to balance the benefits of regulatory stability against the potential benefits of greater fuel savings if reclassification is determined to lead in that direction. NHTSA believes that this question merits much further analysis before the agency can make a decision for model years beyond MY 2016, and will provide further opportunity for public comment regarding that analysis prior to finalizing any changes in the future.

Classifying "like" vehicles together: Many commenters objected in the rulemaking for the MY 2011 standards to NHTSA's regulatory separation of "like" vehicles. Industry commenters argued that it was technologically inappropriate for NHTSA to place 4WD and 2WD versions of the same SUV in separate classes. They argued that the vehicles are the same, except for their drivetrain features, thus giving them similar fuel economy improvement potential. They further argued that all SUVs should be classified as light trucks. Environmental and consumer group commenters, on the other hand, argued that 4WD SUVs and 2WD SUVs that are "off-highway capable" by virtue of a GVWR above 6,000 pounds should be classified as passenger cars, since they are primarily used to transport passengers. In the MY 2011 rulemaking, NHTSA rejected both of these sets of arguments. NHTSA concluded that 2WD SUVs that were neither "off-highway capable" nor possessed "truck-like" functional characteristics were appropriately classified as passenger cars. At the same time, NHTSA also concluded that because Congress explicitly designated vehicles with GVWRs over 6,000 pounds as "off-highway capable" (if they meet the ground clearance requirements established by the agency), NHTSA did not have authority to move these vehicles to the passenger car fleet.

With regard to the first argument, that "like" vehicles should be classified similarly (*i.e.,* that 2WD SUVs should be classified as light trucks because, besides their drivetrain, they are "like" the 4WD version that qualifies as a light truck), NHTSA continues to believe that 2WD SUVs that do not meet any part of the existing regulatory definition for light trucks should be classified as passenger cars. However, NHTSA recognizes the additional point raised by industry commenters in the MY 2011 rulemaking that manufacturers may respond to this tighter classification by ceasing to build 2WD versions of SUVs, which could reduce fuel savings. In response to that point, NHTSA stated in the MY 2011 final rule that it expects that manufacturer decisions about whether to continue building 2WD SUVs will be driven in much greater measure by consumer demand than by NHTSA's regulatory definitions. If it appears, in the course of the next several model years, that manufacturers are indeed responding to the CAFE regulatory definitions in a way that reduces overall fuel savings from expected levels, it may be appropriate for NHTSA to review this question again. NHTSA sought comment in the NPRM on how the agency might go about reviewing this question as more information about manufacturer behavior is accumulated, but no commenters really responded to this issue directly, although several cited the possibility that manufacturers might cease to build 2WD SUVs as a way of avoiding the higher passenger car curve targets in arguing that the agencies should implement backstop standards for all fleets. Since NHTSA has already stated above that it will revisit the backstop question as necessary in the future, we may as well add that we will consider the need to classify "like" vehicles together as necessary in the future.

With regard to the second argument, that NHTSA should move vehicles that qualify as "off-highway capable" from the light truck to the passenger car fleet because they are primarily used to transport passengers, NHTSA reiterates that EPCA is clear that certain vehicles are non-passenger automobiles (*i.e.,* light trucks) because of their off-highway capabilities, regardless of how they may be used day-to-day.

However, NHTSA suggested in the NPRM that it could explore additional approaches, although it cautioned that not all could be pursued on current law. Possible alternative legal regimes might include: (a) Classifying vehicles as passenger cars or light trucks based on use alone (rather than characteristics); (b) removing the regulatory distinction altogether and setting standards for the entire fleet of vehicles instead of for separate passenger car and light truck fleets; or (c) dividing the fleet into multiple categories more consistent with current vehicle fleets (*i.e.,* sedans, minivans, SUVs, pickup trucks, etc.). NHTSA sought comment on whether and why it should pursue any of these courses of action.

Some commenters (ICCT, CBD, NESCAUM) did raise the issue of removing the regulatory distinction between cars and trucks and setting standards for the entire fleet of vehicles, but those commenters did not appear to recognize the fact that EPCA/EISA expressly requires that NHTSA set separate standards for passenger cars and light trucks. As the statute is currently written, NHTSA does not believe that a single standard would be appropriate unless the observed relationship between footprint and fuel economy of the two fleets converged significantly over time. Nevertheless, NHTSA will continue to monitor the issue going forward.

Besides these issues in vehicle classification, NHTSA additionally received comments from two manufacturers on issues not raised by NHTSA in the NPRM. VW requested clarification with respect to how the agency evaluates a vehicle for off-road capability under 49 CFR 523.5(b)(2), asking the agency to measure vehicles with "active ride height management" at the "height setting representative of off-road operation if the vehicle has the capability to change ride height." NHTSA issued an interpretation to Porsche in 2004 addressing this issue, when Porsche asked whether a driver-controlled variable ride height suspension system could be used in the "off-road" ride height position to meet the suspension parameters required for an off- road classification determination.[753] Porsche argued that a vehicle should not need to satisfy the four-out-of-five criteria at all ride heights in order to be deemed capable of off-highway operation. NHTSA agreed that 523.5(b)(2) does not require a vehicle to meet four of the five criteria at *all* ride heights, but stated that a vehicle must meet four out of the five criteria in at *least one* ride height. The agency determined that it would be appropriate to measure the vehicle's running clearance with the vehicle's adjustable suspension placed in the position(s) intended for off-road operation under real-world conditions.

Thus, NHTSA clarifies that the agency would consider it appropriate to measure vehicles for off-road capability at the height setting intended for off-road operation under real-world conditions. However, we note that before this question need be asked and answered, the vehicle must first either

[753] *Available at http://isearch.nhtsa.gov/files/porschevrhs.html* (last accessed Mar. 1, 2010).

be equipped with 4WD or be rated at more than 6,000 pounds gross vehicle weight to be eligible for classification as a light truck under 49 CFR 523.5(b).

The final comment on the issue of vehicle classification was received from Honda, who recommended that deformable aero parts, such as strakes, should be excluded from the ride height measurements that determine whether a vehicle qualifies as a truck for off-road capability. The air strakes described by Honda are semi-deformable parts similar to a mud flap that can be used to improve a vehicle's aerodynamics, and thus to improve its fuel economy. Honda argued that NHTSA would deter the application of this technology if it did not agree to measure ride height with the air strakes at their most deformed state, because otherwise a vehicle so equipped would have to be classified as a passenger car and thus be faced with the more stringent standard.

In response, Honda did not provide enough information to the agency for the agency to make a decision with regard to how air strakes should be considered in measuring a vehicle for off-road capability. NHTSA personnel would prefer to directly examine a vehicle equipped with these devices before considering the issue further. The agency will defer consideration of this issue to another time, and no changes will be made in this final rule in response to this comment.

I. Compliance and Enforcement

1. Overview

NHTSA's CAFE enforcement program and the compliance flexibilities available to manufacturers are largely established by statute—unlike the CAA, EPCA and EISA are very prescriptive and leave the agency limited authority to increase the flexibilities available to manufacturers. This was intentional, however. Congress balanced the energy saving purposes of the statute against the benefits of the various flexibilities and incentives it provided and placed precise limits on those flexibilities and incentives. For example, while the Department sought authority for unlimited transfer of credits between a manufacturer's car and light truck fleets, Congress limited the extent to which a manufacturer could raise its average fuel economy for one of its classes of vehicles through credit transfer in lieu of adding more fuel saving technologies. It did not want these provisions to slow progress toward achieving greater energy conservation or other policy goals. In keeping with EPCA's focus on energy conservation, NHTSA has done its best, for example, in crafting the credit transfer and trading regulations authorized by EISA, to ensure that total fuel savings are preserved when manufacturers exercise their compliance flexibilities.

The following sections explain how NHTSA determines whether manufacturers are in compliance with the CAFE standards for each model year, and how manufacturers may address potential non-compliance situations through the use of compliance flexibilities or fine payment.

2. How does NHTSA determine compliance?

a. Manufacturer Submission of Data and CAFE Testing by EPA

NHTSA begins to determine CAFE compliance by considering pre- and mid-model year reports submitted by manufacturers pursuant to 49 CFR part 537, Automotive Fuel Economy Reports.[754] The reports for the current model year are submitted to NHTSA every December and July. As of the time of this final rule, NHTSA has received pre-model year reports from manufacturers for MY 2010, and anticipates receiving mid-model year reports for MY 2010 in July of this year. Although the reports are used for NHTSA's reference only, they help the agency, and the manufacturers who prepare them, anticipate potential compliance issues as early as possible, and help manufacturers plan compliance strategies. Currently, NHTSA receives these reports in paper form. In order to facilitate submission by manufacturers and consistent with the President's electronic government initiatives, NHTSA proposed to amend part 537 to allow for electronic submission of the pre- and mid-model year CAFE reports. The only comments addressing this proposal were from Ferrari, who supported it in the interest of efficiency, and Ford, who did not object as long as CBI was sufficiently protected. Having received no comments objecting, NHTSA is finalizing this change to part 537.

NHTSA makes its ultimate determination of manufacturers' CAFE compliance upon receiving EPA's official certified and reported CAFE data. The EPA certified data is based on vehicle testing and on final model year data submitted by manufacturers to EPA pursuant to 40 CFR 600.512, Model Year Report, no later than 90 days after the end of the calendar year. Pursuant to 49 U.S.C. 32904(e), EPA is responsible for calculating automobile manufacturers' CAFE values so that NHTSA can determine compliance with the CAFE standards. In measuring the fuel economy of passenger cars, EPA is required by EPCA[755] to use the EPA test procedures in place as of 1975 (or procedures that give comparable results), which are the city and highway tests of today, with adjustments for procedural changes that have occurred since 1975. EPA uses similar procedures for light trucks, although, as noted above, EPCA does not require it to do so.

As discussed above in Section III, a number of commenters raised the issue of whether the city and highway test procedures and the calculation are still appropriate or whether they may be outdated. Several commenters argued that the calculation should be more "real-world": For example, ACEEE stated that EPA should use a "correction factor" like the one used for the fuel economy label in the interim until test procedures can be changed, while BorgWarner, Cummins, Honeywell, MECA, and MEMA argued that EPA should change the weighting of the city and highway cycles (to more highway and less city) to reflect current American driving patterns and to avoid biasing the calculation against technologies that provide greater efficiency in highway driving than in city driving. Sierra Club *et al.* commented that the fact that EPA was proposing to allow off-cycle credits indicated that the test procedures and the calculation needed updating. Several commenters (API, James Hyde, MECA, NACAA, and NY DEC) stated that the test procedures should use more "real-world" fuel, like E–10 instead of "indolene clear." The UCSB students also had a number of comments aimed at making the test procedures more thorough and real-world. Several industry-related commenters (AIAM, Ferrari, and Ford) argued to the contrary that existing test procedures and calculations are fine for now, and that any changes would require significant lead time to allow manufacturers to adjust their plans to the new procedures.

Statutorily, the decision to change the test procedures or calculation is within EPA's discretion, so NHTSA will not attempt to answer these comments in detail, see *supra* Section III for EPA's responses. We note simply that the agency recognizes the need for lead time for the industry if test procedures were to change in the future to become more real-world, and will keep it in mind.

One notable shortcoming of the 1975 test procedure is that it does not include

[754] 49 CFR part 537 is authorized by 49 U.S.C. 32907.

[755] 49 U.S.C. 32904(c).

a provision for air conditioner usage during the test cycle. As discussed in Section III above, air conditioner usage increases the load on a vehicle's engine, reducing fuel efficiency and increasing CO_2 emissions. Since the air conditioner is not turned on during testing, equipping a vehicle model with a relatively inefficient air conditioner will not adversely affect that model's measured fuel economy, while equipping a vehicle model with a relatively efficient air conditioner will not raise that model's measured fuel economy. The fuel economy test procedures for light trucks could be amended through rulemaking to provide for air conditioner operation during testing and to take other steps for improving the accuracy and representativeness of fuel economy measurements. In the NPRM, NHTSA sought comment regarding implementing such amendments beginning in MY 2017 and also on the more immediate interim step of providing credits under 49 U.S.C. 32904(c) for light trucks equipped with relatively efficient air conditioners for MYs 2012–2016. NHTSA emphasized that modernizing the passenger car test procedures as well would not be possible under EPCA as currently written.

Comments were split as to whether the test procedure should be changed. Several manufacturers and manufacturer groups (BMW, GM, Toyota, VW, the Alliance) opposed changes to the test procedures to account for A/C usage on the grounds that any changes could create negative unintended consequences. Public Citizen also opposed changes to the test procedure, arguing that the fuel economy information presented to the consumer on the fuel economy label is already confusing, and that further changes to the light truck test procedures when there was no authority to change the passenger car test procedures would simply result in more confusion. In contrast, NJ DEP fully supported changes to the light truck test procedures beginning with MY 2017, and an individual commenter (Weber) also supported the inclusion of A/C in the test procedures to represent real-world "A/C on" time.

However, some of the same commenters—BMW, Toyota, and VW, for example—that opposed changes to the test procedure supported NHTSA allowing credits for A/C. Toyota stated that it supported anything that increased compliance flexibility, while VW emphasized that A/C credits for CAFE would help to address the fact that NHTSA's standards could end up being more stringent than EPA's for manufacturers relying heavily on A/C improvements to meet the GHG standards. NJ DEP also supported interim A/C credits for light trucks, but in contrast to VW, argued that the light truck standards would have to be made more stringent to account for those credits if they were allowed.

Other commenters (Chrysler, Daimler, Ferrari) supported interim A/C credits for light truck CAFE, but stated that such credits could simply be added to EPA's calculation of CAFE under 49 U.S.C. 32904(c) without any change in the test procedure ever being necessary. Daimler stated that the prohibition on changing the test procedure, according to legislative history, was to avoid sudden and dramatic changes and provide consistency for manufacturers in the beginning of the CAFE program, but that nothing indicated that EPA was barred from updating the way a manufacturer's fuel economy is calculated after the test procedures are followed. Daimler emphasized that EPA has broad authority in how it calculates fuel economy, and that adding credits at the end of the calculation would make CAFE more consistent with the GHG program and recognize real-world benefits not measured by the test cycle. Daimler argued that if EPA did not include A/C credits as part of the calculation, it would remove incentives to improve A/C, because those gains could not be used for CAFE compliance and NHTSA has no authority to include A/C in determining stringency, because A/C is a "parasitic load" that does not impact mpg.

Some commenters opposed interim A/C credits. CARB stated that no A/C credits should be given under EPCA unless the test procedures can be changed to fully account for A/C and NHTSA is given clear authority for A/C, while GM stated that NHTSA's authority to create additional types of credits must be limited by the fact that Congress clearly provided in EPCA for some types of CAFE credits but not for A/C-related credits for CAFE.

NHTSA has decided not to implement interim A/C credits for purposes of this final rule and MYs 2012–2016 light trucks. Changes to the test procedure for light trucks will be considered by the agencies in subsequent rulemakings.

While NHTSA agrees with commenters that the EPA authority to consider how fuel economy is calculated is broad, especially as to light trucks, we disagree that credits could simply be added to the CAFE calculation without making parallel changes in CAFE standard stringency to reflect their availability. CAFE stringency is determined, in part, with reference to the technologies available to manufacturers to improve mpg. If a technology draws power from the engine, like A/C, then making that technology more efficient to reduce its load on the engine will conserve fuel, consistent with EPCA's purposes. However, as noted above, some technologies that improve mpg are not accounted for in current CAFE test procedures. NHTSA agrees that the test procedures should be updated to account for the real-world loads on the engine and their impact on fuel economy, but recognizes that manufacturers will need lead-time and advance notice in order to ready themselves for such changes and their impact on CAFE compliance.

Thus, if manufacturers are able to achieve improvements in mpg that are not reflected on the test cycle, then the level of CAFE that they are capable of achieving is higher than that which their performance on the test cycle would otherwise indicate, which suggests, in turn, that a higher stringency is feasible. NHTSA has determined that the current CAFE levels being finalized today are feasible using traditional "tailpipe technologies" alone. If manufacturers are capable of improving fuel economy beyond that level using A/C technologies, and wish to receive credit for doing so, then NHTSA believes that more stringent CAFE standards would need to be established. Not raising CAFE could allow manufacturers to leave tailpipe technology on the table and make cheaper A/C improvements, which would not result in the maximum feasible fuel savings contemplated by EPCA.

Because raising CAFE stringency in conjunction with allowing A/C credits was not a possibility clearly contemplated in the NPRM, NHTSA does not believe that it would be within scope of notice for purposes of this rulemaking. Accordingly, the final rule cannot provide for interim A/C credits. However, if NHTSA were to allow A/C credits in the future, NHTSA believes it would be required to increase standard stringency accordingly, to avoid losses in fuel savings, as stated above. NHTSA will consider this approach further, ensuring that any changes to the treatment of A/C and accompanying changes in CAFE stringency are made with sufficient notice and lead-time.

b. NHTSA Then Analyzes EPA-Certified CAFE Values for Compliance

Determining CAFE compliance is fairly straightforward: After testing, EPA verifies the data submitted by

manufacturers and issues final CAFE reports to manufacturers and to NHTSA between April and October of each year (for the previous model year), and NHTSA then identifies the manufacturers' compliance categories (fleets) that do not meet the applicable CAFE fleet standards.

To determine if manufacturers have earned credits that would offset those shortfalls, NHTSA calculates a cumulative credit status for each of a manufacturer's vehicle compliance categories according to 49 U.S.C. 32903. If a manufacturer's compliance category exceeds the applicable fuel economy standard, NHTSA adds credits to the account for that compliance category. If a manufacturer's vehicles in a particular compliance category fall below the standard fuel economy value, NHTSA will provide written notification to the manufacturer that it has not met a particular fleet standard. The manufacturer will be required to confirm the shortfall and must either: Submit a plan indicating it will allocate existing credits, and/or for MY 2011 and later, how it will earn, transfer and/or acquire credits; or pay the appropriate civil penalty. The manufacturer must submit a plan or payment within 60 days of receiving agency notification. The amount of credits are determined by multiplying the number of tenths of a mpg by which a manufacturer exceeds, or falls short of, a standard for a particular category of automobiles by the total volume of automobiles of that category manufactured by the manufacturer for a given model year. Credits used to offset shortfalls are subject to the three and five year limitations as described in 49 U.S.C. 32903(a). Transferred credits are subject to the limitations specified by 49 U.S.C. 32903(g)(3). The value of each credit, when used for compliance, received via trade or transfer is adjusted, using the adjustment factor described in 49 CFR 536.4, pursuant to 49 U.S.C. 32903(f)(1). Credit allocation plans received from the manufacturer will be reviewed and approved by NHTSA. NHTSA will approve a credit allocation plan unless it finds the proposed credits are unavailable or that it is unlikely that the plan will result in the manufacturer earning sufficient credits to offset the subject credit shortfall. If a plan is approved, NHTSA will revise the respective manufacturer's credit account accordingly. If a plan is rejected, NHTSA will notify the respective manufacturer and request a revised plan or payment of the appropriate fine.

In the event that a manufacturer does not comply with a CAFE standard, even after the consideration of credits, EPCA provides for the assessing of civil penalties. The Act specifies a precise formula for determining the amount of civil penalties for such a noncompliance. The penalty, as adjusted for inflation by law, is $5.50 for each tenth of a mpg that a manufacturer's average fuel economy falls short of the standard for a given model year multiplied by the total volume of those vehicles in the affected fleet (*i.e.,* import or domestic passenger car, or light truck), manufactured for that model year. The amount of the penalty may not be reduced except under the unusual or extreme circumstances specified in the statute. All penalties are paid to the U.S. Treasury and not to NHTSA itself.[756]

Unlike the National Traffic and Motor Vehicle Safety Act, EPCA does not provide for recall and remedy in the event of a noncompliance. The presence of recall and remedy provisions [757] in the Safety Act and their absence in EPCA is believed to arise from the difference in the application of the safety standards and CAFE standards. A safety standard applies to individual vehicles; that is, each vehicle must possess the requisite equipment or feature which must provide the requisite type and level of performance. If a vehicle does not, it is noncompliant. Typically, a vehicle does not entirely lack an item or equipment or feature. Instead, the equipment or features fails to perform adequately. Recalling the vehicle to repair or replace the noncompliant equipment or feature can usually be readily accomplished.

In contrast, a CAFE standard applies to a manufacturer's entire fleet for a model year. It does not require that a particular individual vehicle be equipped with any particular equipment or feature or meet a particular level of fuel economy. It does require that the manufacturer's fleet, as a whole, comply. Further, although under the attribute-based approach to setting CAFE standards fuel economy targets are established for individual vehicles based on their footprints, the vehicles are not required to comply with those targets on a model-by-model or vehicle-by-vehicle basis. However, as a practical matter, if a manufacturer chooses to design some vehicles so they fall below their target levels of fuel economy, it will need to design other vehicles so they exceed their targets if the manufacturer's overall fleet average is to meet the applicable standard.

Thus, under EPCA, there is no such thing as a noncompliant vehicle, only a noncompliant fleet. No particular vehicle in a noncompliant fleet is any more, or less, noncompliant than any other vehicle in the fleet.

After enforcement letters are sent, NHTSA continues to monitor receipt of credit allocation plans or civil penalty payments that are due within 60 days from the date of receipt of the letter by the vehicle manufacturer, and takes further action if the manufacturer is delinquent in responding.

Several commenters encouraged the agency to increase the transparency of how the agency monitors and enforces CAFE compliance. EDF, Public Citizen, Sierra Club *et al.,* UCS, and Porsche all commented that NHTSA should publish an annual compliance report for manufacturers, and Porsche suggested that it be available online. Sierra Club *et al.* and Porsche stated that this would help clarify manufacturers' credit status (for the benefit of the public and manufacturers looking to purchase credits, respectively) and sales, and Sierra Club *et al.* further stated that the agency should make public all information regarding credits and attained versus projected fleet average mpg levels. EDF similarly urged the agency to provide publicly a compliance report every year that would include any recommended adjustments to the program, enforcement actions, or prospective policy action to ensure the policy objectives are achieved.

In response, NHTSA agrees that there could be substantial benefits to increasing the transparency of information concerning the credit holdings of each credit holder. Along with the MY 2011 final rule, NHTSA issued a new regulation 49 CFR part 536 to implement the new CAFE credit trading and transfer programs authorized by EISA. Paragraph 536.5(e) requires that we periodically publish credit holding information. NHTSA plans to make this information available to the public on the NHTSA Web site. The exact format that will be used to display this information has not been finalized but it is our plan to begin making this information available no later than calendar year 2011 to coincide with MY 2011 when manufacturers may begin utilizing credit trades and transfers.

[756] Honeywell commented that any fines imposed and collected under the CAFE and GHG standards should be appropriated to the development of vehicle technologies that continue to improve fuel economy in the future, and that the direct application of the penalties collected would support the underlying legislative policy and drive innovation. While NHTSA certainly would not oppose such an outcome, it would lie within the hands of Congress and not the agency to direct the use of the fines in that manner.

[757] 49 U.S.C. 30120, Remedies for defects and noncompliance.

3. What compliance flexibilities are available under the CAFE program and how do manufacturers use them?

There are three basic flexibilities permitted by EPCA/EISA that manufacturers can use to achieve compliance with CAFE standards beyond applying fuel economy-improving technologies: (1) Building dual- and alternative-fueled vehicles; (2) banking, trading, and transferring credits earned for exceeding fuel economy standards; and (3) paying fines. We note again that while these flexibility mechanisms will reduce compliance costs to some degree for most manufacturers, 49 U.S.C. 32902(h) expressly prohibits NHTSA from considering the availability of credits (either for building dual- or alternative-fueled vehicles or from accumulated transfers or trades) in determining the level of the standards. Thus, NHTSA may not raise CAFE standards because manufacturers have enough credits to meet higher standards. This is an important difference from EPA's authority under the CAA, which does not contain such a restriction, and which allows EPA to set higher standards as a result.

a. Dual- and Alternative-Fueled Vehicles

As discussed at length in prior rulemakings, EPCA encourages manufacturers to build alternative-fueled and dual- (or flexible-) fueled vehicles by providing special fuel economy calculations for "dedicated" (that is, 100 percent) alternative fueled vehicles and "dual-fueled" (that is, capable of running on either the alternative fuel or gasoline) vehicles. The fuel economy of a dedicated alternative fuel vehicle is determined by dividing its fuel economy in equivalent miles per gallon of gasoline or diesel fuel by 0.15.[758] Thus, a 15 mpg dedicated alternative fuel vehicle would be rated as 100 mpg. For dual-fueled vehicles, the rating is the average of the fuel economy on gasoline or diesel and the fuel economy on the alternative fuel vehicle divided by 0.15.[759]

For example, this calculation procedure turns a dual-fueled vehicle that averages 25 mpg on gasoline or diesel into a 40 mpg vehicle for CAFE purposes. This assumes that (1) the vehicle operates on gasoline or diesel 50 percent of the time and on alternative fuel 50 percent of the time; (2) fuel economy while operating on alternative fuel is 15 mpg (15/.15 = 100 mpg); and (3) fuel economy while operating on gas or diesel is 25 mpg. Thus:

CAFE FE = 1/{0.5/(mpg gas) + 0.5/(mpg alt fuel)} = 1/{0.5/25 + 0.5/100} = 40 mpg

In the case of natural gas, the calculation is performed in a similar manner. The fuel economy is the weighted average while operating on natural gas and operating on gas or diesel. The statute specifies that 100 cubic feet (ft^3) of natural gas is equivalent to 0.823 gallons of gasoline. The gallon equivalency of natural gas is equal to 0.15 (as for other alternative fuels).[760] Thus, if a vehicle averages 25 miles per 100 ft^3 of natural gas, then:

CAFE FE = (25/100) * (100/.823)*(1/0.15) = 203 mpg

Congress extended the incentive in EISA for dual-fueled automobiles through MY 2019, but provided for its phase out between MYs 2015 and 2019.[761] The maximum fuel economy increase which may be attributed to the incentive is thus as follows:

Model year	mpg increase
MYs 1993–2014	1.2
MY 2015	1.0
MY 2016	0.8
MY 2017	0.6
MY 2018	0.4
MY 2019	0.2
After MY 2019	0

49 CFR part 538 implements the statutory alternative-fueled and dual-fueled automobile manufacturing incentive. NHTSA updated part 538 as part of this final rule to reflect the EISA changes extending the incentive to MY 2019, but to the extent that 49 U.S.C. 32906(a) differs from the current version of 49 CFR 538.9, the statute supersedes the regulation, and regulated parties may rely on the text of the statute.

A major difference between EPA's statutory authority and NHTSA's statutory authority is that the CAA contains no specific prescriptions with regard to credits for dual- and alternative-fueled vehicles comparable to those found in EPCA/EISA. As an exercise of that authority, and as discussed in Section III above, EPA is offering similar credits for dual- and alternative-fueled vehicles through MY 2015 for compliance with its CO_2 standards, but for MY 2016 and beyond EPA will establish CO_2 emission levels for alternative fuel vehicles based on measurement of actual CO_2 emissions during testing, plus a manufacturer demonstration that the vehicles are actually being run on the alternative fuel. The manufacturer would then be allowed to weight the gasoline and alternative fuel test results based on the proportion of actual usage of both fuels, as discussed above in Section III. NHTSA has no such authority under EPCA/EISA to require that vehicles manufactured for the purpose of obtaining the credit actually be run on the alternative fuel, but requested comment in the NPRM on whether it should seek legislative changes to revise its authority to address this issue.

NHTSA received only one comment on this issue: VW commented that NHTSA should not seek a change in its authority, because Congress' intent for NHTSA is already clear. VW did, however, encourage NHTSA to include the statutory FFV credit phase-out in Part 538, which the agency is doing.

b. Credit Trading and Transfer

As part of the MY 2011 final rule, NHTSA established Part 536 for credit trading and transfer. Part 536 implements the provisions in EISA authorizing NHTSA to establish by regulation a credit trading program and directing it to establish by regulation a credit transfer program.[762] Since its enactment, EPCA has permitted manufacturers to earn credits for exceeding the standards and to carry those credits backward or forward. EISA extended the "carry-forward" period from three to five model years, and left the "carry-back" period at three model years. Under part 536, credit holders (including, but not limited to, manufacturers) will have credit accounts with NHTSA, and will be able to hold credits, use them to achieve compliance with CAFE standards, transfer them between compliance categories, or trade them. A credit may also be cancelled before its expiry date, if the credit holder so chooses. Traded and transferred credits are subject to an "adjustment factor" to ensure total oil savings are preserved, as required by EISA.[763] EISA also prohibits credits

[758] 49 U.S.C. 32905(a).

[759] 49 U.S.C. 32905(b).

[760] 49 U.S.C. 32905(c).

[761] 49 U.S.C. 32906(a). NHTSA notes that the incentive for dedicated alternative-fuel automobiles, automobiles that run exclusively on an alternative fuel, at 49 U.S.C. 32905(a), was not phased-out by EISA.

[762] Congress required that DOT establish a credit "transferring" regulation, to allow individual manufacturers to move credits from one of their fleets to another (*e.g.,* using a credit earned for exceeding the light truck standard for compliance with the domestic passenger car standard). Congress allowed DOT to establish a credit "trading" regulation, so that credits may be bought and sold between manufacturers and other parties.

[763] Ford and Toyota both commented on NHTSA's use of the adjustment factor: Ford stated that it preferred a streamlined "megagrams"

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earned before MY 2011 from being transferred, so NHTSA has developed several regulatory restrictions on trading and transferring to facilitate Congress' intent in this regard. EISA also establishes a "cap" for the maximum increase in any compliance category attributable to transferred credits: For MYs 2011–2013, transferred credits can only be used to increase a manufacturer's CAFE level in a given compliance category by 1.0 mpg; for MYs 2014–2017, by 1.5 mpg; and for MYs 2018 and beyond, by 2.0 mpg.

NHTSA recognizes that some manufacturers may have to rely on credit transferring for compliance in MYs 2012–2017.[764] As a way to improve the transferring flexibility mechanism for manufacturers, NHTSA interprets EISA not to prohibit the banking of transferred credits for use in later model years. Thus, NHTSA believes that the language of EISA may be read to allow manufacturers to transfer credits from one fleet that has an excess number of credits, within the limits specified, to another fleet that may also have excess credits instead of transferring only to a fleet that has a credit shortfall. This would mean that a manufacturer could transfer a certain number of credits each year and bank them, and then the credits could be carried forward or back "without limit" later if and when a shortfall ever occurred in that same fleet. NHTSA bases this interpretation on 49 U.S.C. 32903(g)(2), which states that transferred credits "are available to be used in the same model years that the manufacturer could have applied such credits under subsections (a), (b), (d), and (e), as well as for the model year in which the manufacturer earned such credits." The EISA limitation applies only to the application of such credits for compliance in particular model years, and not their transfer *per se.* If transferred credits have the same lifespan and may be used in carry-back and carry-forward plans, it seems reasonable that they should be allowed to be stored in any fleet, rather than only in the fleet in which they were earned. Of course, manufacturers could not transfer and bank credits for purposes of achieving the minimum standard for domestically-manufactured passenger cars, as prohibited by 49 U.S.C. 32903(g)(4). Transferred and banked credits would additionally still be subject to the adjustment factor when actually used, which would help to ensure that total oil savings are preserved while still offering greater flexibility to manufacturers. This interpretation of EISA also helps NHTSA, to some extent, to harmonize better with EPA's CO_2 program, which allows unlimited banking and transfer of credits. NHTSA sought comment in the NPRM on this interpretation of EISA.

Only one commenter, VW, commented on NHTSA's interpretation of EISA as allowing the banking of transferred credits, and agreed with it. VW suggested that NHTSA revise part 536 to clarify accordingly, and that NHTSA include the statutory transfer cap in part 536 as well. While NHTSA does not believe that including the statutory transfer cap in the regulation is necessary, NHTSA will revise Part 536 in this final rule by amending the definition of "transfer" as follows (in bold and italics):

> *Transfer* means the application by a manufacturer of credits earned by that manufacturer in one compliance category or credits acquired be trade (and originally earned by another manufacturer in that category) to achieve compliance with fuel economy standards with respect to a different compliance category. For example, a manufacturer may purchase light truck credits from another manufacturer, and transfer them to achieve compliance in the manufacturer's domestically manufactured passenger car fleet. ***Subject to the credit transfer limitations of 49 U.S.C. 32903 (g)(3), credits can also be transferred across compliance categories and banked or saved in that category to be carried forward or backward to address a credit shortfall.***

c. Payment of Fines

If a manufacturer's average miles per gallon for a given compliance category (domestic passenger car, imported passenger car, light truck) falls below the applicable standard, and the manufacturer cannot make up the difference by using credits earned or acquired, the manufacturer is subject to penalties. The penalty, as mentioned, is $5.50 for each tenth of a mpg that a manufacturer's average fuel economy falls short of the standard for a given model year, multiplied by the total volume of those vehicles in the affected fleet, manufactured for that model year. NHTSA has collected $785,772,714.50 to date in CAFE penalties, the largest ever being paid by DaimlerChrysler for its MY 2006 import passenger car fleet, $30,257,920.00. For their MY 2008 fleets, six manufacturers paid CAFE fines for not meeting an applicable standard—Ferrari, Maserati, Mercedes-Benz, Porsche, Chrysler and Fiat—for a total of $12,922,255,50.

NHTSA recognizes that some manufacturers may use the option to pay fines as a CAFE compliance flexibility—presumably, when paying fines is deemed more cost-effective than applying additional fuel economy-improving technology, or when adding fuel economy-improving technology would fundamentally change the characteristics of the vehicle in ways that the manufacturer believes its target consumers would not accept. NHTSA has no authority under EPCA/EISA to prevent manufacturers from turning to fine-payment if they choose to do so. This is another important difference from EPA's authority under the CAA, which allows EPA to revoke a manufacturer's certificate of conformity that permits it to sell vehicles if EPA determines that the manufacturer is in non-compliance, and does not permit manufacturers to pay fines in lieu of compliance with applicable standards.

NHTSA has grappled repeatedly with the issue of whether fines are motivational for manufacturers, and whether raising fines would increase manufacturers' compliance with the standards. EPCA authorizes increasing the civil penalty very slightly up to $10.00, exclusive of inflationary adjustments, if NHTSA decides that the increase in the penalty "will result in, or substantially further, substantial energy conservation for automobiles in the model years in which the increased penalty may be imposed; and will not have a substantial deleterious impact on the economy of the United States, a State, or a region of a State." 49 U.S.C. 32912(c).

To support a decision that increasing the penalty would result in "substantial energy conservation" without having "a substantial deleterious impact on the economy," NHTSA would likely need to provide some reasonably certain quantitative estimates of the fuel that would be saved, and the impact on the economy, if the penalty were raised. Comments received on this issue in the past have not explained in clear quantitative terms what the benefits and drawbacks to raising the penalty might be. Additionally, it may be that the range of possible increase that the statute provides, *i.e.,* up to $10 per tenth of a mpg, is insufficient to result in

approach like EPA was proposing, while Toyota stated that NHTSA and EPA should use consistent VMT estimates for purposes of all analysis and for use in the adjustment factor. In response to Ford, NHTSA is maintaining use of the adjustment factor just finalized last March, which uses mpg rather than gallons or grams and is thus consistent with the rest of the CAFE program. In response to Toyota, NHTSA agrees that consistency of VMT estimates should be maintained and will revise the adjustment factor as necessary.

[764] In contrast, manufacturers stated in comments in NHTSA's MY 2011 rulemaking that they did not anticipate a robust market for credit trading, due to competitive concerns. NHTSA does not yet know whether those concerns will continue to deter manufacturers from exercising the trading flexibility during MYs 2012–2016.

substantial energy conservation, although changing this would require an amendment to the statute by Congress. While NHTSA continues to seek to gain information on this issue to inform a future rulemaking decision, we requested in the NPRM that commenters wishing to address this issue please provide, as specifically as possible, estimates of how raising or not raising the penalty amount will or will not substantially raise energy conservation and impact the economy.

Only Ferrari and Daimler commented on this issue. Both manufacturers argued that raising the penalty would have no impact on fuel savings and would simply hurt the manufacturers forced to pay it. Daimler stated further that the agency's asking for a quantitative analysis ignores the fact that manufacturers pay fines because they cannot increase energy savings any further. Thus, again, the agency finds itself without a clear quantitative explanation of what the benefits and drawbacks to raising the penalty might be, but it continues to appear that the range of possible increase is insufficient to result in additional substantial energy conservation. NHTSA will therefore defer consideration of this issue for purposes of this rulemaking.

4. Other CAFE Enforcement Issues—Variations in Footprint

NHTSA has a standardized test procedure for determining vehicle footprint,[765] which is defined by regulation as follows:

> Footprint is defined as the product of track width (measured in inches, calculated as the average of front and rear track widths, and rounded to the nearest tenth of an inch) times wheelbase (measured in inches and rounded to the nearest tenth of an inch), divided by 144 and then rounded to the nearest tenth of a square foot.[766]

"Track width," in turn, is defined as "the lateral distance between the centerlines of the base tires at ground, including the camber angle." [767] "Wheelbase" is defined as "the longitudinal distance between front and rear wheel centerlines." [768]

NHTSA began requiring manufacturers to submit this information on footprint, wheelbase, and track width as part of their pre-model year reports in MY 2008 for light trucks, and will require manufacturers to submit this information for passenger cars as well beginning in MY 2010. Manufacturers have submitted the required information for their light trucks, but NHTSA has identified several issues with regard to footprint measurement that could affect how required fuel economy levels are calculated for a manufacturer as discussed below.

a. Variations in Track Width

By definition, wheelbase measurement should be very consistent from one vehicle to another of the same model. Track width, in contrast, may vary in two respects: Wheel offset,[769] and camber. Most current vehicles have wheels with positive offset, with technical specifications for offset typically expressed in millimeters. Additionally, for most vehicles, the camber angle of each of a vehicle's wheels is specified as a range, *i.e.,* front axle, left and right within minus 0.9 to plus 0.3 degree and rear axle, left and right within minus 0.9 to plus 0.1 degree. Given the small variations in offset and camber angle dimensions, the potential effects of components (wheels) and vehicle specifications (camber) within existing designs on vehicle footprints are considered insignificant.

However, NHTSA recognizes that manufacturers may change the specifications of and the equipment on vehicles, even those that are not redesigned or refreshed, during a model year and from year to year. There may be opportunity for manufacturers to change specifications for wheel offset and camber to increase a vehicle's track width and footprint, and thus decrease their required fuel economy level. NHTSA believes that this is likely easiest on vehicles that already have sufficient space to accommodate changes without accompanying changes to the body profile and/or suspension component locations.

There may be drawbacks to such a decision, however. Changing from positive offset wheels to wheels with zero or negative offset will move tires and wheels outward toward the fenders. Increasing the negative upper limit of camber will tilt the top of the tire and wheel inward and move the bottom outward, placing the upper portion of the rotating tires and wheels in closer proximity to suspension components. In addition, higher negative camber can adversely affect tire life and the on-road fuel economy of the vehicle. Furthermore, it is likely that most vehicle designs have already used the available space in wheel areas since, by doing so, the vehicle's handling performance is improved. Therefore, it seems unlikely that manufacturers will make significant changes to wheel offset and camber. No comments were received on this issue.

b. How Manufacturers Designate "Base Tires" and Wheels

According to the definition of "track width" in 49 CFR 523.2, manufacturers must determine track width when the vehicle is equipped with "base tires." Section 523.2 defines "base tire," in turn, as "the tire specified as standard equipment by a manufacturer on each configuration of a model type." NHTSA did not define "standard equipment."

In their pre-model year reports required by 49 CFR 537, manufacturers have the option of either (A) reporting a base tire for each model type, or (B) reporting a base tire for each vehicle configuration within a model type, which represents an additional level of specificity. If different vehicle configurations have different footprint values, then reporting the number of vehicles for each footprint will improve the accuracy of the required fuel economy level for the fleet, since the pre-model year report data is part of what manufacturers use to determine their CAFE obligations.

For example, assume a manufacturer's pre-model year report listed five vehicle configurations that comprise one model type. If the manufacturer provides only one vehicle configuration's front and rear track widths, wheelbase, footprint and base tire size to represent the model type, and the other vehicle configurations all have a different tire size specified as standard equipment, the footprint value represented by the manufacturer may not capture the full spectrum of footprint values for that model type. Similarly, the base tires of a model type may be mounted on two or more wheels with different offset dimensions for different vehicle configurations. Of course, if the footprint value for all vehicle configurations is essentially the same, there would be no need to report by vehicle configuration. However, if footprints are different—larger or smaller—reporting for each group with similar footprints or for each vehicle configuration would produce a more

[765] NHTSA TP–537–01, March 30, 2009. *Available at http://www.nhtsa.gov/portal/site/nhtsa/menuitem.b166d5602714f9a73baf3210dba046a0/,* scroll down to "537" (last accessed July 18, 2009).

[766] 49 CFR 523.2.

[767] *Id.*

[768] *Id.*

[769] Offset of a wheel is the distance from its hub mounting surface to the centerline of the wheel, *i.e.,* measured laterally inboard or outboard.

Zero offset—the hub mounting surface is even with the centerline of the wheel.

Positive offset—the hub mounting surface is outboard of the centerline of the wheel (toward street side).

Negative offset—the hub mounting surface is inboard of the centerline of the wheel (away from street side).

accurate result. No comments were received on this issue.

c. Vehicle "Design" Values Reported by Manufacturers

NHTSA understands that the track widths and wheelbase values and the calculated footprint calculated values, as provided in pre-model year reports, are based on vehicle designs. This can lead to inaccurate calculations of required fuel economy level. For example, if the values reported by manufacturers are within an expected range of values, but are skewed to the higher end of the ranges, the required fuel economy level for the fleet will be artificially lower, an inaccurate attribute based value. Likewise, it would be inaccurate for manufacturers to submit values on the lower end of the ranges, but would decrease the likelihood that measured values would be less than the values reported and reduce the likelihood of an agency inquiry. Since not every vehicle is identical, it is also probable that variations between vehicles exist that can affect track width, wheelbase and footprint. As with other self-certifications, each manufacturer must decide how it will report, by model type, vehicle configuration, or a combination, and whether the reported values have sufficient margin to account for variations.

To address this, the agency will be monitoring the track widths, wheelbases and footprints reported by manufacturers, and anticipates measuring vehicles to determine if the reported and measured values are consistent. We will look for year-to-year changes in the reported values. We can compare MY 2008 light truck information and MY 2010 passenger car information to the information reported in subsequent model years. Moreover, under 49 CFR 537.8, manufacturers may make separate reports to explain why changes have occurred or they may be contacted by the agency to explain them. No comments were received on this issue.

d. How Manufacturers Report This Information in Their Pre-Model Year Reports

49 CFR 537.7(c) requires that manufacturers' pre-model year reports include "model type and configuration fuel economy and technical information." The fuel economy of a "model type" is, for many manufacturers, comprised of a number of vehicle configurations. 49 CFR 537.4 states that "model type" and "vehicle configuration" are defined in 40 CFR 600. Under that Part, "model type" includes engine, transmission, and drive configuration (2WD, 4WD, or all-wheel drive), while "vehicle configuration" includes those parameters plus test weight. Model type is important for calculating fuel economy in the new attribute-based system—the required fuel economy level for each of a manufacturer's fleets is calculated using the number of vehicles within each model type and the applicable fuel economy target for each model type.

In MY 2008 and 2009 pre-model year reports for light trucks, manufacturers have expressed information in different ways. Some manufacturers that have many vehicle configurations within a model type have included information for each vehicle configuration's track width, wheelbase and footprint. Other manufacturers reported vehicle configuration information per § 537.7(c)(4), but provided only model type track width, wheelbase and footprint information for subsections 537.7(c)(4)(xvi)(B)(3), (4) and (5). NHTSA believes that these manufacturers may have reported the information this way because the track widths, wheelbase and footprint are essentially the same for each vehicle configuration within each model type. A third group of manufacturers submitted model type information only, presumably because each model type contains only one vehicle configuration.

NHTSA does not believe that this variation in reporting methodology presents an inherent problem, as long as manufacturers follow the specifications in part 537 for reporting format, and as long as pre-model year reports provide information that is accurate and represents each vehicle configuration within a model type. The report may, but need not, be similar to what manufacturers submit to EPA as their end-of-model year report. However, NHTSA sought comment in the NPRM on any potential benefits or drawbacks to requiring a more standardized reporting methodology. NHTSA requested that, if commenters recommend increasing standardization, they provide specific examples of what information should be required and how NHTSA should require it to be provided but no comments were received on this specific issue.

However, on a related topic, Honda and Toyota both commented on the equations and corresponding terms used to calculate the fleet required standards. Both manufacturers indicated that the terms defined for use in the equations could be interpreted differently by vehicle manufacturers. For example, the term "footprint of a vehicle model" could be interpreted to mean that a manufacturer only has to use one representative footprint within a model type or that it is necessary to use all the unique footprints and corresponding fuel economy target standards within a model type when determining a fleet target standard. This issue is discussed in more detail in Section IV.E. above.

5. Other CAFE Enforcement Issues—Miscellaneous

Hyundai commented that 49 CFR 537.9 appeared to contain erroneous references to 40 CFR 600.506 and 600.506(a)(2), which seemed not to exist, and asked the agency to check those references. In response, NHTSA examined the issue and found that 40 CFR 600.506 was, in fact, eliminated by a final rule published on April 6, 1984 (49 FR 13832). That section of 40 CFR originally required manufacturers to submit preliminary CAFE data to EPA prior to submitting the final end of the year data. EPA's primary intent for eliminating the requirement, as stated in the final rule, was to reduce administration burden. To address these inaccurate references, NHTSA is revising part 537 to delete references to 40 CFR 600.506. This will not impact the existing requirements for the pre-model year, mid-model year and supplemental reports manufacturers must submit to NHTSA under part 537.

J. Other Near-Term Rulemakings Mandated by EISA

1. Commercial Medium- and Heavy-Duty On-Highway Vehicles and Work Trucks

EISA added new provisions to 49 U.S.C. 32902 requiring DOT, in consultation with DOE and EPA, to conduct a study regarding a program to require improvements in the fuel efficiency of commercial medium- and heavy-duty on-highway vehicles and work trucks and then to conduct a rulemaking to adopt and implement such a program. In the study, the agency must examine the fuel efficiency of commercial medium- and heavy-duty on-highway vehicles [770] and work trucks [771] and determine the appropriate test procedures and methodologies for measuring their fuel efficiency, as well as the appropriate metric for measuring and expressing their fuel efficiency performance and the range of factors that affect their fuel efficiency. Then the agency must determine in a rulemaking

[770] Defined as an on-highway vehicle with a gross vehicle weight rating of 10,000 pounds or more.

[771] Defined as a vehicle that is both rated at between 8,500 and 10,000 pounds gross vehicle weight; and also is not a medium-duty passenger vehicle (as defined in 40 CFR 86.1803–01, as in effect on the date of EISA's enactment.

proceeding how to implement a commercial medium- and heavy-duty on-highway vehicle and work truck fuel efficiency improvement program designed to achieve the maximum feasible improvement, and adopt and implement appropriate test methods, measurement metrics, fuel economy standards, and compliance and enforcement protocols that are appropriate, cost-effective, and technologically feasible for commercial medium- and heavy-duty on-highway vehicles and work trucks. The agency is working closely with EPA on developing a proposal for these standards.

2. Consumer Information on Fuel Efficiency and Emissions

EISA also added a new provision to 49 U.S.C. 32908 requiring DOT, in consultation with DOE and EPA, to develop and implement by rule a program to require manufacturers to label new automobiles sold in the United States with:

(1) Information reflecting an automobile's performance on the basis of criteria that EPA shall develop, not later than 18 months after the date of the enactment of EISA, to reflect fuel economy and greenhouse gas and other emissions over the useful life of the automobile; and

(2) A rating system that would make it easy for consumers to compare the fuel economy and greenhouse gas and other emissions of automobiles at the point of purchase, including a designation of automobiles with the lowest greenhouse gas emissions over the useful life of the vehicles; and with the highest fuel economy.

DOT must also develop and implement by rule a program to require manufacturers to include in the owner's manual for vehicles capable of operating on alternative fuels information that describes that capability and the benefits of using alternative fuels, including the renewable nature and environmental benefits of using alternative fuels.

EISA further requires DOT, in consultation with DOE and EPA, to

- Develop and implement by rule a consumer education program to improve consumer understanding of automobile performance described [by the label to be developed] and to inform consumers of the benefits of using alternative fuel in automobiles and the location of stations with alternative fuel capacity;
- Establish a consumer education campaign on the fuel savings that would be recognized from the purchase of vehicles equipped with thermal management technologies, including energy efficient air conditioning systems and glass; and
- By rule require a label to be attached to the fuel compartment of vehicles capable of operating on alternative fuels, with the form of alternative fuel stated on the label.

49 U.S.C. 32908(g)(2) and (3).

DOT has 42 months from the date of EISA's enactment (by the end of 2011) to issue final rules under this subsection. Work on developing these standards is also on-going. The agency is working closely with EPA on developing a proposal for these regulations.

Additionally, in preparation for this future rulemaking, NHTSA will consider appropriate metrics for presenting fuel economy-related information on labels. Based on the non-linear relationship between mpg and fuel costs as well as emissions, inclusion of the "gallons per 100 miles" metric on fuel economy labels may be appropriate going forward, although the mpg information is currently required by law. A cost/distance metric may also be useful, as could a CO_2e grams per mile metric to facilitate comparisons between conventional vehicles and alternative fuel vehicles and to incorporate information about air conditioning-related emissions.

K. Record of Decision

On May 19, 2009 President Obama announced a National Fuel Efficiency Policy aimed at both increasing fuel economy and reducing greenhouse gas pollution for all new cars and trucks sold in the United States, while also providing a predictable regulatory framework for the automotive industry. The policy seeks to set harmonized Federal standards to regulate both fuel economy and GHG emissions. The program covers model year 2012 to model year 2016 and ultimately requires the equivalent of an average fuel economy of 35.5 mpg in 2016, if all CO_2 reduction were achieved through fuel economy improvements.

In accordance with President Obama's May 19, 2009 announcement, this final rule promulgates the fuel economy standards for MYs 2012–2016. This final rule constitutes the Record of Decision (ROD) for NHTSA's MYs 2012–2016 CAFE standards, pursuant to the National Environmental Policy Act (NEPA) and the Council on Environmental Quality's (CEQ) implementing regulations.[772] *See* 40 CFR 1505.2.

As required by CEQ regulations, this final rule and ROD sets forth the following: (1) The agency's decision; (2) alternatives considered by NHTSA in reaching its decision, including the environmentally preferable alternative; (3) the factors balanced by NHTSA in making its decision, including considerations of national policy; (4) how these factors and considerations entered into its decision; and (5) the agency's preferences among alternatives based on relevant factors, including economic and technical considerations and agency statutory missions. This final rule also briefly addresses mitigation.

The Agency's Decision

In the DEIS and the FEIS, the agency identified the approximately 4.3-percent average annual increase alternative as NHTSA's Preferred Alternative. After carefully reviewing and analyzing all of the information in the public record including technical support documents, the FEIS, and public and agency comments submitted on the DEIS, the FEIS, and the NPRM, NHTSA has decided to proceed with the Preferred Alternative. The Preferred Alternative requires approximately a 4.3-percent average annual increase in mpg for MYs 2012–2016. This decision results in an estimated required MY 2016 fleetwide 37.8 mpg for passenger cars and 28.7 mpg for light trucks. As stated in the FEIS, the Preferred Alternative results in a combined estimated required fleetwide 34.1 mpg in MY 2016.

Following publication of the FEIS, the Federal government Interagency Working Group on Social Cost of Carbon made public a revised estimate of the Social Cost of Carbon to support Federal regulatory activities where reducing CO_2 emissions is an important potential outcome. NHTSA relied upon the interagency group's interim guidance published in August 2009 for the FEIS analysis. For this final rule NHTSA has updated the analysis and now uses the central SCC value of $21 per metric ton (2010 emissions) identified in the interagency group's revised guidance.[773] See Section IV.C.3.l.iii.

The group's purpose in developing new estimates of the SCC was to allow

[772] NEPA is codified at 42 U.S.C. 4321–47. CEQ NEPA implementing regulations are codified at 40 Code of Federal Regulations (CFR) Parts 1500–08.

[773] The $21/ton estimate is for 2010 emissions and increases over time because of damages resulting from increased GHG concentrations. $21 is the average SCC at the 3 percent discount rate. The other three estimates include: Avg SCC at 5% ($5–$16); Avg SCC at 2.5% ($35–$65); and 95th percentile at 3% ($65–$136).

Federal agencies to incorporate the social benefits of reducing carbon dioxide (CO_2) emissions into cost-benefit analyses of regulatory actions that have small, or "marginal," impacts on cumulative global emissions, as most Federal regulatory actions can be expected to have. The interagency group convened on a regular basis to consider public comments, explore the technical literature in relevant fields, and discuss key inputs and assumptions in order to generate SCC estimates. The revised SCC estimates represent the interagency group's consideration of the literature and judgments about how to monetize some of the benefits of GHG mitigation.[774]

Incorporating the revised estimate, NHTSA's analysis indicates that the Agency's Decision will likely result in slightly greater fuel savings and CO_2 emissions reductions than those noted in the EIS. The revised SCC valuation applied for purposes of the final rule resulted in a slightly smaller gap in stringency between the passenger car and light truck standards; the ratio of passenger car stringency (*i.e.,* average required fuel economy) to light truck stringency in MY 2016 shrank from 1.318 to 1.313, or about 0.4 percent. Because manufacturers projected to pay civil penalties (rather than fully complying with CAFE standards) account for a smaller share of the light truck market than of the passenger car market, and because lifetime mileage accumulation is somewhat higher for light trucks than for passenger cars, this slight shift in relative stringency caused average fuel economy levels achieved under the preferred alternative to increase by about 0.02 mpg during MYs 2012–2016, resulted in corresponding lifetime (*i.e.,* over the full useful life of MYs 2012–2016 vehicles) fuel savings increases of about 0.9 percent, and corresponding increases in lifetime CO_2 emission reductions of about 1.1 percent. For environmental impacts associated with NHTSA's Decision, see Section IV.G of this final rule.

The incorporation of the revised interagency estimate of SCC results in minimal changes to the required fleetwide mpg for some model years covered by this final rule. All changes are less than or equal to .1 mpg (but may reflect an increase when rounding up during calculations) and continue to result, on average, in a 4.3 percent annual increase in mpg.[775] *See* Section IV.F for discussion of required annual fleetwide mpg.

For a discussion of the agency's selection of the Preferred Alternative as NHTSA's Decision, see Section IV.F of this final rule.

Alternatives Considered by NHTSA in Reaching Its Decision, Including the Environmentally Preferable Alternative

When preparing an EIS, NEPA requires an agency to compare the potential environmental impacts of its proposed action and a reasonable range of alternatives. NHTSA identified alternative stringencies that represent the spectrum of potential actions the agency could take. The environmental impacts of these alternatives, in turn, represent the spectrum of potential environmental impacts that could result from NHTSA's chosen action in setting CAFE standards. Specifically, the DEIS and FEIS analyzed the impacts of the following eight "action" alternatives: 3-Percent Alternative (Alternative 2), 4-Percent Alternative (Alternative 3), Preferred Alternative (Alternative 4), 5-Percent Alternative (Alternative 5), an alternative that maximizes net benefits (MNB) (Alternative 6), 6-Percent Alternative (Alternative 7), 7-Percent Alternative (Alternative 8), and an alternative under which total cost equals total benefit (TCTB) (Alternative 9). The DEIS and FEIS also analyzed the impacts that would be expected if NHTSA imposed no new requirements (the No Action Alternative). In accordance with CEQ regulations, the agency selected a Preferred Alternative in the DEIS and the FEIS (the approximately 4.3-percent average annual increase alternative).

In response to public comments, the FEIS expanded the analysis to determine how the proposed alternatives were affected by variations in the economic assumptions input into the computer model NHTSA uses to calculate the costs and benefits of various potential CAFE standards (the Volpe model). Variations in economic assumptions can be used to examine the sensitivity of costs and benefits of each of the alternatives, including future fuel prices, the value of reducing CO_2 emissions (referred to as the social cost of carbon or SCC), the magnitude of the rebound effect, and the value of oil import externalities. Different combinations of economic assumptions can also affect the calculation of environmental impacts of the various action alternatives. This occurs partly because some economic inputs to the Volpe model—notably fuel prices and the size of the rebound effect—influence its estimates of vehicle use and fuel consumption, the main factors that determine emissions of GHGs, criteria air pollutants, and airborne toxics. See section 2.4 of the FEIS for a discussion of the sensitivity analysis conducted for the FEIS.

The agency considered and analyzed each of the individual economic assumptions to determine which assumptions most accurately represent future economic conditions. For a discussion of the analysis supporting the selection of the economic assumptions relied on by the agency in this final rule, see Section IV.C.3.

Also in response to comments, the agency conducted a national-scale photochemical air quality modeling and health risk assessment for a subset of the DEIS alternatives to support and confirm the health effects and health-related economic estimates of the EIS. The photochemical air quality study is included as Appendix F to the EIS. The study used air quality modeling and health benefits analysis tools to quantify the air quality and health-related benefits associated with the alternative CAFE standards. Four alternatives from the DEIS were modeled: the No Action Alternative and Alternative 2 (the 3-Percent Alternative) to represent fuel economy requirements at the lower end of the range; Alternative 4 (the Preferred Alternative) and Alternative 8 (the 7-Percent Alternative) to represent fuel economy requirements at the higher end of the range.

The agency compared the potential environmental impacts of alternative mpg levels, analyzing direct, indirect, and cumulative impacts. For a discussion of the environmental impacts associated with each of the alternatives, *see* Chapters 3 and 4 of the FEIS.

Alternative 8 (the 7-Percent Alternative) is the overall Environmentally Preferable Alternative, because it would result in the largest reductions in fuel use and GHG emissions by vehicles produced during MYs 2012–2016 among the alternatives considered. Under each alternative the agency considered, the reduction in fuel consumption resulting from higher fuel economy causes emissions that occur during fuel refining and distribution to decline. For most pollutants, this decline is more than sufficient to offset the increase in tailpipe emissions that results from increased driving due to the fuel economy rebound effect, leading to

[774] The interagency group intends to update these estimates as the science and economic understanding of climate change and its impacts on society improves over time.

[775] There are no "substantial changes to the proposed action" and there are no "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." Therefore, consistent with 40 CFR 1502.9(c), no supplement to the EIS is required. Moreover, the environmental impacts of this decision fall within the spectrum of impacts analyzed in the DEIS and the FEIS.

a net reduction in total emissions from fuel production, distribution, and use. Because it leads to the largest reductions in fuel refining, distribution, and consumption among the alternatives considered, Alternative 8 would also lead to the largest net reductions in emissions of CO_2 and other GHGs, most criteria air pollutants,[776] as well as the mobile source air toxics (MSATs) benzene and diesel particulate matter (diesel PM).

However, NHTSA's environmental analysis indicates that emissions of the MSATs acetaldehyde, acrolein, 1,3-butadiene, and formaldehyde would increase under some alternatives, with the largest increases in emissions of these MSATs projected to occur under Alternative 8 in most future years. This occurs because the rates at which these MSATs are emitted during fuel refining and distribution are very low relative to their emission rates during vehicle use. As a consequence, the reductions in their total emissions during fuel refining and distribution that result from lower fuel use are insufficient to offset the increases in emissions that result from additional vehicle use. The amount by which increased tailpipe emissions of these MSATs exceeds the reductions in their emissions during fuel refining and distribution increases for alternatives that require larger improvements in fuel economy, and in most future years is smallest under Alternative 2 (which would increase CAFE standards least rapidly among the action alternatives) and largest under Alternative 8 (which would require the most rapid increase in fuel economy). Thus while Alternative 8 is the environmentally preferable alternative on the basis of CO_2 and other GHGs, most criteria air pollutants, and some MSATs, other alternatives are environmentally preferable from the standpoint of the criteria air pollutants fine particulate matter and sulfur oxides, as well as the MSATs acetaldehyde, acrolein, 1,3-butadiene, and formaldehyde. Overall, however, NHTSA considers Alternative 8 to be the Environmentally Preferable Alternative.

For additional discussion regarding the alternatives considered by the agency in reaching its decision, including the Environmentally Preferable Alternative, *see* Section IV.F of this final rule. For a discussion of the environmental impacts associated with each alternative, *see* Chapters 3 and 4 of the FEIS.

Factors Balanced by NHTSA in Making Its Decision

For discussion of the factors balanced by NHTSA in making its decision, see Sections IV.D. and IV.F of this final rule.

How the Factors and Considerations Balanced by NHTSA Entered Into Its Decision

For discussion of how the factors and considerations balanced by the agency entered into NHTSA's Decision, *see* Section IV.F of this final rule.

The Agency's Preferences Among Alternatives Based on Relevant Factors, Including Economic and Technical Considerations and Agency Statutory Missions

For discussion of the agency's preferences among alternatives based on relevant factors, including economic and technical considerations, *see* Section IV.F of this final rule.

Mitigation

The CEQ regulations specify that a ROD must "state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." 49 CFR 1505.2(c). The majority of the environmental effects of NHTSA's action are positive, *i.e.,* beneficial environmental impacts, and would not raise issues of mitigation. The only negative environmental impacts are the projected increase in emissions of carbon monoxide and certain air toxics, as discussed above under the Environmentally Preferable Alternative, and in Section 2.6 and Chapter 5 of the FEIS. The agency forecasts these increases because, under all the alternatives analyzed in the EIS, increase in vehicle use due to improved fuel economy is projected to result in growth in total miles traveled by passenger cars and light trucks. This growth is exacerbated by the expected growth in the number of passenger cars and light trucks in use in the United States. The growth in travel outpaces emissions reductions for some pollutants, resulting in projected increases for these pollutants.

NHTSA's authority to promulgate new fuel economy standards is limited and does not allow regulation of vehicle emissions or of factors affecting vehicle emissions, including driving habits. Consequently, under the CAFE program, NHTSA must set standards but is unable to take steps to mitigate the impacts of these standards. However, we note that the Department of Transportation is currently implementing initiatives that work toward the stated Secretarial policy goal of reducing annual vehicle miles traveled. Chapter 5 of the FEIS outlines a number of other initiatives across government that could ameliorate the environmental impacts of motor vehicle use.

L. Regulatory Notices and Analyses

Following is a discussion of regulatory notices and analyses relevant to this rulemaking.

1. Executive Order 12866 and DOT Regulatory Policies and Procedures

Executive Order 12866, "Regulatory Planning and Review" (58 FR 51735, Oct. 4, 1993), provides for making determinations whether a regulatory action is "significant" and therefore subject to OMB review and to the requirements of the Executive Order. The Order defines a "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The rulemaking proposed in this NPRM is economically significant. Accordingly, OMB reviewed it under Executive Order 12866. The rule is also significant within the meaning of the Department of Transportation's Regulatory Policies and Procedures.

The benefits and costs of this rule are described above. Because the rule is economically significant under both the Department of Transportation's procedures and OMB guidelines, the agency has prepared a Final Regulatory Impact Analysis (FRIA) and placed it in the docket and on the agency's Web site. Further, pursuant to OMB Circular A–4, we have prepared a formal probabilistic uncertainty analysis for this rule. The

[776] Reductions in emissions of two criteria air pollutants, fine particulate matter ($PM_{2.5}$) and sulfur oxides (SO_X), are forecast to be slightly larger for Alternative 9 (TCTB) than for Alternative 8. Because the estimates of health benefits depend most critically on changes in particulate matter emissions, this causes the health benefits estimates reported in this FEIS to be slightly larger for Alternative 9 than for Alternative 8. *See* Section 3.3 of the FEIS. Nonetheless, for the other reasons explained above, NHTSA considers Alternative 8 to be the overall Environmentally Preferable Alternative.

circular requires such an analysis for complex rules where there are large, multiple uncertainties whose analysis raises technical challenges or where effects cascade and where the impacts of the rule exceed $1 billion. This final rule meets these criteria on all counts.

2. National Environmental Policy Act

Under NEPA, a Federal agency must prepare an Environmental Impact Statement (EIS) on proposed actions that could significantly impact the quality of the human environment. The requirement is designed to serve three major functions: (1) To provide the decisionmaker(s) with a detailed description of the potential environmental impacts of a proposed action prior to its adoption, (2) to rigorously explore and evaluate all reasonable alternatives, and (3) to inform the public of, and allow comment on, such efforts.

In addition, the CEQ regulations emphasize agency cooperation early in the NEPA process, and allow a lead agency (in this case, NHTSA) to request the assistance of other agencies that either have jurisdiction by law or have special expertise regarding issues considered in an EIS.[777] NHTSA invited EPA to be a cooperating agency because of its special expertise in the areas of climate change and air quality. On May 12, 2009, EPA agreed to become a cooperating agency.[778]

NHTSA, in cooperation with EPA, prepared a draft EIS (DEIS), solicited public comments in writing and in a public hearing, and prepared a final EIS (FEIS) responding to those comments. Specifically, in April 2009, NHTSA published an NOI to prepare an EIS for proposed MYs 2012–2016 CAFE standards.[779] *See* 40 CFR 1501.7.

On September 25, 2009, EPA issued its Notice of Availability of the DEIS,[780] triggering the 45-day public comment period. *See* 74 FR 48951. *See* also 40 CFR 1506.10. In accordance with CEQ regulations, the public was invited to submit written comments on the DEIS until November 9, 2009. *See* 40 CFR 1503, *et seq.*

NHTSA mailed (both electronically and through regular U.S. mail) over 500 copies of the DEIS to interested parties, including Federal, State, and local officials and agencies; elected officials, environmental and public interest groups; Native American tribes; and other interested individuals. NHTSA held a public hearing on the DEIS at the National Transportation Safety Board Conference Center in Washington, DC on October 30, 2009.

NHTSA received 11 written comments from interested stakeholders, including Federal agencies, state agencies, environmental advocacy groups, and private citizens. In addition, three interested parties spoke at the public hearing. The transcript from the public hearing and written comments submitted to NHTSA are part of the administrative record, and are available on the Federal Docket, which can be found on the Web at *http://www.regulations.gov,* Reference Docket No. NHTSA–2009–0059.

NHTSA reviewed and analyzed all comments received during the public comment period and revised the FEIS in response to comments on the EIS where appropriate.[781] For a more detailed discussion of NHTSA's scoping and comment periods, *see* Section 1.5 and Chapter 10 of the FEIS.

On February 22, 2010, NHTSA submitted the FEIS to the EPA. NHTSA also mailed (both electronically and through regular U.S. mail) over 500 copies of the FEIS to interested parties and posted the FEIS on its Web site, *http://www.nhtsa.gov/portal/fueleconomy.jsp.* On March 3, 2010, EPA published a Notice of Availability of the FEIS in the **Federal Register.** *See* 75 FR 9596.

The FEIS analyzes and discloses the potential environmental impacts of the proposed MYs 2012–2016 CAFE standards for the total fleet of passenger cars and light trucks and reasonable alternative standards for the NHTSA CAFE Program pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA, DOT Order 5610.1C, and NHTSA regulations.[782] The FEIS compared the potential environmental impacts of alternative mile per gallon (mpg) levels considered by NHTSA for the final rule. It also analyzed direct, indirect, and cumulative impacts and analyzes impacts in proportion to their significance. See the FEIS and the FEIS Summary for a discussion of the environmental impacts analyzed. Docket Nos. NHTSA–2009–0059–0140, NHTSA–2009–0059–0141.

The MYs 2012–2016 CAFE standards adopted in this final rule have been informed by analyses contained in the *Final Environmental Impact Statement, Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2012–2016,* Docket No. NHTSA–2009–0059 (FEIS). For purposes of this rulemaking, the agency referred to an extensive compilation of technical and policy documents available in NHTSA's EIS/Rulemaking docket and EPA's docket. NHTSA's EIS and rulemaking docket and EPA's rulemaking docket can be found on the Web at *http://www.regulations.gov*, Reference Docket Nos.: NHTSA–2009–0059 (EIS and Rulemaking) and EPA–HQ–OAR–2009–0472 (EPA Rulemaking).

Based on the foregoing, the agency concludes that the environmental analysis and public involvement process complies with NEPA implementing regulations issued by CEQ, DOT Order 5610.1C, and NHTSA regulations.[783]

3. Clean Air Act (CAA)

The CAA (42 U.S.C. 7401) is the primary Federal legislation that addresses air quality. Under the authority of the CAA and subsequent amendments, the EPA has established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, which are relatively commonplace pollutants that can accumulate in the atmosphere as a result of normal levels of human activity. The EPA is required to review the NAAQS every five years and to change the levels of the standards

[777] 40 CFR 1501.6.

[778] Consistent with the National Fuel Efficiency Policy that the President announced on May 19, 2009, EPA and NHTSA published their Notice of Upcoming Joint Rulemaking to ensure a coordinated National Program on GHG emissions and fuel economy for passenger cars, light-duty trucks, and medium-duty passenger vehicles. NHTSA takes no position on whether the EPA proposed rule on GHG emissions could be considered a "connected action" under the CEQ regulation at 40 CFR Section 1508.25. For purposes of the EIS, however, NHTSA decided to treat the EPA proposed rule as if it were a "connected action" under that regulation to improve the usefulness of the EIS for NHTSA decisionmakers and the public. NHTSA is aware that Section 7(c) of the Energy Supply and Environmental Coordination Act of 1974 expressly exempts from NEPA requirements EPA action taken under the CAA. *See* 15 U.S.C. 793(c)(1).

[779] *See* Notice of Intent to Prepare an Environmental Impact Statement for New Corporate Average Fuel Economy Standards, 74 FR 14857 (Apr. 1, 2009).

[780] Also on September 25, 2009, NHTSA published a **Federal Register** Notice of Availability of its DEIS. *See* 74 FR 48894. NHTSA's Notice of Availability also announced the date and location of a public hearing, and invited the public to participate at the hearing on October 30, 2009, in Washington, DC. See *id.*

[781] The agency also changed the FEIS as a result of updated information that became available after issuance of the DEIS.

[782] NEPA is codified at 42 U.S.C. 4321–4347. CEQ NEPA implementing regulations are codified at 40 Code of Federal Regulations (CFR) Parts 1500–1508. NHTSA NEPA implementing regulations are codified at 49 CFR part 520.

[783] NEPA is codified at 42 U.S.C. 4321–4347. CEQ's NEPA implementing regulations are codified at 40 CFR parts 1500–1508, and NHTSA's NEPA implementing regulations are codified at 49 CFR part 520.

if warranted by new scientific information.

The air quality of a geographic region is usually assessed by comparing the levels of criteria air pollutants found in the atmosphere to the levels established by the NAAQS. Concentrations of criteria pollutants within the air mass of a region are measured in parts of a pollutant per million parts of air (ppm) or in micrograms of a pollutant per cubic meter ($\mu g/m^3$) of air present in repeated air samples taken at designated monitoring locations. These ambient concentrations of each criteria pollutant are compared to the permissible levels specified by the NAAQS in order to assess whether the region's air quality is potentially unhealthful.

When the measured concentrations of a criteria pollutant within a geographic region are below those permitted by the NAAQS, the region is designated by the EPA as an attainment area for that pollutant, while regions where concentrations of criteria pollutants exceed Federal standards are called nonattainment areas (NAAs). Former NAAs that have attained the NAAQS are designated as maintenance areas. Each NAA is required to develop and implement a State Implementation Plan (SIP), which documents how the region will reach attainment levels within time periods specified in the CAA. In maintenance areas, the SIP documents how the State intends to maintain compliance with the NAAQS. When EPA changes a NAAQS, States must revise their SIPs to address how they will attain the new standard.

Section 176(c) of the CAA prohibits Federal agencies from taking actions in nonattainment or maintenance areas that do not "conform" to the State Implementation Plan (SIP). The purpose of this conformity requirement is to ensure that Federal activities do not interfere with meeting the emissions targets in the SIPs, do not cause or contribute to new violations of the NAAQS, and do not impede the ability to attain or maintain the NAAQS. The EPA has issued two sets of regulations to implement CAA Section 176(c):

- The Transportation Conformity Rules (40 CFR part 51 subpart T), which apply to transportation plans, programs, and projects funded under title 23 United States Code (U.S.C.) or the Federal Transit Act. Highway and transit infrastructure projects funded by FHWA or the Federal Transit Administration (FTA) usually are subject to transportation conformity.
- The General Conformity Rules (40 CFR part 51 subpart W) apply to all other Federal actions not covered under transportation conformity. The General Conformity Rules established emissions thresholds, or *de minimis* levels, for use in evaluating the conformity of a project. If the net emission increases due to the project are less than these thresholds, then the project is presumed to conform and no further conformity evaluation is required. If the emission increases exceed any of these thresholds, then a conformity determination is required. The conformity determination may entail air quality modeling studies, consultation with EPA and State air quality agencies, and commitments to revise the SIP or to implement measures to mitigate air quality impacts.

The CAFE standards and associated program activities are not funded under title 23 U.S.C. or the Federal Transit Act. Further, CAFE standards are established by NHTSA and are not an action undertaken by FHWA or FTA. Accordingly, the CAFE standards are not subject to transportation conformity.

The General Conformity Rules contain several exemptions applicable to "Federal actions," which the conformity regulations define as: "any activity engaged in by a department, agency, or instrumentality of the Federal Government, or any activity that a department, agency or instrumentality of the Federal Government supports in any way, provides financial assistance for, licenses, permits, or approves, other than activities [subject to transportation conformity]." 40 CFR 51.852. "Rulemaking and policy development and issuance" are exempted at 40 CFR 51.853(c)(2)(iii). Since NHTSA's CAFE standards involve a rulemaking process, its action is exempt from general conformity. Also, emissions for which a Federal agency does not have a "continuing program responsibility" are not considered "indirect emissions" subject to general conformity under 40 CFR 51.852. "Emissions that a Federal agency has a continuing program responsibility for means emissions that are specifically caused by an agency carrying out its authorities, and does not include emissions that occur due to subsequent activities, unless such activities are required by the Federal agency." 40 CFR 51.852. Emissions that occur as a result of the final CAFE standards are not caused by NHTSA carrying out its statutory authorities and clearly occur due to subsequent activities, including vehicle manufacturers' production of passenger car and light truck fleets and consumer purchases and driving behavior. Thus, changes in any emissions that result from NHTSA's final CAFE standards are not those for which the agency has a "continuing program responsibility" and NHTSA is confident that a general conformity determination is not required. NHTSA has evaluated the potential impacts of air emissions under NEPA.

4. National Historic Preservation Act (NHPA)

The NHPA (16 U.S.C. 470) sets forth government policy and procedures regarding "historic properties"—that is, districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). *See* also 36 CFR part 800. Section 106 of the NHPA requires Federal agencies to "take into account" the effects of their actions on historic properties. The agency concludes that the NHPA is not applicable to NHTSA's Decision, because it does not directly involve historic properties. The agency has, however, conducted a qualitative review of the related direct, indirect, and cumulative impacts, positive or negative, of the alternatives on potentially affected resources, including historic and cultural resources. *See* Sections 3.5 and 4.5 of the FEIS.

5. Executive Order 12898 (Environmental Justice)

Under Executive Order 12898, Federal agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. NHTSA complied with this order by identifying and addressing the potential effects of the alternatives on minority and low-income populations in Sections 3.5 and 4.5 of the FEIS, where the agency set forth a qualitative analysis of the cumulative effects of the alternatives on these populations.

6. Fish and Wildlife Conservation Act (FWCA)

The FWCA (16 U.S.C. 2900) provides financial and technical assistance to States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife. In addition, the Act encourages all Federal agencies and departments to utilize their authority to conserve and to promote conservation of nongame fish and wildlife and their habitats. The agency concludes that the FWCA is not applicable to NHTSA's Decision, because it does not directly involve fish and wildlife.

7. Coastal Zone Management Act (CZMA)

The Coastal Zone Management Act (16 U.S.C. 1450) provides for the

preservation, protection, development, and (where possible) restoration and enhancement of the nation's coastal zone resources. Under the statute, States are provided with funds and technical assistance in developing coastal zone management programs. Each participating State must submit its program to the Secretary of Commerce for approval. Once the program has been approved, any activity of a Federal agency, either within or outside of the coastal zone, that affects any land or water use or natural resource of the coastal zone must be carried out in a manner that is consistent, to the maximum extent practicable, with the enforceable policies of the State's program.

The agency concludes that the CZMA is not applicable to NHTSA's Decision, because it does not involve an activity within, or outside of, the nation's coastal zones. The agency has, however, conducted a qualitative review of the related direct, indirect, and cumulative impacts, positive or negative, of the alternatives on potentially affected resources, including coastal zones. *See* Sections 3.5 and 4.5 of the FEIS.

8. Endangered Species Act (ESA)

Under Section 7(a)(2) of the Endangered Species Act (ESA) Federal agencies must ensure that actions they authorize, fund, or carry out are "not likely to jeopardize" federally listed threatened or endangered species or result in the destruction or adverse modification of the designated critical habitat of these species. 16 U.S.C. 1536(a)(2). If a Federal agency determines that an agency action may affect a listed species or designated critical habitat, it must initiate consultation with the appropriate Service—the U.S. Fish and Wildlife Service (FWS) of the Department of the Interior and/or National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) of the Department of Commerce, depending on the species involved—in order to ensure that the action is not likely to jeopardize the species or destroy or adversely modify designated critical habitat. *See* 50 CFR 402.14. Under this standard, the Federal agency taking action evaluates the possible effects of its action and determines whether to initiate consultation. *See* 51 FR 19926, 19949 (Jun. 3, 1986).

NHTSA has reviewed applicable ESA regulations, case law, guidance, and rulings in assessing the potential for impacts to threatened and endangered species from the proposed CAFE standards. NHTSA believes that the agency's action of setting CAFE standards, which will result in nationwide fuel savings and, consequently, emissions reductions from what would otherwise occur in the absence of the agency's CAFE standards, does not require consultation with NOAA Fisheries Service or the FWS under section 7(a)(2) of the ESA. For additional discussion of the agency's rationale, see Appendix G of the FEIS. Accordingly, NHTSA has concluded its review of this action under Section 7 of the ESA.

NHTSA has worked with EPA to assess ESA requirements and develop the agencies' responses to comments addressing this issue. NHTSA notes that EPA has reached the same conclusion as NHTSA, and has determined that ESA consultation is not required for its action taken today pursuant to the Clean Air Act. EPA's determination with regard to ESA is set forth in its response to comments regarding ESA requirements, and can be found in EPA's Response to Comments document, which EPA will place in the EPA docket for this rulemaking (OAR–2009–0472), and on the EPA Web site. As set forth therein, EPA adopts the reasoning of NHTSA's response in Appendix G of the FEIS as applied to EPA's rulemaking action.

9. Floodplain Management (Executive Order 11988 & DOT Order 5650.2)

These Orders require Federal agencies to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to restore and preserve the natural and beneficial values served by floodplains. Executive Order 11988 also directs agencies to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains through evaluating the potential effects of any actions the agency may take in a floodplain and ensuring that its program planning and budget requests reflect consideration of flood hazards and floodplain management. DOT Order 5650.2 sets forth DOT policies and procedures for implementing Executive Order 11988. The DOT Order requires that the agency determine if a proposed action is within the limits of a base floodplain, meaning it is encroaching on the floodplain, and whether this encroachment is significant. If significant, the agency is required to conduct further analysis of the proposed action and any practicable alternatives. If a practicable alternative avoids floodplain encroachment, then the agency is required to implement it.

In this rulemaking, the agency is not occupying, modifying and/or encroaching on floodplains. The agency, therefore, concludes that the Orders are not applicable to NHTSA's Decision. The agency has, however, conducted a review of the alternatives on potentially affected resources, including floodplains. *See* Section 4.5 of the FEIS.

10. Preservation of the Nation's Wetlands (Executive Order 11990 & DOT Order 5660.1a)

These Orders require Federal agencies to avoid, to the extent possible, undertaking or providing assistance for new construction located in wetlands unless the agency head finds that there is no practicable alternative to such construction and that the proposed action includes all practicable measures to minimize harms to wetlands that may result from such use. Executive Order 11990 also directs agencies to take action to minimize the destruction, loss or degradation of wetlands in "conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities." DOT Order 5660.1a sets forth DOT policy for interpreting Executive Order 11990 and requires that transportation projects "located in or having an impact on wetlands" should be conducted to assure protection of the Nation's wetlands. If a project does have a significant impact on wetlands, an EIS must be prepared.

The agency is not undertaking or providing assistance for new construction located in wetlands. The agency, therefore, concludes that these Orders do not apply to NHTSA's Decision. The agency has, however, conducted a review of the alternatives on potentially affected resources, including wetlands. *See* Section 4.5 of the FEIS.

11. Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), Executive Order 13186

The MBTA provides for the protection of migratory birds that are native to the United States by making it illegal for anyone to pursue, hunt, take, attempt to take, kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird covered under the statute. The statute prohibits both intentional and unintentional acts. Therefore, the statute is violated if an agency acts in a manner that harms a migratory bird, whether it was intended or not. *See, e.g., United States* v. *FMC Corp.,* 572 F.2d 902 (2nd Cir. 1978).

The BGEPA (16 U.S.C. 668) prohibits any form of possession or taking of both

bald and golden eagles. Under the BGEPA, violators are subject to criminal and civil sanctions as well as an enhanced penalty provision for subsequent offenses.

Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," helps to further the purposes of the MBTA by requiring a Federal agency to develop a Memorandum of Understanding (MOU) with the Fish and Wildlife Service when it is taking an action that has (or is likely to have) a measurable negative impact on migratory bird populations.

The agency concludes that the MBTA, BGEPA, and Executive Order 13186 do not apply to NHTSA's Decision, because there is no disturbance and/or take involved in NHTSA's Decision.

12. Department of Transportation Act (Section 4(f))

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303), as amended by Public Law § 109–59, is designed to preserve publicly owned parklands, waterfowl and wildlife refuges, and significant historic sites. Specifically, Section 4(f) of the Department of Transportation Act provides that DOT agencies cannot approve a transportation program or project that requires the use of any publicly owned land from a significant public park, recreation area, or wildlife and waterfowl refuge, or any land from a significant historic site, unless a determination is made that:

- There is no feasible and prudent alternative to the use of land, and
- The program or project includes all possible planning to minimize harm to the property resulting from use, or
- A transportation use of Section 4(f) property results in a *de minimis* impact.

The agency concludes that the Section 4(f) is not applicable to NHTSA's Decision because this rulemaking does not require the use of any publicly owned land. For a more detailed discussion, *please see* Section 3.5 of the FEIS.

13. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.,* as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.,* small businesses, small organizations, and small governmental jurisdictions). The Small Business Administration's regulations at 13 CFR part 121 define a small business, in part, as a business entity "which operates primarily within the United States." 13 CFR 121.105(a). No regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities.

I certify that this final rule will not have a significant economic impact on a substantial number of small entities. The following is NHTSA's statement providing the factual basis for the certification (5 U.S.C. 605(b)).

The final rule directly affects twenty-one large single stage motor vehicle manufacturers.[784] According to current information, the final rule would also affect two small domestic single stage motor vehicle manufacturers, Saleen and Tesla.[785] According to the Small Business Administration's small business size standards (*see* 13 CFR 121.201), a single stage automobile or light truck manufacturer (NAICS code 336111, Automobile Manufacturing; 336112, Light Truck and Utility Vehicle Manufacturing) must have 1,000 or fewer employees to qualify as a small business. Both Saleen and Tesla have less than 1,000 employees and make less than 1,000 vehicles per year. We believe that the rulemaking would not have a significant economic impact on these small vehicle manufacturers because under part 525, passenger car manufacturers making less than 10,000 vehicles per year can petition NHTSA to have alternative standards set for those manufacturers. Tesla produces only electric vehicles with fuel economy values far above those finalized today, so we would not expect them to need to petition for relief. Saleen modifies a very small number of vehicles produced by one of the 21 large single-stage manufacturers, and currently does not meet the 27.5 mpg passenger car standard, nor is it anticipated to be able to meet the standards proposed today. However, Saleen already petitions the agency for relief. If the standard is raised, it has no meaningful impact on Saleen, because it must still go through the same process to petition for relief. Ferrari commented that NHTSA will not necessarily always grant the petitions of small vehicle manufacturers for alternative standards, and that therefore the relief is not guaranteed.[786] In response, NHTSA notes that the fact that the agency may not grant a petition for an alternative standard for one manufacturer at one time does not mean that the mechanism for handling small businesses is unavailable for all. Thus, given that there already is a mechanism for handling small businesses, which is the purpose of the Regulatory Flexibility Act, a regulatory flexibility analysis was not prepared.

14. Executive Order 13132 (Federalism)

Executive Order 13132 requires NHTSA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." The Order defines the term "Policies that have federalism implications" to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Under the Order, NHTSA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or NHTSA consults with State and local officials early in the process of developing the proposed regulation. Several state agencies provided comments to the proposed standards.

Additionally, in his January 26 memorandum, the President requested NHTSA to "consider whether any provisions regarding preemption are consistent with the EISA, the Supreme Court's decision in *Massachusetts* v. *EPA* and other relevant provisions of law and the policies underlying them." NHTSA is deferring consideration of the preemption issue. The agency believes that it is unnecessary to address the issue further at this time because of the consistent and coordinated Federal standards that will apply nationally under the National Program.

[784] BMW, Daimler (Mercedes), Chrysler, Ferrari, Ford, Subaru, General Motors, Honda, Hyundai, Kia, Lotus, Maserati, Mazda, Mitsubishi, Nissan, Porsche, Subaru, Suzuki, Tata, Toyota, and Volkswagen.

[785] The Regulatory Flexibility Act only requires analysis of small domestic manufacturers. There are two passenger car manufacturers that we know of, Saleen and Tesla, and no light truck manufacturers.

[786] We note that Ferrari would not currently qualify for such an alternative standard, because it does not manufacture fewer than 10,000 passenger automobiles per year, as required by 49 U.S.C. 32902(d) for exemption from the main passenger car CAFE standard.

15. Executive Order 12988 (Civil Justice Reform)

Pursuant to Executive Order 12988, "Civil Justice Reform,"[787] NHTSA has considered whether this rulemaking would have any retroactive effect. This final rule does not have any retroactive effect.

16. Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal agencies to prepare a written assessment of the costs, benefits, and other effects of a proposed or final rule that includes a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than $100 million in any one year (adjusted for inflation with base year of 1995). Adjusting this amount by the implicit gross domestic product price deflator for 2006 results in $126 million (116.043/92.106 = 1.26). Before promulgating a rule for which a written statement is needed, section 205 of UMRA generally requires NHTSA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows NHTSA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the agency publishes with the final rule an explanation why that alternative was not adopted.

This final rule will not result in the expenditure by State, local, or tribal governments, in the aggregate, of more than $126 million annually, but it will result in the expenditure of that magnitude by vehicle manufacturers and/or their suppliers. In promulgating this final rule, NHTSA considered a variety of alternative average fuel economy standards lower and higher than those proposed. NHTSA is statutorily required to set standards at the maximum feasible level achievable by manufacturers based on its consideration and balancing of relevant factors and has concluded that the final fuel economy standards are the maximum feasible standards for the passenger car and light truck fleets for MYs 2012–2016 in light of the statutory considerations.

[787] 61 FR 4729 (Feb. 7, 1996).

17. Regulation Identifier Number

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

18. Executive Order 13045

Executive Order 13045[788] applies to any rule that: (1) Is determined to be economically significant as defined under E.O. 12866, and (2) concerns an environmental, health, or safety risk that NHTSA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, we must evaluate the environmental health or safety effects of the proposed rule on children, and explain why the proposed regulation is preferable to other potentially effective and reasonably foreseeable alternatives considered by us.

Chapter 4 of NHTSA's FEIS notes that breathing PM can cause respiratory ailments, heart attack, and arrhythmias (Dockery *et al.* 1993, Samet *et al.* 2000, Pope *et al.* 1995, 2002, 2004, Pope and Dockery 2006, Dominici *et al.* 2006, Laden *et al.* 2006, all in Ebi *et al.* 2008).[789] Populations at greatest risk could include children, the elderly, and those with heart and lung disease, diabetes (Ebi *et al.* 2008), and high blood pressure (Künzli *et al.* 2005, in Ebi *et al.* 2008). Chronic exposure to PM could decrease lifespan by 1 to 3 years (Pope 2000, in American Lung Association 2008). Increasing PM concentrations are expected to have a measurable adverse impact on human health (Confalonieri *et al.* 2007).

Additionally, the FEIS notes that substantial morbidity and childhood mortality has been linked to water- and food-borne diseases. Climate change is projected to alter temperature and the hydrologic cycle through changes in precipitation, evaporation, transpiration, and water storage. These changes, in turn, potentially affect water-borne and food-borne diseases, such as salmonellosis, campylobacter, leptospirosis, and pathogenic species of vibrio. They also have a direct impact on surface water availability and water quality. Increased temperatures, greater evaporation, and heavy rain events have been associated with adverse impacts on drinking water through increased waterborne diseases, algal blooms, and toxins (Chorus and Bartram 1999, Levin *et al.* 2002, Johnson and Murphy 2004, all in Epstein *et al.* 2005). A seasonal signature has been associated with waterborne disease outbreaks (EPA 2009b). In the United States, 68 percent of all waterborne diseases between 1948 and 1994 were observed after heavy rainfall events (Curriero *et al.* 2001a, in Epstein *et al.* 2005).

Climate change could further impact a pathogen by directly affecting its life cycle (Ebi *et al.* 2008). The global increase in the frequency, intensity, and duration of red tides could be linked to local impacts already associated with climate change (Harvell *et al.* 1999, in Epstein *et al.* 2005); toxins associated with red tide directly affect the nervous system (Epstein *et al.* 2005).

Many people do not report or seek medical attention for their ailments of water-borne or food-borne diseases; hence, the number of actual cases with these diseases is greater than clinical records demonstrate (Mead *et al.* 1999, in Ebi *et al.* 2008). Many of the gastrointestinal diseases associated with water-borne and food-borne diseases can be self-limiting; however, vulnerable populations include young children, those with a compromised immune system, and the elderly.

Thus, as detailed in the FEIS, NHTSA has evaluated the environmental health and safety effects of agency's action on children.

19. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) requires NHTA to evaluate and use existing voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law (*e.g.,* the statutory provisions regarding NHTSA's vehicle safety authority) or otherwise impractical.

Voluntary consensus standards are technical standards developed or adopted by voluntary consensus standards bodies. Technical standards are defined by the NTTAA as "performance-base or design-specific technical specification and related management systems practices." They pertain to "products and processes, such as size, strength, or technical performance of a product, process or material."

Examples of organizations generally regarded as voluntary consensus standards bodies include the American Society for Testing and Materials (ASTM), the Society of Automotive

[788] 62 FR 19885 (Apr. 23, 1997).

[789] The references referred to in the remainder of this section are detailed in Section 7.4.5 of the FEIS.

Engineers (SAE), and the American National Standards Institute (ANSI). If NHTSA does not use available and potentially applicable voluntary consensus standards, we are required by the Act to provide Congress, through OMB, an explanation of the reasons for not using such standards.

There are currently no voluntary consensus standards relevant to today's final CAFE standards.

20. Executive Order 13211

Executive Order 13211[790] applies to any rule that: (1) Is determined to be economically significant as defined under E.O. 12866, and is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. If the regulatory action meets either criterion, we must evaluate the adverse energy effects of the final rule and explain why the final regulation is preferable to other potentially effective and reasonably feasible alternatives considered by us.

The final rule seeks to establish passenger car and light truck fuel economy standards that will reduce the consumption of petroleum and will not have any adverse energy effects. Accordingly, this final rulemaking action is not designated as a significant energy action.

21. Department of Energy Review

In accordance with 49 U.S.C. 32902(j)(1), we submitted this final rule to the Department of Energy for review. That Department did not make any comments that we have not addressed.

22. Privacy Act

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an organization, business, labor union, etc.). You may review DOT's complete Privacy Act statement in the **Federal Register** (65 FR 19477–78, April 11, 2000) or you may visit *http://www.dot.gov/privacy.html.*

List of Subjects

40 CFR Part 85

Confidential business information, Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Warranties.

40 CFR Part 86

Administrative practice and procedure, Confidential business information, Incorporation by reference, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements.

40 CFR Part 600

Administrative practice and procedure, Electric power, Fuel economy, Incorporation by reference, Labeling, Reporting and recordkeeping requirements.

49 CFR Part 531 and 533

Fuel economy.

49 CFR Part 536 and 537

Fuel economy, Reporting and recordkeeping requirements.

49 CFR Part 538

Administrative practice and procedure, Fuel economy, Motor vehicles, Reporting and recordkeeping requirements.

Environmental Protection Agency

40 CFR Chapter I

■ Accordingly, EPA amends 40 CFR Chapter I as follows:

PART 85—CONTROL OF AIR POLLUTION FROM MOBILE SOURCES

■ 1. The authority citation for part 85 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

Subpart T—[Amended]

■ 2. Section 85.1902 is amended by revising paragraphs (b) and (d) to read as follows:

§ 85.1902 Definitions.

* * * * *

(b) The phrase *emission-related defect* shall mean:

(1) A defect in design, materials, or workmanship in a device, system, or assembly described in the approved Application for Certification (required by 40 CFR 86.1843–01 and 86.1844–01, and by 40 CFR 86.001–22 and similar provisions of 40 CFR part 86) which affects any parameter or specification enumerated in appendix VIII of this part; or

(2) A defect in the design, materials, or workmanship in one or more emissions control or emission-related parts, components, systems, software or elements of design which must function properly to assure continued compliance with vehicle emission requirements, including compliance with CO_2, CH_4, N_2O, and carbon-related exhaust emission standards;

* * * * *

(d) The phrase *Voluntary Emissions Recall* shall mean a repair, adjustment, or modification program voluntarily initiated and conducted by a manufacturer to remedy any emission-related defect for which direct notification of vehicle or engine owners has been provided, including programs to remedy defects related to emissions standards for CO_2, CH_4, N_2O, and/or carbon-related exhaust emissions.

* * * * *

PART 86—CONTROL OF EMISSIONS FROM NEW AND IN–USE HIGHWAY VEHICLES AND ENGINES

■ 3. The authority citation for part 86 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 4. Section 86.1 is amended by adding paragraphs (b)(2)(xxxix) through (xl) to read as follows:

§ 86.1 Reference materials.

* * * * *

(b) * * *

(2) * * *

(xxxix) SAE J2064, Revised December 2005, R134a Refrigerant Automotive Air-Conditioned Hose, IBR approved for § 86.166–12.

(xl) SAE J2765, October, 2008, Procedure for Measuring System COP [Coefficient of Performance] of a Mobile Air Conditioning System on a Test Bench, IBR approved for § 86.1866–12.

* * * * *

Subpart B—[Amended]

■ 5. Section 86.111–94 is amended by revising paragraph (b) introductory text to read as follows:

§ 86.111–94 Exhaust gas analytical system.

* * * * *

(b) *Major component description.* The exhaust gas analytical system, Figure B94–7, consists of a flame ionization detector (FID) (heated, 235 °±15 °F (113 °±8 °C) for methanol-fueled vehicles) for the determination of THC, a methane analyzer (consisting of a gas chromatograph combined with a FID) for the determination of CH_4, non-dispersive infrared analyzers (NDIR) for the determination of CO and CO_2, a chemiluminescence analyzer (CL) for the determination of NO_X, and an analyzer meeting the requirements specified in 40 CFR 1065.275 for the determination of N_2O (required for 2015 and later model year vehicles). A heated

[790] 66 FR 28355 (May 18, 2001).

flame ionization detector (HFID) is used for the continuous determination of THC from petroleum-fueled diesel-cycle vehicles (may also be used with methanol-fueled diesel-cycle vehicles), Figure B94–5 (or B94–6). The analytical system for methanol consists of a gas chromatograph (GC) equipped with a flame ionization detector. The analysis for formaldehyde is performed using high-pressure liquid chromatography (HPLC) of 2,4-dinitrophenylhydrazine (DNPH) derivatives using ultraviolet (UV) detection. The exhaust gas analytical system shall conform to the following requirements:

* * * * *

■ 6. Section 86.113–04 is amended by revising the entry for RVP in the table in paragraph (a)(1) to read as follows:

§ 86.113–04 Fuel specifications.

* * * * *

(a) * * *

(1) * * *

Item	ASTM test method No.	Value
* * * * *	*	*
RVP [2, 3]	D 323	8.7–9.2 (60.0–63.4)
* * * * *	*	*

* * * * *

■ 7. A new § 86.127–12 is added to read as follows:

§ 86.127–12 Test procedures; overview.

Applicability. The procedures described in this subpart are used to determine the conformity of vehicles with the standards set forth in subpart A or S of this part (as applicable) for light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles. Except where noted, the procedures of paragraphs (a) through (d) of this section, and the contents of §§ 86.135–00, 86.136–90, 86.137–96, 86.140–94, 86.142–90, and 86.144–94 are applicable for determining emission results for vehicle exhaust emission systems designed to comply with the FTP emission standards, or the FTP emission element required for determining compliance with composite SFTP standards. Paragraph (e) of this section discusses fuel spitback emissions. Paragraphs (f) and (g) of this section discuss the additional test elements of aggressive driving (US06) and air conditioning (SC03) that comprise the exhaust emission components of the SFTP. Paragraphs (h) and (i) of this section are applicable to all vehicle emission test procedures.

(a) The overall test consists of prescribed sequences of fueling, parking, and operating test conditions. Vehicles are tested for any or all of the following emissions, depending upon the specific test requirements and the vehicle fuel type:

(1) Gaseous exhaust THC, NMHC, NMOG, CO, NO_X, CO_2, N_2O, CH_4, CH_3OH, C_2H_5OH, C_2H_4O, and HCHO.

(2) Particulates.

(3) Evaporative HC (for gasoline-fueled, methanol-fueled and gaseous-fueled vehicles) and CH_3OH (for methanol-fueled vehicles). The evaporative testing portion of the procedure occurs after the exhaust emission test; however, exhaust emissions need not be sampled to complete a test for evaporative emissions.

(4) Fuel spitback (this test is not required for gaseous-fueled vehicles).

(b) The FTP Otto-cycle exhaust emission test is designed to determine gaseous THC, NMHC, NMOG, CO, CO_2, CH_4, NO_X, N_2O, and particulate mass emissions from gasoline-fueled, methanol-fueled and gaseous-fueled Otto-cycle vehicles as well as methanol and formaldehyde from methanol-fueled Otto-cycle vehicles, as well as methanol, ethanol, acetaldehyde, and formaldehyde from ethanol-fueled vehicles, while simulating an average trip in an urban area of approximately 11 miles (approximately 18 kilometers). The test consists of engine start-ups and vehicle operation on a chassis dynamometer through a specified driving schedule (see paragraph (a) of appendix I to this part for the Urban Dynamometer Driving Schedule). A proportional part of the diluted exhaust is collected continuously for subsequent analysis, using a constant volume (variable dilution) sampler or critical flow venturi sampler.

(c) The diesel-cycle exhaust emission test is designed to determine particulate and gaseous mass emissions during the test described in paragraph (b) of this section. For petroleum-fueled diesel-cycle vehicles, diluted exhaust is continuously analyzed for THC using a heated sample line and analyzer; the other gaseous emissions (CH_4, CO, CO_2, N_2O, and NO_X) are collected continuously for analysis as in paragraph (b) of this section. For methanol- and ethanol-fueled vehicles, THC, methanol, formaldehyde, CO, CO_2, CH_4, N_2O, and NO_X are collected continuously for analysis as in paragraph (b) of this section. Additionally, for ethanol-fueled vehicles, ethanol and acetaldehyde are collected continuously for analysis as in paragraph (b) of this section. THC, methanol, ethanol, acetaldehyde, and formaldehyde are collected using heated sample lines, and a heated FID is used for THC analyses. Simultaneous with the gaseous exhaust collection and analysis, particulates from a proportional part of the diluted exhaust are collected continuously on a filter. The mass of particulate is determined by the procedure described in § 86.139. This testing requires a dilution tunnel as well as the constant volume sampler.

(d) The evaporative emission test (gasoline-fueled vehicles, methanol-fueled and gaseous-fueled vehicles) is designed to determine hydrocarbon and methanol evaporative emissions as a consequence of diurnal temperature fluctuation, urban driving and hot soaks following drives. It is associated with a series of events that a vehicle may experience and that may result in hydrocarbon and/or methanol vapor losses. The test procedure is designed to measure:

(1) Diurnal emissions resulting from daily temperature changes (as well as relatively constant resting losses), measured by the enclosure technique (see § 86.133–96);

(2) Running losses resulting from a simulated trip performed on a chassis dynamometer, measured by the enclosure or point-source technique (see § 86.134–96; this test is not required for gaseous-fueled vehicles); and

(3) Hot soak emissions, which result when the vehicle is parked and the hot engine is turned off, measured by the enclosure technique (see § 86.138–96).

(e) Fuel spitback emissions occur when a vehicle's fuel fill neck cannot

accommodate dispensing rates. The vehicle test for spitback consists of a short drive followed immediately by a complete refueling event. This test is not required for gaseous-fueled vehicles.

(f) The element of the SFTP for exhaust emissions related to aggressive driving (US06) is designed to determine gaseous THC, NMHC, CO, CO_2, CH_4, and NO_X emissions from gasoline-fueled or diesel-fueled vehicles (see § 86.158–08 Supplemental test procedures; overview, and § 86.159–08 Exhaust emission test procedures for US06 emissions). The test cycle simulates urban driving speeds and accelerations that are not represented by the FTP Urban Dynamometer Driving Schedule simulated trips discussed in paragraph (b) of this section. The test consists of vehicle operation on a chassis dynamometer through a specified driving cycle (see paragraph (g), US06 Dynamometer Driving Schedule, of appendix I to this part). A proportional part of the diluted exhaust is collected continuously for subsequent analysis, using a constant volume (variable dilution) sampler or critical flow venturi sampler.

(g)(1) The element of the SFTP related to the increased exhaust emissions caused by air conditioning operation (SC03) is designed to determine gaseous THC, NMHC, CO, CO_2, CH_4, and NO_X emissions from gasoline-fueled or diesel fueled vehicles related to air conditioning use (see § 86.158–08 Supplemental Federal test procedures; overview and § 86.160–00 Exhaust emission test procedure for SC03 emissions). The test cycle simulates urban driving behavior with the air conditioner operating. The test consists of engine startups and vehicle operation on a chassis dynamometer through specified driving cycles (see paragraph (h), SC03 Dynamometer Driving Schedule, of appendix I to this part). A proportional part of the diluted exhaust is collected continuously for subsequent analysis, using a constant volume (variable dilution) sampler or critical flow venturi sampler. The testing sequence includes an approved preconditioning cycle, a 10 minute soak with the engine turned off, and the SC03 cycle with measured exhaust emissions.

(2) The SC03 air conditioning test is conducted with the air conditioner operating at specified settings and the ambient test conditions of:

(i) Air temperature of 95 °F;

(ii) 100 grains of water/pound of dry air (approximately 40 percent relative humidity);

(iii) Simulated solar heat intensity of 850 W/m^2 (see § 86.161–00(d)); and

(iv) Air flow directed at the vehicle that will provide representative air conditioner system condenser cooling at all vehicle speeds (see § 86.161–00(e)).

(3) Manufacturers have the option of simulating air conditioning operation during testing at other ambient test conditions provided they can demonstrate that the vehicle tail pipe exhaust emissions are representative of the emissions that would result from the SC03 cycle test procedure and the ambient conditions of paragraph (g)(2) of this section. The simulation test procedure must be approved in advance by the Administrator (see §§ 86.162–03 and 86.163–00).

(h) Except in cases of component malfunction or failure, all emission control systems installed on or incorporated in a new motor vehicle shall be functioning during all procedures in this subpart. Maintenance to correct component malfunction or failure shall be authorized in accordance with § 86.007–25 or § 86.1834–01 as applicable.

(i) Background concentrations are measured for all species for which emissions measurements are made. For exhaust testing, this requires sampling and analysis of the dilution air. For evaporative testing, this requires measuring initial concentrations. (When testing methanol-fueled vehicles, manufacturers may choose not to measure background concentrations of methanol and/or formaldehyde, and then assume that the concentrations are zero during calculations.)

■ 8. A new § 86.135–12 is added to read as follows:

§ 86.135–12 Dynamometer procedure.

(a) *Overview.* The dynamometer run consists of two tests, a "cold" start test, after a minimum 12-hour and a maximum 36-hour soak according to the provisions of §§ 86.132 and 86.133, and a "hot" start test following the "cold" start by 10 minutes. Engine startup (with all accessories turned off), operation over the UDDS, and engine shutdown make a complete cold start test. Engine startup and operation over the first 505 seconds of the driving schedule complete the hot start test. The exhaust emissions are diluted with ambient air in the dilution tunnel as shown in Figure B94–5 and Figure B94–6. A dilution tunnel is not required for testing vehicles waived from the requirement to measure particulates. Six particulate samples are collected on filters for weighing; the first sample plus backup is collected during the first 505 seconds of the cold start test; the second sample plus backup is collected during the remainder of the cold start test (including shutdown); the third sample plus backup is collected during the hot start test. Continuous proportional samples of gaseous emissions are collected for analysis during each test phase. For gasoline-fueled, natural gas-fueled and liquefied petroleum gas-fueled Otto-cycle vehicles, the composite samples collected in bags are analyzed for THC, CO, CO_2, CH_4, NO_X, and, for 2015 and later model year vehicles, N_2O. For petroleum-fueled diesel-cycle vehicles (optional for natural gas-fueled, liquefied petroleum gas-fueled and methanol-fueled diesel-cycle vehicles), THC is sampled and analyzed continuously according to the provisions of § 86.110–94. Parallel samples of the dilution air are similarly analyzed for THC, CO, CO_2, CH_4, NO_X, and, for 2015 and later model year vehicles, N_2O. For natural gas-fueled, liquefied petroleum gas-fueled and methanol-fueled vehicles, bag samples are collected and analyzed for THC (if not sampled continuously), CO, CO_2, CH_4, NO_X, and, for 2015 and later model year vehicles, N_2O. For methanol-fueled vehicles, methanol and formaldehyde samples are taken for both exhaust emissions and dilution air (a single dilution air formaldehyde sample, covering the total test period may be collected). For ethanol-fueled vehicles, methanol, ethanol, acetaldehyde, and formaldehyde samples are taken for both exhaust emissions and dilution air (a single dilution air formaldehyde sample, covering the total test period may be collected). Parallel bag samples of dilution air are analyzed for THC, CO, CO_2, CH_4, NO_X, and, for 2015 and later model year vehicles, N_2O.

(b) During dynamometer operation, a fixed speed cooling fan shall be positioned so as to direct cooling air to the vehicle in an appropriate manner with the engine compartment cover open. In the case of vehicles with front engine compartments, the fan shall be squarely positioned within 12 inches (30.5 centimeters) of the vehicle. In the case of vehicles with rear engine compartments (or if special designs make the above impractical), the cooling fan shall be placed in a position to provide sufficient air to maintain vehicle cooling. The fan capacity shall normally not exceed 5300 cfm (2.50 m^3/sec). However, if the manufacturer can show that during field operation the vehicle receives additional cooling, and that such additional cooling is needed to provide a representative test, the fan capacity may be increased, additional fans used, variable speed fan(s) may be used, and/or the engine compartment

cover may be closed, if approved in advance by the Administrator. For example, the hood may be closed to provide adequate air flow to an intercooler through a factory installed hood scoop. Additionally, the Administrator may conduct certification, fuel economy and in-use testing using the additional cooling set-up approved for a specific vehicle.

(c) The vehicle speed as measured from the dynamometer rolls shall be used. A speed vs. time recording, as evidence of dynamometer test validity, shall be supplied on request of the Administrator.

(d) Practice runs over the prescribed driving schedule may be performed at test point, provided an emission sample is not taken, for the purpose of finding the minimum throttle action to maintain the proper speed-time relationship, or to permit sampling system adjustment.

Note: When using two-roll dynamometers a truer speed-time trace may be obtained by minimizing the rocking of the vehicle in the rolls; the rocking of the vehicle changes the tire rolling radius on each roll. This rocking may be minimized by restraining the vehicle horizontally (or nearly so) by using a cable and winch.

(e) The drive wheel tires may be inflated up to a gauge pressure of 45 psi (310 kPa) in order to prevent tire damage. The drive wheel tire pressure shall be reported with the test results.

(f) If the dynamometer has not been operated during the 2-hour period immediately preceding the test, it shall be warmed up for 15 minutes by operating at 30 mph (48 kph) using a non-test vehicle or as recommended by the dynamometer manufacturer.

(g) If the dynamometer horsepower must be adjusted manually, it shall be set within 1 hour prior to the exhaust emissions test phase. The test vehicle shall not be used to make this adjustment. Dynamometers using automatic control of pre-selectable power settings may be set anytime prior to the beginning of the emissions test.

(h) The driving distance, as measured by counting the number of dynamometer roll or shaft revolutions, shall be determined for the transient cold start, stabilized cold start, and transient hot start phases of the test. The revolutions shall be measured on the same roll or shaft used for measuring the vehicle's speed.

(i) Four-wheel drive and all-wheel drive vehicles may be tested either in a four-wheel drive or a two-wheel drive mode of operation. In order to test in the two-wheel drive mode, four-wheel drive and all-wheel drive vehicles may have one set of drive wheels disengaged; four-wheel and all-wheel drive vehicles which can be shifted to a two-wheel mode by the driver may be tested in a two-wheel drive mode of operation.

■ 9. A new § 86.165–12 is added to subpart B to read as follows:

§ 86.165–12 Air conditioning idle test procedure.

(a) *Applicability.* This section describes procedures for determining air conditioning-related CO_2 emissions from light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles. The results of this test are used to qualify for air conditioning efficiency CO_2 credits according to § 86.1866–12(c).

(b) *Overview.* The test consists of a brief period to stabilize the vehicle at idle, followed by a ten-minute period at idle when CO_2 emissions are measured without any air conditioning systems operating, followed by a ten-minute period at idle when CO_2 emissions are measured with the air conditioning system operating. This test is designed to determine the air conditioning-related CO_2 emission value, in grams per minute. If engine stalling occurs during cycle operation, follow the provisions of § 86.136–90 to restart the test. Measurement instruments must meet the specifications described in this subpart.

(c) *Test cell ambient conditions.*

(1) Ambient humidity within the test cell during all phases of the test sequence shall be controlled to an average of 50 ± 5 grains of water/pound of dry air.

(2) Ambient air temperature within the test cell during all phases of the test sequence shall be controlled to 75 ± 2 °F on average and 75 ± 5 °F as an instantaneous measurement. Air temperature shall be recorded continuously at a minimum of 30 second intervals.

(d) *Test sequence.*

(1) Connect the vehicle exhaust system to the raw sampling location or dilution stage according to the provisions of this subpart. For dilution systems, dilute the exhaust as described in this subpart. Continuous sampling systems must meet the specifications provided in this subpart.

(2) Test the vehicle in a fully warmed-up condition. If the vehicle has soaked for two hours or less since the last exhaust test element, preconditioning may consist of a 505 Cycle, 866 Cycle, US06, or SC03, as these terms are defined in § 86.1803–01, or a highway fuel economy test procedure, as defined in § 600.002–08 of this chapter. For soak periods longer than two hours, precondition the vehicle using one full Urban Dynamometer Driving Schedule. Ensure that the vehicle has stabilized at test cell ambient conditions such that the vehicle interior temperature is not substantially different from the external test cell temperature. Windows may be opened during preconditioning to achieve this stabilization.

(3) Immediately after the preconditioning, turn off any cooling fans, if present, close the vehicle's hood, fully close all the vehicle's windows, ensure that all the vehicle's air conditioning systems are set to full off, start the CO_2 sampling system, and then idle the vehicle for not less than 1 minute and not more than 5 minutes to achieve normal and stable idle operation.

(4) Measure and record the continuous CO_2 concentration for 600 seconds. Measure the CO_2 concentration continuously using raw or dilute sampling procedures. Multiply this concentration by the continuous (raw or dilute) flow rate at the emission sampling location to determine the CO_2 flow rate. Calculate the CO_2 cumulative flow rate continuously over the test interval. This cumulative value is the total mass of the emitted CO_2.

(5) Within 60 seconds after completing the measurement described in paragraph (d)(4) of this section, turn on the vehicle's air conditioning system. Set automatic air conditioning systems to a temperature 9 °F (5 °C) below the ambient temperature of the test cell. Set manual air conditioning systems to maximum cooling with recirculation turned off, except that recirculation shall be enabled if the air conditioning system automatically defaults to a recirculation mode when set to maximum cooling. Continue idling the vehicle while measuring and recording the continuous CO_2 concentration for 600 seconds as described in paragraph (d)(4) of this section. Air conditioning systems with automatic temperature controls are finished with the test after this 600 second idle period. Manually controlled air conditioning systems must complete one additional idle period as described in paragraph (d)(6) of this section.

(6) This paragraph (d)(6) applies only to manually controlled air conditioning systems. Within 60 seconds after completing the measurement described in paragraph (d)(5) of this section, leave the vehicle's air conditioning system on and set as described in paragraph (d)(5) of this section but set the fan speed to the lowest setting that continues to provide air flow. Recirculation shall be turned off except that if the system defaults to a recirculation mode when set to maximum cooling and maintains

recirculation with the low fan speed, then recirculation shall continue to be enabled. After the fan speed has been set, continue idling the vehicle while measuring and recording the continuous CO_2 concentration for a total of 600 seconds as described in paragraph (d)(4) of this section.

(e) *Calculations.* (1) For the measurement with no air conditioning operation, calculate the CO_2 emissions (in grams per minute) by dividing the total mass of CO_2 from paragraph (d)(4) of this section by 10.0 (the duration in minutes for which CO_2 is measured). Round this result to the nearest tenth of a gram per minute.

(2)(i) For the measurement with air conditioning in operation for automatic air conditioning systems, calculate the CO_2 emissions (in grams per minute) by dividing the total mass of CO_2 from paragraph (d)(5) of this section by 10.0. Round this result to the nearest tenth of a gram per minute.

(ii) For the measurement with air conditioning in operation for manually controlled air conditioning systems, calculate the CO_2 emissions (in grams per minute) by summing the total mass of CO_2 from paragraphs (d)(5) and (d)(6) of this section and dividing by 20.0. Round this result to the nearest tenth of a gram per minute.

(3) Calculate the increased CO_2 emissions due to air conditioning (in grams per minute) by subtracting the results of paragraph (e)(1) of this section from the results of paragraph (e)(2)(i) or (ii) of this section, whichever is applicable.

(f) The Administrator may prescribe procedures other than those in this section for air conditioning systems and/or vehicles that may not be susceptible to satisfactory testing by the procedures and methods in this section. For example, the Administrator may prescribe alternative air conditioning system settings for systems with controls that are not able to meet the requirements in this section.

■ 10. A new § 86.166–12 is added to subpart B to read as follows:

§ 86.166–12 Method for calculating emissions due to air conditioning leakage.

This section describes procedures used to determine a refrigerant leakage rate in grams per year from vehicle-based air conditioning units. The results of this test are used to determine air conditioning leakage credits according to § 86.1866–12(b).

(a) *Emission totals.* Calculate an annual rate of refrigerant leakage from an air conditioning system using the following equation:

$$Grams/YR_{TOT} = Grams/YR_{RP} + Grams/YR_{SP} + Grams/YR_{FH} + Grams/YR_{MC} + Grams/YR_{C}$$

Where:

$Grams/YR_{TOT}$ = Total air conditioning system emission rate in grams per year and rounded to the nearest tenth of a gram per year.

$Grams/YR_{RP}$ = Emission rate for rigid pipe connections as described in paragraph (b) of this section.

$Grams/YR_{SP}$ = Emission rate for service ports and refrigerant control devices as described in paragraph (c) of this section.

$Grams/YR_{FH}$ = Emission rate for flexible hoses as described in paragraph (d) of this section.

$Grams/YR_{MC}$ = Emission rate for heat exchangers, mufflers, receiver/driers, and accumulators as described in paragraph (e) of this section.

$Grams/YR_{C}$ = Emission rate for compressors as described in paragraph (f) of this section.

(b) *Rigid pipe connections.* Determine the grams per year emission rate for rigid pipe connections using the following equation:

$$Grams/YR_{RP} = 0.00522 \times [(125 \times SO) + (75 \times SCO) + (50 \times MO) + (10 \times SW) + (5 \times SWO) + (MG)]$$

Where:

$Grams/YR_{RP}$ = Total emission rate for rigid pipe connections in grams per year.

SO = The number of single O-ring connections.

SCO = The number of single captured O-ring connections.

MO = The number of multiple O-ring connections.

SW = The number of seal washer connections.

SWO = The number of seal washer with O-ring connections.

MG = The number of metal gasket connections.

(c) *Service ports and refrigerant control devices.* Determine the grams per year emission rate for service ports and refrigerant control devices using the following equation:

$$Grams/YR_{SP} = 0.522 \times [(0.3 \times HSSP) + (0.2 \times LSSP) + (0.2 \times STV) + (0.2 \times TXV)]$$

Where:

$Grams/YR_{SP}$ = The emission rate for service ports and refrigerant control devices, in grams per year.

HSSP = The number of high side service ports.

LSSP = The number of low side service ports.

STV = The total number of switches, transducers, and pressure relief valves.

TXV = The number of refrigerant control devices.

(d) *Flexible hoses.* Determine the permeation emission rate in grams per year for each segment of flexible hose using the following equation, and then sum the values for all hoses in the system to calculate a total flexible hose emission rate for the system. Hose end connections shall be included in the calculations in paragraph (b) of this section.

$$Grams/YR_{FH} = 0.00522 \times (3.14159 \times ID \times L \times ER)$$

Where:

$Grams/YR_{FH}$ = Emission rate for a segment of flexible hose in grams per year.

ID = Inner diameter of hose, in millimeters.

L = Length of hose, in millimeters.

ER = Emission rate per unit internal surface area of the hose, in g/mm^2. Select the appropriate value for ER from the following table:

Material/configuration	ER	
	High-pressure side	Low-pressure side
All rubber hose	0.0216	0.0144
Standard barrier or veneer hose	0.0054	0.0036
Ultra-low permeation barrier or veneer hose	0.00225	0.00167

(e) *Heat exchangers, mufflers, receiver/driers, and accumulators.* Use an emission rate of 0.261 grams per year as a combined value for all heat exchangers, mufflers, receiver/driers, and accumulators ($Grams/YR_{MC}$).

(f) *Compressors.* Determine the emission rate for compressors using the following equation, except that the final term in the equation ("1500/SSL") is not applicable to electric (or semi-hermetic) compressors:

$$Grams/YR_{C} = 0.00522 \times [(300 \times OHS) + (200 \times MHS) + (150 \times FAP) + (100 \times GHS) + (1500/SSL)]$$

Where:

$Grams/YR_{C}$ = The emission rate for the compressors in the air conditioning system, in grams per year.

OHS = The number of O-ring housing seals.
MHS = The number of molded housing seals.
FAP = The number of fitting adapter plates.
GHS = The number of gasket housing seals.
SSL = The number of lips on shaft seal (for belt-driven compressors only).

(g) *Definitions.* The following definitions apply to this section:

(1) *All rubber hose* means a Type A or Type B hose as defined by SAE J2064 with a permeation rate not greater than 15 kg/m^2/year when tested according to SAE J2064. SAE J2064 is incorporated by reference; see § 86.1.

(2) *Standard barrier or veneer hose* means a Type C, D, E, or F hose as defined by SAE J2064 with a permeation rate not greater than 5 kg/m^2/year when tested according to SAE J2064. SAE J2064 is incorporated by reference; see § 86.1.

(3) *Ultra-low permeation barrier or veneer hose* means a hose with a permeation rate not greater than 1.5 kg/m^2/year when tested according to SAE J2064. SAE J2064 is incorporated by reference; see § 86.1.

Subpart S—[Amended]

■ 11. A new § 86.1801–12 is added to read as follows:

§ 86.1801–12 Applicability.

(a) *Applicability.* Except as otherwise indicated, the provisions of this subpart apply to new light-duty vehicles, light-duty trucks, medium-duty passenger vehicles, and Otto-cycle complete heavy-duty vehicles, including multi-fueled, alternative fueled, hybrid electric, plug-in hybrid electric, and electric vehicles. These provisions also apply to new incomplete light-duty trucks below 8,500 Gross Vehicle Weight Rating. In cases where a provision applies only to a certain vehicle group based on its model year, vehicle class, motor fuel, engine type, or other distinguishing characteristics, the limited applicability is cited in the appropriate section of this subpart.

(b) *Aftermarket conversions.* The provisions of this subpart apply to aftermarket conversion systems, aftermarket conversion installers, and aftermarket conversion certifiers, as those terms are defined in 40 CFR 85.502, of all model year light-duty vehicles, light-duty trucks, medium-duty passenger vehicles, and complete Otto-cycle heavy-duty vehicles.

(c) *Optional applicability.*

(1) [Reserved]

(2) A manufacturer may request to certify any incomplete Otto-cycle heavy-duty vehicle of 14,000 pounds Gross Vehicle Weight Rating or less in accordance with the provisions for complete heavy-duty vehicles. Heavy-duty engine or heavy-duty vehicle provisions of subpart A of this part do not apply to such a vehicle.

(3) [Reserved]

(4) Upon preapproval by the Administrator, a manufacturer may optionally certify an aftermarket conversion of a complete heavy-duty vehicle greater than 10,000 pounds Gross Vehicle Weight Rating and of 14,000 pounds Gross Vehicle Weight Rating or less under the heavy-duty engine or heavy-duty vehicle provisions of subpart A of this part. Such preapproval will be granted only upon demonstration that chassis-based certification would be infeasible or unreasonable for the manufacturer to perform.

(5) A manufacturer may optionally certify an aftermarket conversion of a complete heavy-duty vehicle greater than 10,000 pounds Gross Vehicle Weight Rating and of 14,000 pounds Gross Vehicle Weight Rating or less under the heavy-duty engine or heavy-duty vehicle provisions of subpart A of this part without advance approval from the Administrator if the vehicle was originally certified to the heavy-duty engine or heavy-duty vehicle provisions of subpart A of this part.

(d) *Small volume manufacturers.* Special certification procedures are available for any manufacturer whose projected or actual combined sales in all states and territories of the United States of light-duty vehicles, light-duty trucks, heavy-duty vehicles, and heavy-duty engines in its product line (including all vehicles and engines imported under the provisions of 40 CFR 85.1505 and 85.1509) are fewer than 15,000 units for the model year in which the manufacturer seeks certification. The small volume manufacturer's light-duty vehicle and light-duty truck certification procedures are described in § 86.1838–01.

(e)–(g) [Reserved]

(h) *Applicability of provisions of this subpart to light-duty vehicles, light-duty trucks, medium-duty passenger vehicles, and heavy-duty vehicles.* Numerous sections in this subpart provide requirements or procedures applicable to a "vehicle" or "vehicles." Unless otherwise specified or otherwise determined by the Administrator, the term "vehicle" or "vehicles" in those provisions apply equally to light-duty vehicles (LDVs), light-duty trucks (LDTs), medium-duty passenger vehicles (MDPVs), and heavy-duty vehicles (HDVs), as those terms are defined in § 86.1803–01.

(i) *Applicability of provisions of this subpart to exhaust greenhouse gas emissions.* Numerous sections in this subpart refer to requirements relating to "exhaust emissions." Unless otherwise specified or otherwise determined by the Administrator, the term "exhaust emissions" refers at a minimum to emissions of all pollutants described by emission standards in this subpart, including carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4).

(j) *Exemption from greenhouse gas emission standards for small businesses.* Manufacturers that qualify as a small business under the Small Business Administration regulations in 13 CFR part 121 are exempt from the greenhouse gas emission standards specified in § 86.1818–12 and in associated provisions in this part and in part 600 of this chapter. Both U.S.-based and non-U.S.-based businesses are eligible for this exemption. The following categories of businesses (with their associated NAICS codes) may be eligible for exemption based on the Small Business Administration size standards in 13 CFR 121.201.

(1) Vehicle manufacturers (NAICS code 336111).

(2) Independent commercial importers (NAICS codes 811111, 811112, 811198, 423110, 424990, and 441120).

(3) Alternate fuel vehicle converters (NAICS codes 335312, 336312, 336322, 336399, 454312, 485310, and 811198).

(k) *Conditional exemption from greenhouse gas emission standards.* Manufacturers meeting the eligibility requirements described in paragraph (k)(1) and (2) of this section may request a conditional exemption from compliance with the emission standards described in § 86.1818–12 paragraphs (c) through (e) and associated provisions in this part and in part 600 of this chapter. The terms "sales" and "sold" as used in this paragraph (k) shall mean vehicles produced and delivered for sale (or sold) in the states and territories of the United States. For the purpose of determining eligibility the sales of related companies shall be aggregated according to the provisions of § 86.1838–01(b)(3).

(1) *Eligibility requirements.* Eligibility as determined in this paragraph (k) shall be based on the total sales of combined passenger automobiles and light trucks. Manufacturers must meet one of the requirements in paragraph (k)(1)(i) or (ii) of this section to initially qualify for this exemption.

(i) A manufacturer with 2008 or 2009 model year sales of more than zero and fewer than 5,000 is eligible for a conditional exemption from the greenhouse gas emission standards

described in § 86.1818–12 paragraphs (c) through (e).

(ii) A manufacturer with 2008 or 2009 model year sales of more than zero and fewer than 5,000 while under the control of another manufacturer, where those 2008 or 2009 model year vehicles bore the brand of the producing manufacturer but were sold by or otherwise under the control of another manufacturer, and where the manufacturer producing the vehicles became independent no later than December 31, 2010, is eligible for a conditional exemption from the greenhouse gas emission standards described in § 86.1818–12 paragraphs (c) through (e).

(2) *Maintaining eligibility for exemption from greenhouse gas emission standards.* To remain eligible for exemption under this paragraph (k) the manufacturer's average sales for the three most recent consecutive model years must remain below 5,000. If a manufacturer's average sales for the three most recent consecutive model years exceeds 4999, the manufacturer will no longer be eligible for exemption and must meet applicable emission standards according to the provisions in this paragraph (k)(2).

(i) If a manufacturer's average sales for three consecutive model years exceeds 4999, and if the increase in sales is the result of corporate acquisitions, mergers, or purchase by another manufacturer, the manufacturer shall comply with the emission standards described in § 86.1818–12 paragraphs (c) through (e), as applicable, beginning with the first model year after the last year of the three consecutive model years.

(ii) If a manufacturer's average sales for three consecutive model years exceeds 4999 and is less than 50,000, and if the increase in sales is solely the result of the manufacturer's expansion in vehicle production, the manufacturer shall comply with the emission standards described in § 86.1818–12 paragraphs (c) through (e), as applicable, beginning with the second model year after the last year of the three consecutive model years.

(iii) If a manufacturer's average sales for three consecutive model years exceeds 49,999, the manufacturer shall comply with the emission standards described in § 86.1818–12 paragraphs (c) through (e), as applicable, beginning with the first model year after the last year of the three consecutive model years.

(3) *Requesting the conditional exemption from standards.* To be exempted from the standards described in § 86.1818–12(c) through (e), the manufacturer must submit a declaration to EPA containing a detailed written description of how the manufacturer qualifies under the provisions of this paragraph (k). The declaration must describe eligibility information that includes the following: model year 2008 and 2009 sales, sales volumes for each of the most recent three model years, detailed information regarding ownership relationships with other manufacturers, details regarding the application of the provisions of § 86.1838–01(b)(3) regarding the aggregation of sales of related companies, and documentation of good-faith efforts made by the manufacturer to purchase credits from other manufacturers. This declaration must be signed by a chief officer of the company, and must be made prior to each model year for which the exemption is requested. The declaration must be submitted to EPA at least 30 days prior to the introduction into commerce of any vehicles for each model year for which the exemption is requested, but not later than December of the calendar year prior to the model year for which exemption is requested. A conditional exemption will be granted when EPA approves the exemption declaration. The declaration must be sent to the Environmental Protection Agency at the following address: Director, Compliance and Innovative Strategies Division, U.S. Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, Michigan 48105.

■ 12. Section 86.1803–01 is amended as follows:

■ a. By adding the definition for "Air conditioning idle test."

■ b. By adding the definition for "Air conditioning system."

■ c. By revising the definition for "Banking."

■ d. By adding the definition for "Base level."

■ e. By adding the definition for "Base tire."

■ f. By adding the definition for "Base vehicle."

■ g. By revising the definition for "Basic engine."

■ h. By adding the definition for "Carbon-related exhaust emissions."

■ i. By adding the definition for "Combined CO_2."

■ j. By adding the definition for "Combined CREE."

■ k. By adding the definition for "Electric vehicle."

■ l. By revising the definition for "Engine code."

■ m. By adding the definition for "Ethanol fueled vehicle."

■ n. By revising the definition for "Flexible fuel vehicle."

■ o. By adding the definition for "Footprint."

■ p. By adding the definition for "Fuel cell electric vehicle."

■ q. By adding the definition for "Highway fuel economy test procedure."

■ r. By adding the definition for "Hybrid electric vehicle."

■ s. By adding the definition for "Interior volume index."

■ t. By revising the definition for "Model type."

■ u. By adding the definition for "Motor vehicle."

■ v. By adding the definition for "Multi-fuel vehicle."

■ w. By adding the definition for "Petroleum equivalency factor."

■ x. By adding the definition for "Petroleum-equivalent fuel economy."

■ y. By adding the definition for "Petroleum powered accessory."

■ z. By adding the definition for "Plug-in hybrid electric vehicle."

■ aa. By adding the definition for "Production volume."

■ bb. By revising the definition for "Round, rounded, or rounding."

■ cc. By adding the definition for "Subconfiguration."

■ dd. By adding the definition for "Track width."

■ ee. By revising the definition for "Transmission class."

■ ff. By revising the definition for "Transmission configuration."

■ gg. By adding the definition for "Wheelbase."

§ 86.1803–01 Definitions.

* * * * *

Air Conditioning Idle Test means the test procedure specified in § 86.165–12.

Air conditioning system means a unique combination of air conditioning and climate control components, including: compressor type (*e.g.*, belt, gear, or electric-driven, or a combination of compressor drive mechanisms); compressor refrigerant capacity; the number and type of rigid pipe and flexible hose connections; the number of high side service ports; the number of low side service ports; the number of switches, transducers, and expansion valves; the number of TXV refrigerant control devices; the number and type of heat exchangers, mufflers, receiver/dryers, and accumulators; and the length and type of flexible hose (*e.g.*, rubber, standard barrier or veneer, ultra-low permeation).

* * * * *

Banking means one of the following:

(1) The retention of NO_X emission credits for complete heavy-duty vehicles by the manufacturer generating the emission credits, for use in future model year certification programs as permitted by regulation.

(2) The retention of cold temperature non-methane hydrocarbon (NMHC) emission credits for light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles by the manufacturer generating the emission credits, for use in future model year certification programs as permitted by regulation.

(3) The retention of NO_X emission credits for light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles for use in future model year certification programs as permitted by regulation.

(4) The retention of CO_2 emission credits for light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles for use in future model year certification programs as permitted by regulation.

Base level has the meaning given in § 600.002–08 of this chapter.

Base tire has the meaning given in § 600.002–08 of this chapter.

Base vehicle has the meaning given in § 600.002–08 of this chapter.

Basic engine has the meaning given in § 600.002–08 of this chapter.

* * * * *

Carbon-related exhaust emissions (CREE) has the meaning given in § 600.002–08 of this chapter.

* * * * *

Combined CO_2 means the CO_2 value determined for a vehicle (or vehicles) by averaging the city and highway CO_2 values, weighted 0.55 and 0.45 respectively.

Combined CREE means the CREE value determined for a vehicle (or vehicles) by averaging the city and highway fuel CREE values, weighted 0.55 and 0.45 respectively.

* * * * *

Electric vehicle means a motor vehicle that is powered solely by an electric motor drawing current from a rechargeable energy storage system, such as from storage batteries or other portable electrical energy storage devices, including hydrogen fuel cells, provided that:

(1) The vehicle is capable of drawing recharge energy from a source off the vehicle, such as residential electric service; and

(2) The vehicle must be certified to the emission standards of Bin #1 of Table S04–1 in § 86.1811–09(c)(6).

(3) The vehicle does not have an onboard combustion engine/generator system as a means of providing electrical energy.

* * * * *

Engine code means a unique combination within a test group of displacement, fuel injection (or carburetor) calibration, choke calibration, distributor calibration, auxiliary emission control devices, and other engine and emission control system components specified by the Administrator. For electric vehicles, engine code means a unique combination of manufacturer, electric traction motor, motor configuration, motor controller, and energy storage device.

* * * * *

Ethanol-fueled vehicle means any motor vehicle or motor vehicle engine that is engineered and designed to be operated using ethanol fuel (*i.e.,* a fuel that contains at least 50 percent ethanol (C_2H_5OH) by volume) as fuel.

* * * * *

Flexible fuel vehicle means any motor vehicle engineered and designed to be operated on a petroleum fuel and on a methanol or ethanol fuel, or any mixture of the petroleum fuel and methanol or ethanol. Methanol-fueled and ethanol-fueled vehicles that are only marginally functional when using gasoline (*e.g.,* the engine has a drop in rated horsepower of more than 80 percent) are not flexible fuel vehicles.

Footprint is the product of track width (measured in inches, calculated as the average of front and rear track widths, and rounded to the nearest tenth of an inch) and wheelbase (measured in inches and rounded to the nearest tenth of an inch), divided by 144 and then rounded to the nearest tenth of a square foot.

Fuel cell vehicle means an electric vehicle propelled solely by an electric motor where energy for the motor is supplied by an electrochemical cell that produces electricity via the non-combustion reaction of a consumable fuel, typically hydrogen.

* * * * *

Highway Fuel Economy Test Procedure (HFET) has the meaning given in § 600.002–08 of this chapter.

* * * * *

Hybrid electric vehicle (HEV) means a motor vehicle which draws propulsion energy from onboard sources of stored energy that are both an internal combustion engine or heat engine using consumable fuel, and a rechargeable energy storage system such as a battery, capacitor, hydraulic accumulator, or flywheel, where recharge energy for the energy storage system comes solely from sources on board the vehicle.

* * * * *

Interior volume index has the meaning given in § 600.315–08 of this chapter.

* * * * *

Model type has the meaning given in § 600.002–08 of this chapter.

* * * * *

Motor vehicle has the meaning given in § 85.1703 of this chapter.

* * * * *

Multi-fuel vehicle means any motor vehicle capable of operating on two or more different fuel types, either separately or simultaneously.

* * * * *

Petroleum equivalency factor means the value specified in 10 CFR 474.3(b), which incorporates the parameters listed in 49 U.S.C. 32904(a)(2)(B) and is used to calculate petroleum-equivalent fuel economy.

Petroleum-equivalent fuel economy means the value, expressed in miles per gallon, that is calculated for an electric vehicle in accordance with 10 CFR 474.3(a), and reported to the Administrator of the Environmental Protection Agency for use in determining the vehicle manufacturer's corporate average fuel economy.

* * * * *

Petroleum-powered accessory means a vehicle accessory (*e.g.,* a cabin heater, defroster, and/or air conditioner) that:

(1) Uses gasoline or diesel fuel as its primary energy source; and

(2) Meets the requirements for fuel, operation, and emissions in § 88.104–94(g) of this chapter.

Plug-in hybrid electric vehicle (PHEV) means a hybrid electric vehicle that has the capability to charge the battery from an off-vehicle electric source, such that the off-vehicle source cannot be connected to the vehicle while the vehicle is in motion.

* * * * *

Production volume has the meaning given in § 600.002–08 of this chapter.

* * * * *

Round, rounded or *rounding* means, unless otherwise specified, that numbers will be rounded according to ASTM–E29–93a, which is incorporated by reference in this part pursuant to § 86.1.

* * * * *

Subconfiguration has the meaning given in § 600.002–08 of this chapter.

* * * * *

Track width is the lateral distance between the centerlines of the base tires at ground, including the camber angle.

* * * * *

Transmission class has the meaning given in § 600.002–08 of this chapter.

Transmission configuration has the meaning given in § 600.002–08 of this chapter.

* * * * *

Wheelbase is the longitudinal distance between front and rear wheel centerlines.

* * * * *

■ 13. A new § 86.1805–12 is added to read as follows:

§ 86.1805–12 Useful life.

(a) Except as permitted under paragraph (b) of this section or required under paragraphs (c) and (d) of this section, the full useful life for all LDVs and LLDTs is a period of use of 10 years or 120,000 miles, whichever occurs first. The full useful life for all HLDTs, MDPVs, and complete heavy-duty vehicles is a period of 11 years or 120,000 miles, whichever occurs first. These full useful life values apply to all exhaust, evaporative and refueling emission requirements except for standards which are specified to only be applicable at the time of certification. These full useful life requirements also apply to all air conditioning leakage credits, air conditioning efficiency credits, and other credit programs used by the manufacturer to comply with the fleet average CO_2 emission standards in § 86.1818–12.

(b) Manufacturers may elect to optionally certify a test group to the Tier 2 exhaust emission standards for 150,000 miles to gain additional NO_X credits, as permitted in § 86.1860–04(g), or to opt out of intermediate life standards as permitted in § 86.1811–04(c). In such cases, useful life is a period of use of 15 years or 150,000 miles, whichever occurs first, for all exhaust, evaporative and refueling emission requirements except for cold CO standards and standards which are applicable only at the time of certification.

(c) Where intermediate useful life exhaust emission standards are applicable, such standards are applicable for five years or 50,000 miles, whichever occurs first.

(d) Where cold CO standards are applicable, the useful life requirement for compliance with the cold CO standard only, is 5 years or 50,000 miles, whichever occurs first.

■ 14. Section 86.1806–05 is amended by revising paragraph (a)(1) to read as follows:

§ 86.1806–05 On-board diagnostics for vehicles less than or equal to 14,000 pounds GVWR.

(a) * * *

(1) Except as provided by paragraph (a)(2) of this section, all light-duty vehicles, light-duty trucks and complete heavy-duty vehicles weighing 14,000 pounds GVWR or less (including MDPVs) must be equipped with an onboard diagnostic (OBD) system capable of monitoring all emission-related powertrain systems or components during the applicable useful life of the vehicle. All systems and components required to be monitored by these regulations must be evaluated periodically, but no less frequently than once per applicable certification test cycle as defined in paragraphs (a) and (d) of Appendix I of this part, or similar trip as approved by the Administrator. Emissions of CO_2, CH_4, and N_2O are not required to be monitored by the OBD system.

* * * * *

■ 15. A new § 86.1809–12 is added to read as follows:

§ 86.1809–12 Prohibition of defeat devices.

(a) No new light-duty vehicle, light-duty truck, medium-duty passenger vehicle, or complete heavy-duty vehicle shall be equipped with a defeat device.

(b) The Administrator may test or require testing on any vehicle at a designated location, using driving cycles and conditions that may reasonably be expected to be encountered in normal operation and use, for the purposes of investigating a potential defeat device.

(c) For cold temperature CO and cold temperature NMHC emission control, the Administrator will use a guideline to determine the appropriateness of the CO and NMHC emission control at ambient temperatures between 25 °F (the upper bound of the FTP test temperature range) and 68 °F (the lower bound of the FTP test temperature range). The guideline for CO emission congruity across the intermediate temperature range is the linear interpolation between the CO standard applicable at 25 °F and the CO standard applicable at 68 °F. The guideline for NMHC emission congruity across the intermediate temperature range is the linear interpolation between the NMHC FEL pass limit (*e.g.* 0.3499 g/mi for a 0.3 g/mi FEL) applicable at 20 °F and the Tier 2 NMOG standard to which the vehicle was certified at 68 °F, where the intermediate temperature NMHC level is rounded to the nearest hundredth for comparison to the interpolated line. For vehicles that exceed this CO emissions guideline or this NMHC emissions guideline upon intermediate temperature cold testing:

(1) If the CO emission level is greater than the 20 °F emission standard, the vehicle will automatically be considered to be equipped with a defeat device without further investigation. If the intermediate temperature NMHC emission level, rounded to the nearest hundredth, is greater than the 20 °F FEL pass limit, the vehicle will be presumed to have a defeat device unless the manufacturer provides evidence to EPA's satisfaction that the cause of the test result in question is not due to a defeat device.

(2) If the CO emission level does not exceed the 20 °F emission standard, the Administrator may investigate the vehicle design for the presence of a defeat device under paragraph (d) of this section. If the intermediate temperature NMHC emission level, rounded to the nearest hundredth, does not exceed the 20 °F FEL pass limit the Administrator may investigate the vehicle design for the presence of a defeat device under paragraph (d) of this section.

(d) The following provisions apply for vehicle designs designated by the Administrator to be investigated for possible defeat devices:

(1) The manufacturer must show to the satisfaction of the Administrator that the vehicle design does not incorporate strategies that unnecessarily reduce emission control effectiveness exhibited during the Federal Test Procedure or Supplemental Federal Test Procedure (FTP or SFTP) or the Highway Fuel Economy Test Procedure (described in subpart B of 40 CFR part 600), or the Air Conditioning Idle Test (described in § 86.165–12), when the vehicle is operated under conditions that may reasonably be expected to be encountered in normal operation and use.

(2) The following information requirements apply:

(i) Upon request by the Administrator, the manufacturer must provide an explanation containing detailed information regarding test programs, engineering evaluations, design specifications, calibrations, on-board computer algorithms, and design strategies incorporated for operation both during and outside of the Federal emission test procedures.

(ii) For purposes of investigations of possible cold temperature CO or cold temperature NMHC defeat devices under this paragraph (d), the manufacturer must provide an explanation to show, to the satisfaction of the Administrator, that CO emissions and NMHC emissions are reasonably controlled in reference to the linear guideline across the intermediate temperature range.

(e) For each test group the manufacturer must submit, with the Part II certification application, an engineering evaluation demonstrating to the satisfaction of the Administrator that a discontinuity in emissions of non-methane organic gases, carbon

monoxide, carbon dioxide, oxides of nitrogen, nitrous oxide, methane, and formaldehyde measured on the Federal Test Procedure (subpart B of this part) and on the Highway Fuel Economy Test Procedure (subpart B of 40 CFR part 600) does not occur in the temperature range of 20 to 86 °F. For diesel vehicles, the engineering evaluation must also include particulate emissions.

■ 16. Section 86.1810–09 is amended by revising paragraph (f) to read as follows:

§ 86.1810–09 General standards; increase in emissions; unsafe condition; waivers.

* * * * *

(f) *Altitude requirements.* (1) All emission standards apply at low altitude conditions and at high altitude conditions, except for the following standards, which apply only at low altitude conditions:

(i) The supplemental exhaust emission standards as described in § 86.1811–04(f);

(ii) The cold temperature NMHC emission standards as described in § 86.1811–10(g);

(iii) The evaporative emission standards as described in § 86.1811–09(e).

(2) For vehicles that comply with the cold temperature NMHC standards described in § 86.1811–10(g) and the CO_2, N_2O, and CH_4 exhaust emission standards described in § 86.1818–12, manufacturers must submit an engineering evaluation indicating that common calibration approaches are utilized at high altitudes. Any deviation from low altitude emission control practices must be included in the auxiliary emission control device (AECD) descriptions submitted at certification. Any AECD specific to high altitude must require engineering emission data for EPA evaluation to quantify any emission impact and validity of the AECD.

* * * * *

■ 17. A new § 86.1818–12 is added to read as follows:

§ 86.1818–12 Greenhouse gas emission standards for light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles.

(a) *Applicability.* This section contains standards and other regulations applicable to the emission of the air pollutant defined as the aggregate group of six greenhouse gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. This section applies to 2012 and later model year LDVs, LDTs and MDPVs, including multi-fuel vehicles, vehicles fueled with alternative fuels, hybrid electric vehicles, plug-in hybrid electric vehicles, electric vehicles, and fuel cell vehicles. Unless otherwise specified, multi-fuel vehicles must comply with all requirements established for each consumed fuel. The provisions of this section also apply to aftermarket conversion systems, aftermarket conversion installers, and aftermarket conversion certifiers, as those terms are defined in 40 CFR 85.502, of all model year light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles. Manufacturers that qualify as a small business according to the requirements of § 86.1801–12(j) are exempt from the emission standards in this section. Manufacturers that have submitted a declaration for a model year according to the requirements of § 86.1801–12(k) for which approval has been granted by the Administrator are conditionally exempt from the emission standards in paragraphs (c) through (e) of this section for the approved model year.

(b) *Definitions.* For the purposes of this section, the following definitions shall apply:

(1) *Passenger automobile* means a motor vehicle that is a passenger automobile as that term is defined in 49 CFR 523.4.

(2) *Light truck* means a motor vehicle that is a non-passenger automobile as that term is defined in 49 CFR 523.5.

(c) *Fleet average CO_2 standards for passenger automobiles and light trucks.* (1) For a given individual model year's production of passenger automobiles and light trucks, manufacturers must comply with a fleet average CO_2 standard calculated according to the provisions of this paragraph (c). Manufacturers must calculate separate fleet average CO_2 standards for their passenger automobile and light truck fleets, as those terms are defined in this section. Each manufacturer's fleet average CO_2 standards determined in this paragraph (c) shall be expressed in whole grams per mile, in the model year specified as applicable. Manufacturers eligible for and choosing to participate in the Temporary Leadtime Allowance Alternative Standards for qualifying manufacturers specified in paragraph (e) of this section shall not include vehicles subject to the Temporary Leadtime Allowance Alternative Standards in the calculations of their primary passenger automobile or light truck standards determined in this paragraph (c). Manufacturers shall demonstrate compliance with the applicable standards according to the provisions of § 86.1865–12.

(2) *Passenger automobiles*—(i) *Calculation of CO_2 target values for passenger automobiles.* A CO_2 target value shall be determined for each passenger automobile as follows:

(A) For passenger automobiles with a footprint of less than or equal to 41 square feet, the gram/mile CO_2 target value shall be selected for the appropriate model year from the following table:

Model year	CO_2 target value (grams/mile)
2012	244.0
2013	237.0
2014	228.0
2015	217.0
2016 and later	206.0

(B) For passenger automobiles with a footprint of greater than 56 square feet, the gram/mile CO_2 target value shall be selected for the appropriate model year from the following table:

Model year	CO_2 target value (grams/mile)
2012	315.0
2013	307.0
2014	299.0
2015	288.0
2016 and later	277.0

(C) For passenger automobiles with a footprint that is greater than 41 square feet and less than or equal to 56 square feet, the gram/mile CO_2 target value shall be calculated using the following equation and rounded to the nearest 0.1 grams/mile:

$$\text{Target } CO_2 = [4.72 \times f] + b$$

Where:

f is the vehicle footprint, as defined in § 86.1803; and

b is selected from the following table for the appropriate model year:

Model year	b
2012	50.5
2013	43.3
2014	34.8
2015	23.4
2016 and later	12.7

(ii) *Calculation of the fleet average CO_2 standard for passenger automobiles.* In each model year manufacturers must comply with the CO_2 exhaust emission standard for their passenger automobile fleet, calculated for that model year as follows:

(A) A CO_2 target value shall be determined according to paragraph (c)(2)(i) of this section for each unique combination of model type and footprint value.

(B) Each CO_2 target value, determined for each unique combination of model

type and footprint value, shall be multiplied by the total production of that model type/footprint combination for the appropriate model year.

(C) The resulting products shall be summed, and that sum shall be divided by the total production of passenger automobiles in that model year. The result shall be rounded to the nearest whole gram per mile. This result shall be the applicable fleet average CO_2 standard for the manufacturer's passenger automobile fleet.

(3) *Light trucks*—(i) *Calculation of CO_2 target values for light trucks.* A CO_2 target value shall be determined for each light truck as follows:

(A) For light trucks with a footprint of less than or equal to 41 square feet, the gram/mile CO_2 target value shall be selected for the appropriate model year from the following table:

Model year	CO_2 target value (grams/mile)
2012	294.0
2013	284.0
2014	275.0
2015	261.0
2016 and later	247.0

(B) For light trucks with a footprint of greater than 66 square feet, the gram/mile CO_2 target value shall be selected for the appropriate model year from the following table:

Model year	CO_2 target value (grams/mile)
2012	395.0
2013	385.0
2014	376.0
2015	362.0
2016 and later	348.0

(C) For light trucks with a footprint that is greater than 41 square feet and less than or equal to 66 square feet, the gram/mile CO_2 target value shall be calculated using the following equation and rounded to the nearest 0.1 grams/mile:

$$\text{Target } CO_2 = (4.04 \times f) + b$$

Where:

f is the footprint, as defined in § 86.1803; and

b is selected from the following table for the appropriate model year:

Model year	b
2012	128.6
2013	118.7
2014	109.4
2015	95.1
2016 and later	81.1

(ii) *Calculation of fleet average CO_2 standards for light trucks.* In each model year manufacturers must comply with the CO_2 exhaust emission standard for their light truck fleet, calculated for that model year as follows:

(A) A CO_2 target value shall be determined according to paragraph (c)(3)(i) of this section for each unique combination of model type and footprint value.

(B) Each CO_2 target value, which represents a unique combination of model type and footprint value, shall be multiplied by the total production of that model type/footprint combination for the appropriate model year.

(C) The resulting products shall be summed, and that sum shall be divided by the total production of light trucks in that model year. The result shall be rounded to the nearest whole gram per mile. This result shall be the applicable fleet average CO_2 standard for the manufacturer's light truck fleet.

(d) *In-use CO_2 exhaust emission standards.* The in-use exhaust CO_2 emission standard shall be the combined city/highway carbon-related exhaust emission value calculated for the appropriate vehicle carline/subconfiguration according to the provisions of § 600.113–08(g)(4) of this chapter multiplied by 1.1 and rounded to the nearest whole gram per mile. For in-use vehicle carlines/subconfigurations for which a combined city/highway carbon-related exhaust emission value was not determined under § 600.113(g)(4) of this chapter, the in-use exhaust CO_2 emission standard shall be the combined city/highway carbon-related exhaust emission value calculated according to the provisions of § 600.208–12 of this chapter for the vehicle model type (except that total model year production data shall be used instead of sales projections) multiplied by 1.1 and rounded to the nearest whole gram per mile. For vehicles that are capable of operating on multiple fuels, including but not limited to alcohol dual fuel, natural gas dual fuel and plug-in hybrid electric vehicles, a separate in-use standard shall be determined for each fuel that the vehicle is capable of operating on. These standards apply to in-use testing performed by the manufacturer pursuant to regulations at § 86.1845–04 and 86.1846–01 and to in-use testing performed by EPA.

(e) *Temporary Lead Time Allowance Alternative Standards.* (1) The interim fleet average CO_2 standards in this paragraph (e) are optionally applicable to each qualifying manufacturer, where the terms "sales" or "sold" as used in this paragraph (e) means vehicles produced and delivered for sale (or sold) in the states and territories of the United States.

(i) A qualifying manufacturer is a manufacturer with sales of 2009 model year combined passenger automobiles and light trucks of greater than zero and less than 400,000 vehicles.

(A) If a manufacturer sold less than 400,000 but more than zero 2009 model year combined passenger automobiles and light trucks while under the control of another manufacturer, where those 2009 model year passenger automobiles and light trucks bore the brand of the producing manufacturer, and where the producing manufacturer became independent no later than December 31, 2010, the producing manufacturer is a qualifying manufacturer.

(B) In the case where two or more qualifying manufacturers combine as the result of merger or the purchase of 50 percent or more of one or more companies by another company, and if the combined 2009 model year sales of the merged or combined companies is less than 400,000 but more than zero (combined passenger automobiles and light trucks), the corporate entity formed by the combination of two or more qualifying manufacturers shall continue to be a qualifying manufacturer. The total number of vehicles that the corporate entity is allowed to include under the Temporary Leadtime Allowance Alternative Standards shall be determined by paragraph (e)(2) or (e)(3) of this section where sales is the total combined 2009 model year sales of all of the merged or combined companies. Vehicles sold by the companies that combined by merger/acquisition to form the corporate entity that were subject to the Temporary Leadtime Allowance Alternative Standards in paragraph (e)(4) of this section prior to the merger/acquisition shall be combined to determine the remaining number of vehicles that the corporate entity may include under the Temporary Leadtime Allowance Alternative Standards in this paragraph (e).

(C) In the case where two or more manufacturers combine as the result of merger or the purchase of 50 percent or more of one or more companies by another company, and if the combined 2009 model year sales of the merged or combined companies is equal to or greater than 400,000 (combined passenger automobiles and light trucks), the new corporate entity formed by the combination of two or more manufacturers is not a qualifying manufacturer. Such a manufacturer shall meet the emission standards in paragraph (c) of this section beginning with the model year that is numerically

two years greater than the calendar year in which the merger/acquisition(s) took place.

(ii) For the purposes of making the determination in paragraph (e)(1)(i) of this section, "manufacturer" shall mean that term as defined at 49 CFR 531.4 and as that definition was applied to the 2009 model year for the purpose of determining compliance with the 2009 corporate average fuel economy standards at 49 CFR parts 531 and 533.

(iii) A qualifying manufacturer may not use these Temporary Leadtime Allowance Alternative Standards until they have used all available banked credits and/or credits available for transfer accrued under § 86.1865–12(k). A qualifying manufacturer with a net positive credit balance calculated under § 86.1865–12(k) in any model year after considering all available credits either generated, carried forward from a prior model year, transferred from other averaging sets, or obtained from other manufacturers, may not use these Temporary Leadtime Allowance Alternative Standards in such model year.

(2) Qualifying manufacturers may select any combination of 2012 through 2015 model year passenger automobiles and/or light trucks to include under the Temporary Leadtime Allowance Alternative Standards determined in this paragraph (e) up to a cumulative total of 100,000 vehicles. Vehicles selected to comply with these standards shall not be included in the calculations of the manufacturer's fleet average standards under paragraph (c) of this section.

(3) Qualifying manufacturers with sales of 2009 model year combined passenger automobiles and light trucks in the United States of greater than zero and less than 50,000 vehicles may select any combination of 2012 through 2015 model year passenger automobiles and/or light trucks to include under the Temporary Leadtime Allowance Alternative Standards determined in this paragraph (e) up to a cumulative total of 200,000 vehicles, and additionally may select up to 50,000 2016 model year vehicles to include under the Temporary Leadtime Allowance Alternative Standards determined in this paragraph (e). To be eligible for the provisions of this paragraph (e)(3) qualifying manufacturers must provide annual documentation of good-faith efforts made by the manufacturer to purchase credits from other manufacturers. Without such documentation, the manufacturer may use the Temporary Leadtime Allowance Alternative Standards according to the provisions of paragraph (e)(2) of this section, and the provisions of this paragraph (e)(3) shall not apply. Vehicles selected to comply with these standards shall not be included in the calculations of the manufacturer's fleet average standards under paragraph (c) of this section.

(4) To calculate the applicable Temporary Leadtime Allowance Alternative Standards, qualifying manufacturers shall determine the fleet average standard separately for the passenger automobiles and light trucks selected by the manufacturer to be subject to the Temporary Leadtime Allowance Alternative Standards, subject to the limitations expressed in paragraphs (e)(1) through (3) of this section.

(i) The Temporary Leadtime Allowance Alternative Standard applicable to qualified passenger automobiles as defined in § 600.002–08 of this chapter shall be the standard calculated using the provisions of paragraph (c)(2)(ii) of this section for the appropriate model year multiplied by 1.25 and rounded to the nearest whole gram per mile. For the purposes of applying paragraph (c)(2)(ii) of this section to determine the standard, the passenger automobile fleet shall be limited to those passenger automobiles subject to the Temporary Leadtime Allowance Alternative Standard.

(ii) The Temporary Leadtime Allowance Alternative Standard applicable to qualified light trucks (*i.e.* non-passenger automobiles as defined in § 600.002–08 of this chapter) shall be the standard calculated using the provisions of paragraph (c)(3)(ii) of this section for the appropriate model year multiplied by 1.25 and rounded to the nearest whole gram per mile. For the purposes of applying paragraph (c)(3)(ii) of this section to determine the standard, the light truck fleet shall be limited to those light trucks subject to the Temporary Leadtime Allowance Alternative Standard.

(5) Manufacturers choosing to optionally apply these standards are subject to the restrictions on credit banking and trading specified in § 86.1865–12.

(f) *Nitrous oxide (N_2O) and methane (CH_4) exhaust emission standards for passenger automobiles and light trucks.* Each manufacturer's fleet of combined passenger automobile and light trucks must comply with N_2O and CH_4 standards using either the provisions of paragraph (f)(1) of this section or the provisions of paragraph (f)(2) of this section. The manufacturer may not use the provisions of both paragraphs (f)(1) and (f)(2) of this section in a model year. For example, a manufacturer may not use the provisions of paragraph (f)(1) of this section for their passenger automobile fleet and the provisions of paragraph (f)(2) for their light truck fleet in the same model year.

(1) *Standards applicable to each test group.*

(i) Exhaust emissions of nitrous oxide (N_2O) shall not exceed 0.010 grams per mile at full useful life, as measured according to the Federal Test Procedure (FTP) described in subpart B of this part.

(ii) Exhaust emissions of methane (CH_4) shall not exceed 0.030 grams per mile at full useful life, as measured according to the Federal Test Procedure (FTP) described in subpart B of this part.

(2) *Including N_2O and CH_4 in fleet averaging program.* Manufacturers may elect to not meet the emission standards in paragraph (f)(1) of this section. Manufacturers making this election shall include N_2O and CH_4 emissions in the determination of their fleet average carbon-related exhaust emissions, as calculated in subpart F of part 600 of this chapter. Manufacturers using this option must include both N_2O and CH_4 full useful life values in the fleet average calculations for passenger automobiles and light trucks. Use of this option will account for N_2O and CH_4 emissions within the carbon-related exhaust emission value determined for each model type according to the provisions part 600 of this chapter. This option requires the determination of full useful life emission values for both the Federal Test Procedure and the Highway Fuel Economy Test.

■ 18. Section 86.1823–08 is amended by adding paragraph (m) to read as follows:

§ 86.1823–08 Durability demonstration procedures for exhaust emissions.

* * * * *

(m) *Durability demonstration procedures for vehicles subject to the greenhouse gas exhaust emission standards specified in § 86.1818–12.*

(1) *CO_2.* (i) Unless otherwise specified under paragraph (m)(1)(ii) of this section, manufacturers may use a multiplicative CO_2 deterioration factor of one or an additive deterioration factor of zero.

(ii) Based on an analysis of industry-wide data, EPA may periodically establish and/or update the deterioration factor for CO_2 emissions including air conditioning and other credit related emissions. Deterioration factors established and/or updated under this paragraph (m)(1)(ii) will provide adequate lead time for manufacturers to plan for the change.

(iii) Alternatively, manufacturers may use the whole-vehicle mileage accumulation procedures in § 86.1823–08 paragraphs (c) or (d)(1) to determine CO_2 deterioration factors. In this case, each FTP test performed on the durability data vehicle selected under § 86.1822–01 of this part must also be accompanied by an HFET test, and combined FTP/HFET CO_2 results determined by averaging the city (FTP) and highway (HFET) CO_2 values, weighted 0.55 and 0.45 respectively. The deterioration factor will be determined for this combined CO_2 value. Calculated multiplicative deterioration factors that are less than one shall be set to equal one, and calculated additive deterioration factors that are less than zero shall be set to zero.

(iv) If, in the good engineering judgment of the manufacturer, the deterioration factors determined according to paragraphs (m)(1)(i), (m)(1)(ii), or (m)(1)(iii) of this section do not adequately account for the expected CO_2 emission deterioration over the vehicle's useful life, the manufacturer may petition EPA to request a more appropriate deterioration factor.

(2) *N_2O and CH_4.* (i) For manufacturers complying with the emission standards for N_2O and CH_4 specified in § 86.1818–12(f)(1), deterioration factors for N_2O and CH_4 shall be determined according to the provisions of paragraphs (a) through (l) of this section.

(ii) For manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2), separate deterioration factors shall be determined for the FTP and HFET test cycles. Therefore each FTP test performed on the durability data vehicle selected under § 86.1822–01 of this part must also be accompanied by an HFET test.

(iii) For the 2012 through 2014 model years only, manufacturers may use alternative deterioration factors. For N_2O, the alternative deterioration factor to be used to adjust FTP and HFET emissions is the deterioration factor determined for NO_X emissions according to the provisions of this section. For CH_4, the alternative deterioration factor to be used to adjust FTP and HFET emissions is the deterioration factor determined for NMOG or NMHC emissions according to the provisions of this section.

(3) *Other carbon-related exhaust emissions.* Deterioration factors shall be determined according to the provisions of paragraphs (a) through (l) of this section. Optionally, in lieu of determining emission-specific FTP and HFET deterioration factors for CH_3OH (methanol), HCHO (formaldehyde), C_2H_5OH (ethanol), and C_2H_4O (acetaldehyde), manufacturers may use the deterioration factor determined for NMOG or NMHC emissions according to the provisions of this section.

(4) *Air Conditioning leakage and efficiency or other emission credit requirements to comply with exhaust CO_2 standards.* Manufactures will attest to the durability of components and systems used to meet the CO_2 standards. Manufacturers may submit engineering data to provide durability demonstration.

■ 19. Section 86.1827–01 is amended by revising paragraph (a)(5) and by adding paragraph (f) to read as follows:

§ 86.1827–01 Test group determination.

* * * * *

(a) * * *

(5) Subject to the same emission standards (except for CO_2), or FEL in the case of cold temperature NMHC standards, except that a manufacturer may request to group vehicles into the same test group as vehicles subject to more stringent standards, so long as all the vehicles within the test group are certified to the most stringent standards applicable to any vehicle within that test group. Light-duty trucks and light-duty vehicles may be included in the same test group if all vehicles in the test group are subject to the same emission standards, with the exception of the CO_2 standard and/or the total HC standard.

* * * * *

(f) Unless otherwise approved by the Administrator, a manufacturer of electric vehicles must create separate test groups based on the type of battery technology, the capacity and voltage of the battery, and the type and size of the electric motor.

■ 20. Section 86.1829–01 is amended by revising paragraph (b)(1)(i) and by adding paragraph (b)(1)(iii)(G) to read as follows:

§ 86.1829–01 Durability and emission testing requirements; waivers.

* * * * *

(b) * *

(1) * * *

(i) *Testing at low altitude.* One EDV shall be tested in each test group for exhaust emissions using the FTP and SFTP test procedures of subpart B of this part and the HFET test procedure of subpart B of part 600 of this chapter. The configuration of the EDV will be determined under the provisions of § 86.1828–01 of this subpart.

* * * * *

(iii) * * *

(G) For the 2012 through 2014 model years only, in lieu of testing a vehicle for N_2O emissions, a manufacturer may provide a statement in its application for certification that such vehicles comply with the applicable standards. Such a statement must be based on previous emission tests, development tests, or other appropriate information and good engineering judgment.

* * * * *

■ 21. Section 86.1835–01 is amended as follows:

■ a. By revising paragraph (a)(4).

■ b. By revising paragraph (b)(1) introductory text.

■ c. By adding paragraph (b)(1)(vi).

■ d. By revising paragraph (b)(3).

■ e. By revising paragraph (c)(1)(ii).

§ 86.1835–01 Confirmatory certification testing.

(a) * * *

(4) Retesting for fuel economy reasons or for compliance with greenhouse gas exhaust emission standards in § 86.181–12 may be conducted under the provisions of § 600.008–08 of this chapter.

(b) * * *

(1) If the Administrator determines not to conduct a confirmatory test under the provisions of paragraph (a) of this section, manufacturers of light-duty vehicles, light-duty trucks, and/or medium-duty passenger vehicles will conduct a confirmatory test at their facility after submitting the original test data to the Administrator whenever any of the conditions listed in paragraphs (b)(1)(i) through (vi) of this section exist, and complete heavy-duty vehicles manufacturers will conduct a confirmatory test at their facility after submitting the original test data to the Administrator whenever the conditions listed in paragraph (b)(1)(i) or (b)(1)(ii) of this section exist, as follows:

* * * * *

(vi) The exhaust carbon-related exhaust emissions of the test as measured in accordance with the procedures in 40 CFR part 600 are lower than expected based on procedures approved by the Administrator.

* * * * *

(3) For light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles the manufacturer shall conduct a retest of the FTP or highway test if the difference between the fuel economy of the confirmatory test and the original manufacturer's test equals or exceeds three percent (or such lower percentage to be applied consistently to all manufacturer conducted confirmatory testing as requested by the manufacturer and approved by the Administrator).

(i) For use in the fuel economy and exhaust greenhouse gas fleet averaging program described in 40 CFR parts 86 and 600, the manufacturer may, in lieu of conducting a retest, accept as official the lower of the original and confirmatory test fuel economy results, and by doing so will also accept as official the calculated CREE value associated with the lower fuel economy test results.

(ii) The manufacturer shall conduct a second retest of the FTP or highway test if the fuel economy difference between the second confirmatory test and the original manufacturer test equals or exceeds three percent (or such lower percentage as requested by the manufacturer and approved by the Administrator) and the fuel economy difference between the second confirmatory test and the first confirmatory test equals or exceeds three percent (or such lower percentage as requested by the manufacturer and approved by the Administrator). In lieu of conducting a second retest, the manufacturer may accept as official (for use in the fuel economy program and the exhaust greenhouse gas fleet averaging program) the lowest fuel economy of the original test, the first confirmatory test, and the second confirmatory test fuel economy results, and by doing so will also accept as official the calculated CREE value associated with the lowest fuel economy test results.

(c) * * *

(1) * * *

(ii) Official test results for fuel economy and exhaust CO_2 emission purposes are determined in accordance with the provisions of § 600.008–08 of this chapter.

* * * * *

■ 22. Section 86.1841–01 is amended by adding paragraph (a)(3) and revising paragraph (b) to read as follows:

§ 86.1841–01 Compliance with emission standards for the purpose of certification.

(a) * * *

(3) Compliance with CO_2 exhaust emission standards shall be demonstrated at certification by the certification levels on the FTP and HFET tests for carbon-related exhaust emissions determined according to § 600.113–08 of this chapter.

* * * * *

(b) To be considered in compliance with the standards for the purposes of certification, the certification levels for the test vehicle calculated in paragraph (a) of this section shall be less than or equal to the standards for all emission constituents to which the test group is subject, at both full and intermediate useful life as appropriate for that test group.

* * * * *

■ 23. Section 86.1845–04 is amended as follows:

■ a. By revising paragraph (a)(1).

■ b. By revising paragraph (b)(5)(i).

■ c. By revising paragraph (c)(5)(i).

§ 86.1845–04 Manufacturer in-use verification testing requirements.

(a) * * *

(1) A manufacturer of LDVs, LDTs, MDPVs and/or complete HDVs must test, or cause to have tested, a specified number of LDVs, LDTs, MDPVs and complete HDVs. Such testing must be conducted in accordance with the provisions of this section. For purposes of this section, the term vehicle includes light-duty vehicles, light-duty trucks and medium-duty passenger vehicles.

* * * * *

(b) * * *

(5) * * *

(i) Each test vehicle of a test group shall be tested in accordance with the Federal Test Procedure and the US06 portion of the Supplemental Federal Test Procedure as described in subpart B of this part, when such test vehicle is tested for compliance with applicable exhaust emission standards under this subpart. Test vehicles subject to applicable exhaust CO_2 emission standards under this subpart shall also be tested in accordance with the highway fuel economy test as described in part 600, subpart B of this chapter.

* * * * *

(c) * * *

(5) * * *

(i) Each test vehicle shall be tested in accordance with the Federal Test Procedure and the US06 portion of the Supplemental Federal Test Procedure as described in subpart B of this part when such test vehicle is tested for compliance with applicable exhaust emission standards under this subpart. Test vehicles subject to applicable exhaust CO_2 emission standards under this subpart shall also be tested in accordance with the highway fuel economy test as described in part 600, subpart B of this chapter. The US06 portion of the SFTP is not required to be performed on vehicles certified in accordance with the National LEV provisions of subpart R of this part. One test vehicle from each test group shall receive a Federal Test Procedure at high altitude. The test vehicle tested at high altitude is not required to be one of the same test vehicles tested at low altitude. The test vehicle tested at high altitude is counted when determining the compliance with the requirements shown in Table S04–06 and Table S04–07 in paragraph (b)(3) of this section or the expanded sample size as provided for in this paragraph (c).

* * * * *

■ 24. Section 86.1846–01 is amended by revising paragraphs (a)(1) and (b) introductory text to read as follows:

§ 86.1846–01 Manufacturer in-use confirmatory testing requirements.

(a) * * *

(1) A manufacturer of LDVs, LDTs and/or MDPVs must test, or cause testing to be conducted, under this section when the emission levels shown by a test group sample from testing under §§ 86.1845–01 or 86.1845–04, as applicable, exceeds the criteria specified in paragraph (b) of this section. The testing required under this section applies separately to each test group and at each test point (low and high mileage) that meets the specified criteria. The testing requirements apply separately for each model year starting with model year 2001. These provisions do not apply to heavy-duty vehicles or heavy-duty engines prior to the 2007 model year. These provisions do not apply to emissions of CO_2, CH_4, and N_2O.

* * * * *

(b) *Criteria for additional testing.* A manufacturer shall test a test group or a subset of a test group as described in paragraph (j) of this section when the results from testing conducted under §§ 86.1845–01 and 86.1845–04, as applicable, show mean emissions for that test group of any pollutant(s) (except CO_2, CH_4, and N_2O) to be equal to or greater than 1.30 times the applicable in-use standard and a failure rate, among the test group vehicles, for the corresponding pollutant(s) of fifty percent or greater.

* * * * *

■ 25. Section 86.1848–10 is amended by adding paragraph (c)(9) to read as follows:

§ 86.1848–10 Certification.

* * * * *

(c) * * *

(9) For 2012 and later model year LDVs, LDTs, and MDPVs, all certificates of conformity issued are conditional upon compliance with all provisions of § 86.1818–12 and § 86.1865–12 both during and after model year production. The manufacturer bears the burden of establishing to the satisfaction of the Administrator that the terms and conditions upon which the certificate(s) was (were) issued were satisfied. For recall and warranty purposes, vehicles not covered by a certificate of

conformity will continue to be held to the standards stated or referenced in the certificate that otherwise would have applied to the vehicles.

(i) Failure to meet the fleet average CO_2 requirements will be considered a failure to satisfy the terms and conditions upon which the certificate(s) was (were) issued and the vehicles sold in violation of the fleet average CO_2 standard will not be covered by the certificate(s). The vehicles sold in violation will be determined according to § 86.1865–12(k)(7).

(ii) Failure to comply fully with the prohibition against selling credits that are not generated or that are not available, as specified in § 86.1865–12, will be considered a failure to satisfy the terms and conditions upon which the certificate(s) was (were) issued and the vehicles sold in violation of this prohibition will not be covered by the certificate(s).

* * * * *

■ 26. A new § 86.1854–12 is added to read as follows:

§ 86.1854–12 Prohibited acts.

(a) The following acts and the causing thereof are prohibited:

(1) In the case of a manufacturer, as defined by § 86.1803, of new motor vehicles or new motor vehicle engines for distribution in commerce, the sale, or the offering for sale, or the introduction, or delivery for introduction, into commerce, or (in the case of any person, except as provided by regulation of the Administrator), the importation into the United States of any new motor vehicle or new motor vehicle engine subject to this subpart, unless such vehicle or engine is covered by a certificate of conformity issued (and in effect) under regulations found in this subpart (except as provided in Section 203(b) of the Clean Air Act (42 U.S.C. 7522(b)) or regulations promulgated thereunder).

(2)(i) For any person to fail or refuse to permit access to or copying of records or to fail to make reports or provide information required under Section 208 of the Clean Air Act (42 U.S.C. 7542) with regard to vehicles.

(ii) For a person to fail or refuse to permit entry, testing, or inspection authorized under Section 206(c) (42 U.S.C. 7525(c)) or Section 208 of the Clean Air Act (42 U.S.C. 7542) with regard to vehicles.

(iii) For a person to fail or refuse to perform tests, or to have tests performed as required under Section 208 of the Clean Air Act (42 U.S.C. 7542) with regard to vehicles.

(iv) For a person to fail to establish or maintain records as required under §§ 86.1844, 86.1862, 86.1864, and 86.1865 with regard to vehicles.

(v) For any manufacturer to fail to make information available as provided by regulation under Section 202(m)(5) of the Clean Air Act (42 U.S.C. 7521(m)(5)) with regard to vehicles.

(3)(i) For any person to remove or render inoperative any device or element of design installed on or in a vehicle or engine in compliance with regulations under this subpart prior to its sale and delivery to the ultimate purchaser, or for any person knowingly to remove or render inoperative any such device or element of design after such sale and delivery to the ultimate purchaser.

(ii) For any person to manufacture, sell or offer to sell, or install, any part or component intended for use with, or as part of, any vehicle or engine, where a principal effect of the part or component is to bypass, defeat, or render inoperative any device or element of design installed on or in a vehicle or engine in compliance with regulations issued under this subpart, and where the person knows or should know that the part or component is being offered for sale or installed for this use or put to such use.

(4) For any manufacturer of a vehicle or engine subject to standards prescribed under this subpart:

(i) To sell, offer for sale, introduce or deliver into commerce, or lease any such vehicle or engine unless the manufacturer has complied with the requirements of Section 207(a) and (b) of the Clean Air Act (42 U.S.C. 7541(a), (b)) with respect to such vehicle or engine, and unless a label or tag is affixed to such vehicle or engine in accordance with Section 207(c)(3) of the Clean Air Act (42 U.S.C. 7541(c)(3)).

(ii) To fail or refuse to comply with the requirements of Section 207 (c) or (e) of the Clean Air Act (42 U.S.C. 7541(c) or (e)).

(iii) Except as provided in Section 207(c)(3) of the Clean Air Act (42 U.S.C. 7541(c)(3)), to provide directly or indirectly in any communication to the ultimate purchaser or any subsequent purchaser that the coverage of a warranty under the Clean Air Act is conditioned upon use of any part, component, or system manufactured by the manufacturer or a person acting for the manufacturer or under its control, or conditioned upon service performed by such persons.

(iv) To fail or refuse to comply with the terms and conditions of the warranty under Section 207(a) or (b) of the Clean Air Act (42 U.S.C. 7541(a) or (b)).

(b) For the purposes of enforcement of this subpart, the following apply:

(1) No action with respect to any element of design referred to in paragraph (a)(3) of this section (including any adjustment or alteration of such element) shall be treated as a prohibited act under paragraph (a)(3) of this section if such action is in accordance with Section 215 of the Clean Air Act (42 U.S.C. 7549);

(2) Nothing in paragraph (a)(3) of this section is to be construed to require the use of manufacturer parts in maintaining or repairing a vehicle or engine. For the purposes of the preceding sentence, the term "manufacturer parts" means, with respect to a motor vehicle engine, parts produced or sold by the manufacturer of the motor vehicle or motor vehicle engine;

(3) Actions for the purpose of repair or replacement of a device or element of design or any other item are not considered prohibited acts under paragraph (a)(3) of this section if the action is a necessary and temporary procedure, the device or element is replaced upon completion of the procedure, and the action results in the proper functioning of the device or element of design;

(4) Actions for the purpose of a conversion of a motor vehicle or motor vehicle engine for use of a clean alternative fuel (as defined in title II of the Clean Air Act) are not considered prohibited acts under paragraph (a) of this section if:

(i) The vehicle complies with the applicable standard when operating on the alternative fuel; and

(ii) In the case of engines converted to dual fuel or flexible use, the device or element is replaced upon completion of the conversion procedure, and the action results in proper functioning of the device or element when the motor vehicle operates on conventional fuel.

■ 27. A new § 86.1865–12 is added to subpart S to read as follows:

§ 86.1865–12 How to comply with the fleet average CO_2 standards.

(a) *Applicability.* (1) Unless otherwise exempted under the provisions of § 86.1801–12(j), CO_2 fleet average exhaust emission standards apply to:

(i) 2012 and later model year passenger automobiles and light trucks.

(ii) Aftermarket conversion systems as defined in 40 CFR 85.502.

(iii) Vehicles imported by ICIs as defined in 40 CFR 85.1502.

(2) The terms "passenger automobile" and "light truck" as used in this section have the meanings as defined in § 86.1818–12.

(b) *Useful life requirements.* Full useful life requirements for CO_2 standards are defined in § 86.1818–12. There is not an intermediate useful life standard for CO_2 emissions.

(c) *Altitude.* Altitude requirements for CO_2 standards are provided in § 86.1810–09(f).

(d) *Small volume manufacturer certification procedures.* Certification procedures for small volume manufacturers are provided in § 86.1838–01. Small businesses meeting certain criteria may be exempted from the greenhouse gas emission standards in § 86.1818–12 according to the provisions of § 86.1801–12(j).

(e) *CO_2 fleet average exhaust emission standards.* The fleet average standards referred to in this section are the corporate fleet average CO_2 standards for passenger automobiles and light trucks set forth in § 86.1818–12(c) and (e). The fleet average CO_2 standards applicable in a given model year are calculated separately for passenger automobiles and light trucks for each manufacturer and each model year according to the provisions in § 86.1818–12. Each manufacturer must comply with the applicable CO_2 fleet average standard on a production-weighted average basis, for each separate averaging set, at the end of each model year, using the procedure described in paragraph (j) of this section.

(f) *In-use CO_2 standards.* In-use CO_2 exhaust emission standards applicable to each model type are provided in § 86.1818–12(d).

(g) *Durability procedures and method of determining deterioration factors (DFs).* Deterioration factors for CO_2 exhaust emission standards are provided in § 86.1823–08(m).

(h) *Vehicle test procedures.* (1) The test procedures for demonstrating compliance with CO_2 exhaust emission standards are contained in subpart B of this part and subpart B of part 600 of this chapter.

(2) Testing of all passenger automobiles and light trucks to determine compliance with CO_2 exhaust emission standards set forth in this section must be on a loaded vehicle weight (LVW) basis, as defined in § 86.1803–01.

(3) Testing for the purpose of providing certification data is required only at low altitude conditions. If hardware and software emission control strategies used during low altitude condition testing are not used similarly across all altitudes for in-use operation, the manufacturer must include a statement in the application for certification, in accordance with § 86.1844–01(d)(11) and § 86.1810–09(f), stating what the different strategies are and why they are used.

(i) *Calculating the fleet average carbon-related exhaust emissions.* (1) Manufacturers must compute separate production-weighted fleet average carbon-related exhaust emissions at the end of the model year for passenger automobiles and light trucks, using actual production, where production means vehicles produced and delivered for sale, and certifying model types to standards as defined in § 86.1818–12. The model type carbon-related exhaust emission results determined according to 40 CFR part 600 subpart F (in units of grams per mile rounded to the nearest whole number) become the certification standard for each model type.

(2) Manufacturers must separately calculate production-weighted fleet average carbon-related exhaust emissions levels for the following averaging sets according to the provisions of part 600 subpart F of this chapter:

(i) Passenger automobiles subject to the fleet average CO_2 standards specified in § 86.1818–12(c)(2);

(ii) Light trucks subject to the fleet average CO_2 standards specified in § 86.1818–12(c)(3);

(iii) Passenger automobiles subject to the Temporary Leadtime Allowance Alternative Standards specified in § 86.1818–12(e), if applicable; and

(iv) Light trucks subject to the Temporary Leadtime Allowance Alternative Standards specified in § 86.1818–12(e), if applicable.

(j) *Certification compliance and enforcement requirements for CO_2 exhaust emission standards.* (1) Compliance and enforcement requirements are provided in § 86.1864–10 and § 86.1848–10(c)(9).

(2) The certificate issued for each test group requires all model types within that test group to meet the in-use emission standards to which each model type is certified as outlined in § 86.1818–12(d).

(3) Each manufacturer must comply with the applicable CO_2 fleet average standard on a production-weighted average basis, at the end of each model year, using the procedure described in paragraph (i) of this section.

(4) Each manufacturer must comply on an annual basis with the fleet average standards as follows:

(i) Manufacturers must report in their annual reports to the Agency that they met the relevant corporate average standard by showing that their production-weighted average CO_2 emissions levels of passenger automobiles and light trucks, as applicable, are at or below the applicable fleet average standard; or

(ii) If the production-weighted average is above the applicable fleet average standard, manufacturers must obtain and apply sufficient CO_2 credits as authorized under paragraph (k)(8) of this section. A manufacturer must show that they have offset any exceedence of the corporate average standard via the use of credits. Manufacturers must also include their credit balances or deficits in their annual report to the Agency.

(iii) If a manufacturer fails to meet the corporate average CO_2 standard for four consecutive years, the vehicles causing the corporate average exceedence will be considered not covered by the certificate of conformity (*see* paragraph (k)(8) of this section). A manufacturer will be subject to penalties on an individual-vehicle basis for sale of vehicles not covered by a certificate.

(iv) EPA will review each manufacturer's production to designate the vehicles that caused the exceedence of the corporate average standard. EPA will designate as nonconforming those vehicles in test groups with the highest certification emission values first, continuing until reaching a number of vehicles equal to the calculated number of noncomplying vehicles as determined in paragraph (k)(8) of this section. In a group where only a portion of vehicles would be deemed nonconforming, EPA will determine the actual nonconforming vehicles by counting backwards from the last vehicle produced in that test group. Manufacturers will be liable for penalties for each vehicle sold that is not covered by a certificate.

(k) *Requirements for the CO_2 averaging, banking and trading (ABT) program.* (1) A manufacturer whose CO_2 fleet average emissions exceed the applicable standard must complete the calculation in paragraph (k)(4) of this section to determine the size of its CO_2 deficit. A manufacturer whose CO_2 fleet average emissions are less than the applicable standard must complete the calculation in paragraph (k)(4) of this section to generate CO_2 credits. In either case, the number of credits or debits must be rounded to the nearest whole number.

(2) There are no property rights associated with CO_2 credits generated under this subpart. Credits are a limited authorization to emit the designated amount of emissions. Nothing in this part or any other provision of law should be construed to limit EPA's authority to terminate or limit this authorization through a rulemaking.

(3) Each manufacturer must comply with the reporting and recordkeeping

requirements of paragraph (l) of this section for CO_2 credits, including early credits. The averaging, banking and trading program is enforceable through the certificate of conformity that allows the manufacturer to introduce any regulated vehicles into commerce.

(4) Credits are earned on the last day of the model year. Manufacturers must calculate, for a given model year and separately for passenger automobiles and light trucks, the number of credits or debits it has generated according to the following equation, rounded to the nearest megagram:

CO_2 Credits or Debits (Mg) = [(CO_2 Standard—Manufacturer's Production-Weighted Fleet Average CO_2 Emissions) × (Total Number of Vehicles Produced) × (Vehicle Lifetime Miles)] ÷ 1,000,000

Where:

CO_2 Standard = the applicable standard for the model year as determined by § 86.1818–12;

Manufacturer's Production-Weighted Fleet Average CO_2 Emissions = average calculated according to paragraph (i) of this section;

Total Number of Vehicles Produced = The number of vehicles domestically produced plus those imported as defined in § 600.511–80 of this chapter; and

Vehicle Lifetime Miles is 195,264 for passenger automobiles and 225,865 for light trucks.

(5) Total credits or debits generated in a model year, maintained and reported separately for passenger automobiles and light trucks, shall be the sum of the credits or debits calculated in paragraph (k)(4) of this section and any of the following credits, if applicable:

(i) Air conditioning leakage credits earned according to the provisions of § 86.1866–12(b);

(ii) Air conditioning efficiency credits earned according to the provisions of § 86.1866–12(c);

(iii) Off-cycle technology credits earned according to the provisions of § 86.1866–12(d).

(6) Unused CO_2 credits shall retain their full value through the five subsequent model years after the model year in which they were generated. Credits available at the end of the fifth model year after the year in which they were generated shall expire.

(7) Credits may be used as follows:

(i) Credits generated and calculated according to the method in paragraph (k)(4) of this section may not be used to offset deficits other than those deficits accrued with respect to the standard in § 86.1818–12. Credits may be banked and used in a future model year in which a manufacturer's average CO_2 level exceeds the applicable standard. Credits may be exchanged between the passenger automobile and light truck fleets of a given manufacturer. Credits may also be traded to another manufacturer according to the provisions in paragraph (k)(8) of this section. Before trading or carrying over credits to the next model year, a manufacturer must apply available credits to offset any deficit, where the deadline to offset that credit deficit has not yet passed.

(ii) The use of credits shall not change Selective Enforcement Auditing or in-use testing failures from a failure to a non-failure. The enforcement of the averaging standard occurs through the vehicle's certificate of conformity. A manufacturer's certificate of conformity is conditioned upon compliance with the averaging provisions. The certificate will be void ab initio if a manufacturer fails to meet the corporate average standard and does not obtain appropriate credits to cover its shortfalls in that model year or subsequent model years (see deficit carry-forward provisions in paragraph (k)(8) of this section).

(iii) *Special provisions for manufacturers using the Temporary Leadtime Allowance Alternative Standards.* (A) Credits generated by vehicles subject to the fleet average CO_2 standards specified in § 86.1818–12(c) may only be used to offset a deficit generated by vehicles subject to the Temporary Leadtime Allowance Alternative Standards specified in § 86.1818–12(e).

(B) Credits generated by a passenger automobile or light truck averaging set subject to the Temporary Leadtime Allowance Alternative Standards specified in § 86.1818–12(e)(4)(i) or (ii) of this section may be used to offset a deficit generated by an averaging set subject to the Temporary Leadtime Allowance Alternative Standards through the 2015 model year, except that manufacturers qualifying under the provisions of § 86.1818–12(e)(3) may use such credits to offset a deficit generated by an averaging set subject to the Temporary Leadtime Allowance Alternative Standards through the 2016 model year .

(C) Credits generated by an averaging set subject to the Temporary Leadtime Allowance Alternative Standards specified in § 86.1818–12(e)(4)(i) or (ii) of this section may not be used to offset a deficit generated by an averaging set subject to the fleet average CO_2 standards specified in § 86.1818–12(c)(2) or (3) or otherwise transferred to an averaging set subject to the fleet average CO_2 standards specified in § 86.1818–12(c)(2) or (3).

(D) Credits generated by vehicles subject to the Temporary Leadtime Allowance Alternative Standards specified in § 86.1818–12(e)(4)(i) or (ii) may be banked for use in a future model year (to offset a deficit generated by an averaging set subject to the Temporary Leadtime Allowance Alternative Standards). All such credits shall expire at the end of the 2015 model year, except that manufacturers qualifying under the provisions of § 86.1818–12(e)(3) may use such credits to offset a deficit generated by an averaging set subject to the Temporary Leadtime Allowance Alternative Standards through the 2016 model year.

(E) A manufacturer with any vehicles subject to the Temporary Leadtime Allowance Alternative Standards specified in § 86.1818–12(e)(4)(i) or (ii) of this section in a model year in which that manufacturer also generates credits with vehicles subject to the fleet average CO_2 standards specified in § 86.1818–12(c) may not trade or bank credits earned against the fleet average standards in § 86.1818–12(c) for use in a future model year.

(8) The following provisions apply if debits are accrued:

(i) If a manufacturer calculates that it has negative credits (also called "debits" or a "credit deficit") for a given model year, it may carry that deficit forward into the next three model years. Such a carry-forward may only occur after the manufacturer exhausts any supply of banked credits. At the end of the third model year, the deficit must be covered with an appropriate number of credits that the manufacturer generates or purchases. Any remaining deficit is subject to a voiding of the certificate ab initio, as described in this paragraph (k)(8). Manufacturers are not permitted to have a credit deficit for four consecutive years.

(ii) If debits are not offset within the specified time period, the number of vehicles not meeting the fleet average CO_2 standards (and therefore not covered by the certificate) must be calculated.

(A) Determine the gram per mile quantity of debits for the noncompliant vehicle category by multiplying the total megagram deficit by 1,000,000 and then dividing by the vehicle lifetime miles for the vehicle category (passenger automobile or light truck) specified in paragraph (k)(4) of this section.

(B) Divide the result by the fleet average standard applicable to the model year in which the debits were first incurred and round to the nearest whole number to determine the number of vehicles not meeting the fleet average CO_2 standards.

(iii) EPA will determine the vehicles not covered by a certificate because the condition on the certificate was not satisfied by designating vehicles in those test groups with the highest CO_2 emission values first and continuing until reaching a number of vehicles equal to the calculated number of noncomplying vehicles as determined in paragraph (k)(7) of this section. If this calculation determines that only a portion of vehicles in a test group contribute to the debit situation, then EPA will designate actual vehicles in that test group as not covered by the certificate, starting with the last vehicle produced and counting backwards.

(iv)(A) If a manufacturer ceases production of passenger cars and light trucks, the manufacturer continues to be responsible for offsetting any debits outstanding within the required time period. Any failure to offset the debits will be considered a violation of paragraph (k)(7)(i) of this section and may subject the manufacturer to an enforcement action for sale of vehicles not covered by a certificate, pursuant to paragraphs (k)(7)(ii) and (iii) of this section.

(B) If a manufacturer is purchased by, merges with, or otherwise combines with another manufacturer, the controlling entity is responsible for offsetting any debits outstanding within the required time period. Any failure to offset the debits will be considered a violation of paragraph (k)(7)(i) of this section and may subject the manufacturer to an enforcement action for sale of vehicles not covered by a certificate, pursuant to paragraphs (k)(7)(ii) and (iii) of this section.

(v) For purposes of calculating the statute of limitations, a violation of the requirements of paragraph (k)(7)(i) of this section, a failure to satisfy the conditions upon which a certificate(s) was issued and hence a sale of vehicles not covered by the certificate, all occur upon the expiration of the deadline for offsetting debits specified in paragraph (k)(7)(i) of this section.

(9) The following provisions apply to CO_2 credit trading:

(i) EPA may reject CO_2 credit trades if the involved manufacturers fail to submit the credit trade notification in the annual report.

(ii) A manufacturer may not sell credits that are not available for sale pursuant to the provisions in paragraph (k)(6) of this section.

(iii) In the event of a negative credit balance resulting from a transaction, both the buyer and seller are liable. EPA may void ab initio the certificates of conformity of all test groups participating in such a trade.

(iv) (A) If a manufacturer trades a credit that it has not generated pursuant to paragraph (k) of this section or acquired from another party, the manufacturer will be considered to have generated a debit in the model year that the manufacturer traded the credit. The manufacturer must offset such debits by the deadline for the annual report for that same model year.

(B) Failure to offset the debits within the required time period will be considered a failure to satisfy the conditions upon which the certificate(s) was issued and will be addressed pursuant to paragraph (k)(7) of this section.

(v) A manufacturer may only trade credits that it has generated pursuant to paragraph (k)(4) of this section or acquired from another party.

(l) *Maintenance of records and submittal of information relevant to compliance with fleet average CO_2 standards*—(1) *Maintenance of records.* (i) Manufacturers producing any light-duty vehicles, light-duty trucks, or medium-duty passenger vehicles subject to the provisions in this subpart must establish, maintain, and retain all the following information in adequately organized records for each model year:

(A) Model year.

(B) Applicable fleet average CO_2 standards for each averaging set as defined in paragraph (i) of this section.

(C) The calculated fleet average CO_2 value for each averaging set as defined in paragraph (i) of this section.

(D) All values used in calculating the fleet average CO_2 values.

(ii) Manufacturers producing any passenger cars or light trucks subject to the provisions in this subpart must establish, maintain, and retain all the following information in adequately organized records for each passenger car or light truck subject to this subpart:

(A) Model year.

(B) Applicable fleet average CO_2 standard.

(C) EPA test group.

(D) Assembly plant.

(E) Vehicle identification number.

(F) Carbon-related exhaust emission standard to which the passenger car or light truck is certified.

(G) In-use carbon-related exhaust emission standard.

(H) Information on the point of first sale, including the purchaser, city, and state.

(iii) Manufacturers must retain all required records for a period of eight years from the due date for the annual report. Records may be stored in any format and on any media, as long as manufacturers can promptly send EPA organized written records in English if requested by the Administrator. Manufacturers must keep records readily available as EPA may review them at any time.

(iv) The Administrator may require the manufacturer to retain additional records or submit information not specifically required by this section.

(v) Pursuant to a request made by the Administrator, the manufacturer must submit to the Administrator the information that the manufacturer is required to retain.

(vi) EPA may void ab initio a certificate of conformity for vehicles certified to emission standards as set forth or otherwise referenced in this subpart for which the manufacturer fails to retain the records required in this section or to provide such information to the Administrator upon request, or to submit the reports required in this section in the specified time period.

(2) *Reporting.* (i) Each manufacturer must submit an annual report. The annual report must contain for each applicable CO_2 standard, the calculated fleet average CO_2 value, all values required to calculate the CO_2 emissions value, the number of credits generated or debits incurred, all the values required to calculate the credits or debits, and the resulting balance of credits or debits.

(ii) For each applicable fleet average CO_2 standard, the annual report must also include documentation on all credit transactions the manufacturer has engaged in since those included in the last report. Information for each transaction must include all of the following:

(A) Name of credit provider.

(B) Name of credit recipient.

(C) Date the trade occurred.

(D) Quantity of credits traded in megagrams.

(E) Model year in which the credits were earned.

(iii) Manufacturers calculating early air conditioning leakage and/or efficiency credits under paragraph § 86.1867–12(b) of this section shall include in the 2012 report, the following information for each model year separately for passenger automobiles and light trucks and for each air conditioning system used to generate credits:

(A) A description of the air conditioning system.

(B) The leakage credit value and all the information required to determine this value.

(C) The total credits earned for each averaging set, model year, and region, as applicable.

(iv) Manufacturers calculating early advanced technology vehicle credits

under paragraph § 86.1867–12(c) shall include in the 2012 report, separately for each model year and separately for passenger automobiles and light trucks, the following information:

(A) The number of each model type of eligible vehicle sold.

(B) The cumulative model year production of eligible vehicles starting with the 2009 model year.

(C) The carbon-related exhaust emission value by model type and model year.

(v) Manufacturers calculating early off-cycle technology credits under paragraph § 86.1867–12(d) shall include in the 2012 report, for each model year and separately for passenger automobiles and light trucks, all test results and data required for calculating such credits.

(vi) Unless a manufacturer reports the data required by this section in the annual production report required under § 86.1844–01(e) or the annual report required under § 600.512–12 of this chapter, a manufacturer must submit an annual report for each model year after production ends for all affected vehicles produced by the manufacturer subject to the provisions of this subpart and no later than May 1 of the calendar year following the given model year. Annual reports must be submitted to: Director, Compliance and Innovative Strategies Division, U.S. Environmental Protection Agency, 2000 Traverwood, Ann Arbor, Michigan 48105.

(vii) Failure by a manufacturer to submit the annual report in the specified time period for all vehicles subject to the provisions in this section is a violation of section 203(a)(1) of the Clean Air Act (42 U.S.C. 7522 (a)(1)) for each applicable vehicle produced by that manufacturer.

(viii) If EPA or the manufacturer determines that a reporting error occurred on an annual report previously submitted to EPA, the manufacturer's credit or debit calculations will be recalculated. EPA may void erroneous credits, unless traded, and will adjust erroneous debits. In the case of traded erroneous credits, EPA must adjust the selling manufacturer's credit balance to reflect the sale of such credits and any resulting credit deficit.

(3) *Notice of opportunity for hearing.* Any voiding of the certificate under paragraph (l)(1)(vi) of this section will be made only after EPA has offered the affected manufacturer an opportunity for a hearing conducted in accordance with § 86.614–84 for light-duty vehicles or § 86.1014–84 for light-duty trucks and, if a manufacturer requests such a hearing, will be made only after an initial decision by the Presiding Officer.

■ 28. A new § 86.1866–12 is added to subpart S to read as follows:

§ 86.1866–12 CO_2 fleet average credit programs.

(a) *Incentive for certification of advanced technology vehicles.* Electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles, as those terms are defined in § 86.1803–01, that are certified and produced in the 2012 through 2016 model years may be eligible for a reduced CO_2 emission value under the provisions of this paragraph (a) and under the provisions of part 600 of this chapter.

(1) Electric vehicles, fuel cell vehicles, and plug-in hybrid electric vehicles may use a value of zero (0) grams/mile of CO_2 to represent the proportion of electric operation of a vehicle that is derived from electricity that is generated from sources that are not onboard the vehicle.

(2) The use of zero (0) grams/mile CO_2 is limited to the first 200,000 combined electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles produced and delivered for sale by a manufacturer in the 2012 through 2016 model years, except that a manufacturer that produces and delivers for sale 25,000 or more such vehicles in the 2012 model year shall be subject to a limitation on the use of zero (0) grams/mile CO_2 to the first 300,000 combined electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles produced and delivered for sale by a manufacturer in the 2012 through 2016 model years.

(b) *Credits for reduction of air conditioning refrigerant leakage.* Manufacturers may generate credits applicable to the CO_2 fleet average program described in § 86.1865–12 by implementing specific air conditioning system technologies designed to reduce air conditioning refrigerant leakage over the useful life of their passenger cars and/or light trucks. Credits shall be calculated according to this paragraph (b) for each air conditioning system that the manufacturer is using to generate CO_2 credits. Manufacturers may also generate early air conditioning refrigerant leakage credits under this paragraph (b) for the 2009 through 2011 model years according to the provisions of § 86.1867–12(b).

(1) The manufacturer shall calculate an annual rate of refrigerant leakage from an air conditioning system in grams per year according to the provisions of § 86.166–12.

(2) The CO_2-equivalent gram per mile leakage reduction to be used to calculate the total credits generated by the air conditioning system shall be determined according to the following formulae, rounded to the nearest tenth of a gram per mile:

(i) Passenger automobiles:

$$\text{Leakage credit} = MaxCredit \times \left[1 - \left(\frac{Leakage}{16.6}\right) \times \left(\frac{GWP_{REF}}{GWP_{HFC134a}}\right)\right]$$

Where:

MaxCredit is 12.6 (grams CO_2-equivalent/mile) for air conditioning systems using HFC–134a, and 13.8 (grams CO_2-equivalent/mile) for air conditioning systems using a refrigerant with a lower global warming potential.

Leakage means the annual refrigerant leakage rate determined according to the provisions of § 86.166–12(a), except if the calculated rate is less than 8.3 grams/year (4.1 grams/year for systems using electric compressors) the rate for the purpose of this formula shall be 8.3 grams/year (4.1 grams/year for systems using electric compressors);

The constant 16.6 is the average passenger car impact of air conditioning leakage in units of grams/year;

GWP_{REF} means the global warming potential of the refrigerant as indicated in paragraph (b)(5) of this section or as otherwise determined by the Administrator;

$GWP_{HFC134a}$ means the global warming potential of HFC–134a as indicated in paragraph (b)(5) of this section or as otherwise determined by the Administrator.

(ii) Light trucks:

$$\text{Leakage credit} = MaxCredit \times \left[1 - \left(\frac{Leakage}{20.7}\right) \times \left(\frac{GWP_{REF}}{GWP_{HFC134a}}\right)\right]$$

Where:

MaxCredit is 15.6 (grams CO_2-equivalent/mile) for air conditioning systems using HFC–134a, and 17.2 (grams CO_2-equivalent/mile) for air conditioning systems using a refrigerant with a lower global warming potential.

Leakage means the annual refrigerant leakage rate determined according to the provisions of § 86.166–12(a), except if the calculated rate is less than 10.4 grams/year (5.2 grams/year for systems using electric compressors) the rate for the purpose of this formula shall be 10.4 grams/year (5.2 grams/year for systems using electric compressors);

The constant 20.7 is the average passenger car impact of air conditioning leakage in units of grams/year;

GWP_{REF} means the global warming potential of the refrigerant as indicated in paragraph (b)(5) of this section or as otherwise determined by the Administrator;

GWP_{R134a} means the global warming potential of HFC–134a as indicated in paragraph (b)(5) of this section or as otherwise determined by the Administrator.

(3) The total leakage reduction credits generated by the air conditioning system shall be calculated separately for passenger cars and light trucks according to the following formula:

Total Credits (megagrams) = (Leakage × Production × VLM) ÷ 1,000,000

Where:

Leakage = the CO_2-equivalent leakage credit value in grams per mile determined in paragraph (b)(2) of this section.

Production = The total number of passenger cars or light trucks, whichever is applicable, produced with the air conditioning system to which to the leakage credit value from paragraph (b)(2) of this section applies.

VLM = vehicle lifetime miles, which for passenger cars shall be 195,264 and for light trucks shall be 225,865.

(4) The results of paragraph (b)(3) of this section, rounded to the nearest whole number, shall be included in the manufacturer's credit/debit totals calculated in § 86.1865–12(k)(5).

(5) The following values for refrigerant global warming potential (GWP_{REF}), or alternative values as determined by the Administrator, shall be used in the calculations of this paragraph (b). The Administrator will determine values for refrigerants not included in this paragraph (b)(5) upon request by a manufacturer.

(i) For HFC–134a, GWP_{REF} = 1430;

(ii) For HFC–152a, GWP_{REF} = 124;

(iii) For HFO–1234yf,: GWP_{REF} = 4;

(iv) For CO_2, GWP_{REF} = 1.

(c) *Credits for improving air conditioning system efficiency.* Manufacturers may generate credits applicable to the CO_2 fleet average program described in § 86.1865–12 by implementing specific air conditioning system technologies designed to reduce air conditioning-related CO_2 emissions over the useful life of their passenger cars and/or light trucks. Credits shall be calculated according to this paragraph (c) for each air conditioning system that the manufacturer is using to generate CO_2 credits. Manufacturers may also generate early air conditioning efficiency credits under this paragraph (c) for the 2009 through 2011 model years according to the provisions of § 86.1867–12(b). For model years 2012 and 2013 the manufacturer may determine air conditioning efficiency credits using the requirements in paragraphs (c)(1) through (4) of this section. For model years 2014 and later the eligibility requirements specified in paragraph (c)(5) of this section must be met before an air conditioning system is allowed to generate credits.

(1) Air conditioning efficiency credits are available for the following technologies in the gram per mile amounts indicated:

(i) Reduced reheat, with externally-controlled, variable-displacement compressor (*e.g.* a compressor that controls displacement based on temperature setpoint and/or cooling demand of the air conditioning system control settings inside the passenger compartment): 1.7 g/mi.

(ii) Reduced reheat, with externally-controlled, fixed-displacement or pneumatic variable displacement compressor (*e.g.* a compressor that controls displacement based on conditions within, or internal to, the air conditioning system, such as head pressure, suction pressure, or evaporator outlet temperature): 1.1 g/mi.

(iii) Default to recirculated air with closed-loop control of the air supply (sensor feedback to control interior air quality) whenever the ambient temperature is 75 °F or higher: 1.7 g/mi. Air conditioning systems that operated with closed-loop control of the air supply at different temperatures may receive credits by submitting an engineering analysis to the Administrator for approval.

(iv) Default to recirculated air with open-loop control air supply (no sensor feedback) whenever the ambient temperature is 75 °F or higher: 1.1 g/mi. Air conditioning systems that operate with open-loop control of the air supply at different temperatures may receive credits by submitting an engineering analysis to the Administrator for approval.

(v) Blower motor controls which limit wasted electrical energy (*e.g.* pulse width modulated power controller): 0.9 g/mi.

(vi) Internal heat exchanger (*e.g.* a device that transfers heat from the high-pressure, liquid-phase refrigerant entering the evaporator to the low-pressure, gas-phase refrigerant exiting the evaporator): 1.1 g/mi.

(vii) Improved condensers and/or evaporators with system analysis on the component(s) indicating a coefficient of performance improvement for the system of greater than 10% when compared to previous industry standard designs): 1.1 g/mi.

(viii) Oil separator: 0.6 g/mi. The manufacturer must submit an engineering analysis demonstrating the increased improvement of the system relative to the baseline design, where the baseline component for comparison is the version which a manufacturer most recently had in production on the same vehicle design or in a similar or related vehicle model. The characteristics of the baseline component shall be compared to the new component to demonstrate the improvement.

(2) Air conditioning efficiency credits are determined on an air conditioning system basis. For each air conditioning system that is eligible for a credit based on the use of one or more of the items listed in paragraph (c)(1) of this section, the total credit value is the sum of the gram per mile values listed in paragraph (c)(1) of this section for each item that applies to the air conditioning system. If the sum of those values for an air conditioning system is greater than 5.7 grams per mile, the total credit value is deemed to be 5.7 grams per mile.

(3) The total efficiency credits generated by an air conditioning system shall be calculated separately for passenger cars and light trucks according to the following formula:

Total Credits (Megagrams) = (Credit × Production × VLM) ÷ 1,000,000

Where:

Credit = the CO_2 efficiency credit value in grams per mile determined in paragraph

(c)(2) or (c)(5) of this section, whichever is applicable.

Production = The total number of passenger cars or light trucks, whichever is applicable, produced with the air conditioning system to which to the efficiency credit value from paragraph (c)(2) of this section applies.

VLM = vehicle lifetime miles, which for passenger cars shall be 195,264 and for light trucks shall be 225,865.

(4) The results of paragraph (c)(3) of this section, rounded to the nearest whole number, shall be included in the manufacturer's credit/debit totals calculated in § 86.1865–12(k)(5).

(5) Use of the Air Conditioning Idle Test Procedure is required after the 2013 model year as specified in this paragraph (c)(5).

(i) After the 2013 model year, for each air conditioning system selected by the manufacturer to generate air conditioning efficiency credits, the manufacturer shall perform the Air Conditioning Idle Test Procedure specified in § 86.165–14 of this part.

(ii) Using good engineering judgment, the manufacturer must select the vehicle configuration to be tested that is expected to result in the greatest increased CO_2 emissions as a result of the operation of the air conditioning system for which efficiency credits are being sought. If the air conditioning system is being installed in passenger automobiles and light trucks, a separate determination of the quantity of credits for passenger automobiles and light trucks must be made, but only one test vehicle is required to represent the air conditioning system, provided it represents the worst-case impact of the system on CO_2 emissions.

(iii) For an air conditioning system to be eligible to generate credits in the 2014 and later model years, the increased CO_2 emissions as a result of the operation of that air conditioning system determined according to the Idle Test Procedure in § 86.165–14 must be less than 21.3 grams per minute.

(A) If the increased CO_2 emissions determined from the Idle Test Procedure in § 86.165–14 is less than or equal to 14.9 grams/minute, the total credit value for use in paragraph (c)(3) of this section shall be as determined in paragraph (c)(2) of this section.

(B) If the increased CO_2 emissions determined from the Idle Test Procedure in § 86.165–14 is greater than 14.9 grams/minute and less than 21.3 grams/minute, the total credit value for use in paragraph (c)(3) of this section shall be as determined according to the following formula:

$$TCV = TCV_1 \times \left[1 - \left(\frac{ITP - 14.9}{6.4}\right)\right]$$

Where:

TCV = The total credit value for use in paragraph (c)(3) of this section;

TCV_1 = The total credit value determined according to paragraph (c)(2) of this section; and

ITP = the increased CO_2 emissions determined from the Idle Test Procedure in § 86.165–14.

(iv) Air conditioning systems with compressors that are solely powered by electricity shall submit Air Conditioning Idle Test Procedure data to be eligible to generate credits in the 2014 and later model years, but such systems are not required to meet a specific threshold to be eligible to generate such credits, as long as the engine remains off for a period of at least 2 minutes during the air conditioning on portion of the Idle Test Procedure in § 86.165–12(d).

(6) The following definitions apply to this paragraph (c):

(i) *Reduced reheat, with externally-controlled, variable displacement compressor* means a system in which compressor displacement is controlled via an electronic signal, based on input from sensors (*e.g.,* position or setpoint of interior temperature control, interior temperature, evaporator outlet air temperature, or refrigerant temperature) and air temperature at the outlet of the evaporator can be controlled to a level at 41 °F, or higher.

(ii) *Reduced reheat, with externally-controlled, fixed-displacement or pneumatic variable displacement compressor* means a system in which the output of either compressor is controlled by cycling the compressor clutch off-and-on via an electronic signal, based on input from sensors (*e.g.,* position or setpoint of interior temperature control, interior temperature, evaporator outlet air temperature, or refrigerant temperature) and air temperature at the outlet of the evaporator can be controlled to a level at 41 °F, or higher.

(iii) *Default to recirculated air mode* means that the default position of the mechanism which controls the source of air supplied to the air conditioning system shall change from outside air to recirculated air when the operator or the automatic climate control system has engaged the air conditioning system (*i.e.,* evaporator is removing heat), except under those conditions where dehumidification is required for visibility (*i.e.,* defogger mode). In vehicles equipped with interior air quality sensors (*e.g.,* humidity sensor, or carbon dioxide sensor), the controls may determine proper blend of air supply sources to maintain freshness of the cabin air and prevent fogging of windows while continuing to maximize the use of recirculated air. At any time, the vehicle operator may manually select the non-recirculated air setting during vehicle operation but the system must default to recirculated air mode on subsequent vehicle operations (*i.e.,* next vehicle start). The climate control system may delay switching to recirculation mode until the interior air temperature is less than the outside air temperature, at which time the system must switch to recirculated air mode.

(iv) *Blower motor controls which limit waste energy* means a method of controlling fan and blower speeds which does not use resistive elements to decrease the voltage supplied to the motor.

(v) *Improved condensers and/or evaporators* means that the coefficient of performance (COP) of air conditioning system using improved evaporator and condenser designs is 10 percent higher, as determined using the bench test procedures described in SAE J2765 "Procedure for Measuring System COP of a Mobile Air Conditioning System on a Test Bench," when compared to a system using standard, or prior model year, component designs. SAE J2765 is incorporated by reference; see § 86.1. The manufacturer must submit an engineering analysis demonstrating the increased improvement of the system relative to the baseline design, where the baseline component(s) for comparison is the version which a manufacturer most recently had in production on the same vehicle design or in a similar or related vehicle model. The dimensional characteristics (*e.g.,* tube configuration/thickness/spacing, and fin density) of the baseline component(s) shall be compared to the new component(s) to demonstrate the improvement in coefficient of performance.

(vi) *Oil separator* means a mechanism which removes at least 50 percent of the oil entrained in the oil/refrigerant mixture exiting the compressor and returns it to the compressor housing or compressor inlet, or a compressor design which does not rely on the circulation of an oil/refrigerant mixture for lubrication.

(d) *Credits for CO_2-reducing technologies where the CO_2 reduction is not captured on the Federal Test Procedure or the Highway Fuel Economy Test.* With prior EPA approval, manufacturers may optionally generate credits applicable to the CO_2 fleet average program described in § 86.1865–12 by implementing innovative technologies that have a

measurable, demonstrable, and verifiable real-world CO_2 reduction. These optional credits are referred to as "off-cycle" credits and may be earned through the 2016 model year.

(1) *Qualification criteria.* To qualify for this credit, the criteria in this paragraph (d)(1) must be met as determined by the Administratory:

(i) The technology must be an innovative and novel vehicle- or engine-based approach to reducing greenhouse gas emissions, and not in widespread use.

(ii) The CO_2-reducing impact of the technology must not be significantly measurable over the Federal Test Procedure and the Highway Fuel Economy Test. The technology must improve CO_2 emissions beyond the driving conditions of those tests.

(iii) The technology must be able to be demonstrated to be effective for the full useful life of the vehicle. Unless the manufacturer demonstrates that the technology is not subject to in-use deterioration, the manufacturer must account for the deterioration in their analysis.

(2) *Quantifying the CO_2 reductions of an off-cycle technology.* The manufacturer may use one of the two options specified in this paragraph (d)(2) to measure the CO_2-reducing potential of an innovative off-cycle technology. The option described in paragraph (d)(2)(ii) of this section may be used only with EPA approval, and to use that option the manufacturer must be able to justify to the Administrator why the 5-cycle option described in paragraph (d)(2)(i) of this section insufficiently characterizes the effectiveness of the off-cycle technology. The manufacturer should notify EPA in their pre-model year report of their intention to generate any credits under paragraph (d) of this section.

(i) *Technology demonstration using EPA 5-cycle methodology.* To demonstrate an off-cycle technology and to determine a CO_2 credit using the EPA 5-cycle methodology, the manufacturer shall determine 5-cycle city/highway combined carbon-related exhaust emissions both with the technology installed and operating and without the technology installed and/or operating. The manufacturer shall conduct the following steps, both with the off-cycle technology installed and operating and without the technology operating or installed.

(A) Determine carbon-related exhaust emissions over the FTP, the HFET, the US06, the SC03, and the cold temperature FTP test procedures according to the test procedure provisions specified in 40 CFR part 600 subpart B and using the calculation procedures specified in § 600.113–08 of this chapter.

(B) Calculate 5-cycle city and highway carbon-related exhaust emissions using data determined in paragraph (d)(2)(i)(A) of this section according to the calculation procedures in paragraphs (d) through (f) of § 600.114–08 of this chapter.

(C) Calculate a 5-cycle city/highway combined carbon-related exhaust emission value using the city and highway values determined in paragraph (d)(2)(i)(B) of this section.

(D) Subtract the 5-cycle city/highway combined carbon-related exhaust emission value determined with the off-cycle technology operating from the 5-cycle city/highway combined carbon-related exhaust emission value determined with the off-cycle technology not operating. The result is the gram per mile credit amount assigned to the technology.

(ii) *Technology demonstration using alternative EPA-approved methodology.* In cases where the EPA 5-cycle methodology described in paragraph (d)(2)(i) of this section cannot adequately measure the emission reduction attributable to an innovative off-cycle technology, the manufacturer may develop an alternative approach. Prior to a model year in which a manufacturer intends to seek these credits, the manufacturer must submit a detailed analytical plan to EPA. EPA will work with the manufacturer to ensure that an analytical plan will result in appropriate data for the purposes of generating these credits. The alternative demonstration program must be approved in advance by the Administrator and should:

(A) Use modeling, on-road testing, on-road data collection, or other approved analytical or engineering methods;

(B) Be robust, verifiable, and capable of demonstrating the real-world emissions benefit with strong statistical significance;

(C) Result in a demonstration of baseline and controlled emissions over a wide range of driving conditions and number of vehicles such that issues of data uncertainty are minimized;

(D) Result in data on a model type basis unless the manufacturer demonstrates that another basis is appropriate and adequate.

(iii) *Calculation of total off-cycle credits.* Total off-cycle credits in Megagrams of CO_2 (rounded to the nearest whole number) shall be calculated separately for passenger automobiles and light trucks according to the following formula:

$$\text{Total Credits (Megagrams)} = (\text{Credit} \times \text{Production} \times \text{VLM}) \div 1{,}000{,}000$$

Where:

Credit = the 5-cycle credit value in grams per mile determined in paragraph (d)(2)(i)(D) or (d)(2)(ii) of this section.

Production = The total number of passenger cars or light trucks, whichever is applicable, produced with the off-cycle technology to which to the credit value determined in paragraph (d)(2)(i)(D) or (d)(2)(ii) of this section applies.

VLM = vehicle lifetime miles, which for passenger cars shall be 195,264 and for light trucks shall be 225,865.

(3) *Notice and opportunity for public comment.* The Administrator will publish a notice of availability in the **Federal Register** notifying the public of a manufacturer's proposed alternative off-cycle credit calculation methodology. The notice will include details regarding the proposed methodology, but will not include any Confidential Business Information. The notice will include instructions on how to comment on the methodology. The Administrator will take public comments into consideration in the final determination, and will notify the public of the final determination. Credits may not be accrued using an approved methodology until the model year following the final approval.

■ 29. A new § 86.1867–12 is added to subpart S to read as follows:

§ 86.1867–12 Optional early CO_2 credit programs.

Manufacturers may optionally generate CO_2 credits in the 2009 through 2011 model years for use in the 2012 and later model years subject to EPA approval and to the provisions of this section. Manufacturers may generate early fleet average credits, air conditioning leakage credits, air conditioning efficiency credits, early advanced technology credits, and early off-cycle technology credits. Manufacturers generating any credits under this section must submit an early credits report to the Administrator as required in this section. The terms "sales" and "sold" as used in this section shall mean vehicles produced and delivered for sale in the states and territories of the United States.

(a) *Early fleet average CO_2 reduction credits.* Manufacturers may optionally generate credits for reductions in their fleet average CO_2 emissions achieved in the 2009 through 2011 model years. To generate early fleet average CO_2 reduction credits, manufacturers must select one of the four pathways described in paragraphs (a)(1) through (4) of this section. The manufacturer may select only one pathway, and that

pathway must remain in effect for the 2009 through 2011 model years. Fleet average credits (or debits) must be calculated and reported to EPA for each model year under each selected pathway. Early credits are subject to five year carry-forward restrictions based on the model year in which the credits are generated.

(1) *Pathway 1.* To earn credits under this pathway, the manufacturer shall calculate an average carbon-related exhaust emission value to the nearest one gram per mile for the classes of motor vehicles identified in this paragraph (a)(1), and the results of such calculations will be reported to the Administrator for use in determining compliance with the applicable CO_2 early credit threshold values.

(i) An average carbon-related exhaust emission value calculation will be made for the combined LDV/LDT1 averaging set.

(ii) An average carbon-related exhaust emission value calculation will be made for the combined LDT2/HLDT/MDPV averaging set.

(iii) Average carbon-related exhaust emission values shall be determined according to the provisions of § 600.510–12 of this chapter, except that:

(A) Total U.S. model year sales data will be used, instead of production data.

(B) The average carbon-related exhaust emissions for alcohol fueled model types shall be calculated according to the provisions of § 600.510–12(j)(2)(ii)(B) of this chapter, without the use of the 0.15 multiplicative factor.

(C) The average carbon-related exhaust emissions for natural gas fueled model types shall be calculated according to the provisions of § 600.510–12(j)(2)(iii)(B) of this chapter, without the use of the 0.15 multiplicative factor.

(D) The average carbon-related exhaust emissions for alcohol dual fueled model types shall be the value measured using gasoline or diesel fuel, as applicable, and shall be calculated according to the provisions of § 600.510–12(j)(2)(vi) of this chapter, without the use of the 0.15 multiplicative factor and with F = 0. For the 2010 and 2011 model years only, if the California Air Resources Board has approved a manufacturer's request to use a non-zero value of F, the manufacturer may use such an approved value.

(E) The average carbon-related exhaust emissions for natural gas dual fueled model types shall be the value measured using gasoline or diesel fuel, as applicable, and shall be calculated according to the provisions of § 600.510–12(j)(2)(vii) of this chapter, without the use of the 0.15 multiplicative factor and with F = 0. For the 2010 and 2011 model years only, if the California Air Resources Board has approved a manufacturer's request to use a non-zero value of F, the manufacturer may use such an approved value.

(F) Carbon-related exhaust emission values for electric, fuel cell, and plug-in hybrid electric model types shall be included in the fleet average determined under paragraph (a)(1) of this section only to the extent that such vehicles are not being used to generate early advanced technology vehicle credits under paragraph (c) of this section.

(iv) Fleet average CO_2 credit threshold values.

Model year	LDV/LDT1	LDT2/HLDT/MDPV
2009	323	439
2010	301	420
2011	267	390

(v) Credits are earned on the last day of the model year. Manufacturers must calculate, for a given model year, the number of credits or debits it has generated according to the following equation, rounded to the nearest megagram:

CO_2 Credits or Debits (Mg) = [(CO_2 Credit Threshold − Manufacturer's Sales Weighted Fleet Average CO_2 Emissions) × (Total Number of Vehicles Sold) × (Vehicle Lifetime Miles)] ÷ 1,000,000

Where:

CO_2 Credit Threshold = the applicable credit threshold value for the model year and vehicle averaging set as determined by paragraph (a)(1)(iv) of this section;

Manufacturer's Sales Weighted Fleet Average CO_2 Emissions = average calculated according to paragraph (a)(1)(iii) of this section;

Total Number of Vehicles Sold = The number of vehicles domestically sold as defined in § 600.511–80 of this chapter; and

Vehicle Lifetime Miles is 195,264 for the LDV/LDT1 averaging set and 225,865 for the LDT2/HLDT/MDPV averaging set.

(vi) Deficits generated against the applicable CO_2 credit threshold values in paragraph (a)(1)(iv) of this section in any averaging set for any of the 2009–2011 model years must be offset using credits accumulated by any averaging set in any of the 2009–2011 model years before determining the number of credits that may be carried forward to the 2012. Deficit carry forward and credit banking provisions of § 86.1865–12 apply to early credits earned under this paragraph (a)(1), except that deficits may not be carried forward from any of the 2009–2011 model years into the 2012 model year, and credits earned in the 2009 model year may not be traded to other manufacturers.

(2) *Pathway 2.* To earn credits under this pathway, manufacturers shall calculate an average carbon-related exhaust emission value to the nearest one gram per mile for the classes of motor vehicles identified in paragraph (a)(1) of this section, and the results of such calculations will be reported to the Administrator for use in determining compliance with the applicable CO_2 early credit threshold values.

(i) Credits under this pathway shall be calculated according to the provisions of paragraph (a)(1) of this section, except credits may only be generated by vehicles sold in a model year in California and in states with a section 177 program in effect in that model year. For the purposes of this section, "section 177 program" means State regulations or other laws that apply to vehicle emissions from any of the following categories of motor vehicles: Passenger cars, light-duty trucks up through 6,000 pounds GVWR, and medium-duty vehicles from 6,001 to 14,000 pounds GVWR, as these categories of motor vehicles are defined in the California Code of Regulations, Title 13, Division 3, Chapter 1, Article 1, Section 1900.

(ii) A deficit in any averaging set for any of the 2009–2011 model years must be offset using credits accumulated by any averaging set in any of the 2009–2011 model years before determining the number of credits that may be carried forward to the 2012 model year. Deficit carry forward and credit banking provisions of § 86.1865–12 apply to early credits earned under this paragraph (a)(1), except that deficits may not be carried forward from any of the 2009–2011 model years into the 2012 model year, and credits earned in the 2009 model year may not be traded to other manufacturers.

(3) *Pathway 3.* Pathway 3 credits are those credits earned under Pathway 2 as described in paragraph (a)(2) of this section in California and in the section 177 states determined in paragraph (a)(2)(i) of this section, combined with additional credits earned in the set of states that does not include California and the section 177 states determined in paragraph (a)(2)(i) of this section and calculated according to this paragraph (a)(3).

(i) Manufacturers shall earn additional credits under Pathway 3 by calculating an average carbon-related exhaust emission value to the nearest one gram per mile for the classes of

motor vehicles identified in this paragraph (a)(3). The results of such calculations will be reported to the Administrator for use in determining compliance with the applicable CO_2 early credit threshold values.

(ii) An average carbon-related exhaust emission value calculation will be made for the passenger automobile averaging set. The term "passenger automobile" shall have the meaning given by the Department of Transportation at 49 CFR 523.4 for the specific model year for which the calculation is being made.

(iii) An average carbon-related exhaust emission value calculation will be made for the light truck averaging set. The term "light truck" shall have the meaning given by the Department of Transportation at 49 CFR 523.5 for the specific model year for which the calculation is being made.

(iv) Average carbon-related exhaust emission values shall be determined according to the provisions of § 600.510–12 of this chapter, except that:

(A) Total model year sales data will be used, instead of production data, except that vehicles sold in the section 177 states determined in paragraph (a)(2)(i) of this section shall not be included.

(B) The average carbon-related exhaust emissions for alcohol fueled model types shall be calculated according to the provisions of § 600.510–12(j)(2)(ii)(B) of this chapter, without the use of the 0.15 multiplicative factor.

(C) The average carbon-related exhaust emissions for natural gas fueled model types shall be calculated according to the provisions of § 600.510–12(j)(2)(iii)(B) of this chapter, without the use of the 0.15 multiplicative factor.

(D) The average carbon-related exhaust emissions for alcohol dual fueled model types shall be calculated according to the provisions of § 600.510–12(j)(2)(vi) of this chapter, without the use of the 0.15 multiplicative factor and with F = 0.

(E) The average carbon-related exhaust emissions for natural gas dual fueled model types shall be calculated according to the provisions of § 600.510–12(j)(2)(vii) of this chapter, without the use of the 0.15 multiplicative factor and with F = 0.

(F) Section 600.510–12(j)(3) of this chapter shall not apply. Electric, fuel cell, and plug-in hybrid electric model type carbon-related exhaust emission values shall be included in the fleet average determined under paragraph (a)(1) of this section only to the extent that such vehicles are not being used to generate early advanced technology vehicle credits under paragraph (c) of this section.

(v) Pathway 3 fleet average CO_2 credit threshold values.

(A) For 2009 and 2010 model year passenger automobiles, the fleet average CO_2 credit threshold value is 323 grams/mile.

(B) For 2009 model year light trucks the fleet average CO_2 credit threshold value is 381 grams/mile, or, if the manufacturer chose to optionally meet an alternative manufacturer-specific light truck fuel economy standard calculated under 49 CFR 533.5 for the 2009 model year, the gram per mile fleet average CO_2 credit threshold shall be the CO_2 value determined by dividing 8887 by that alternative manufacturer-specific fuel economy standard and rounding to the nearest whole gram per mile.

(C) For 2010 model year light trucks the fleet average CO_2 credit threshold value is 376 grams/mile, or, if the manufacturer chose to optionally meet an alternative manufacturer-specific light truck fuel economy standard calculated under 49 CFR 533.5 for the 2010 model year, the gram per mile fleet average CO_2 credit threshold shall be the CO_2 value determined by dividing 8887 by that alternative manufacturer-specific fuel economy standard and rounding to the nearest whole gram per mile.

(D) For 2011 model year passenger automobiles the fleet average CO_2 credit threshold value is the value determined by dividing 8887 by the manufacturer-specific passenger automobile fuel economy standard for the 2011 model year determined under 49 CFR 531.5 and rounding to the nearest whole gram per mile.

(E) For 2011 model year light trucks the fleet average CO_2 credit threshold value is the value determined by dividing 8887 by the manufacturer-specific light truck fuel economy standard for the 2011 model year determined under 49 CFR 533.5 and rounding to the nearest whole gram per mile.

(vi) Credits are earned on the last day of the model year. Manufacturers must calculate, for a given model year, the number of credits or debits it has generated according to the following equation, rounded to the nearest megagram:

CO_2 Credits or Debits (Mg) = [(CO_2 Credit Threshold − Manufacturer's Sales Weighted Fleet Average CO_2 Emissions) × (Total Number of Vehicles Sold) × (Vehicle Lifetime Miles)] ÷ 1,000,000

Where:

CO_2 Credit Threshold = the applicable credit threshold value for the model year and vehicle averaging set as determined by paragraph (a)(3)(vii) of this section;

Manufacturer's Sales Weighted Fleet Average CO_2 Emissions = average calculated according to paragraph (a)(3)(vi) of this section;

Total Number of Vehicles Sold = The number of vehicles domestically sold as defined in § 600.511–80 of this chapter except that vehicles sold in the section 177 states determined in paragraph (a)(2)(i) of this section shall not be included; and

Vehicle Lifetime Miles is 195,264 for the LDV/LDT1 averaging set and 225,865 for the LDT2/HLDT/MDPV averaging set.

(vii) Deficits in any averaging set for any of the 2009–2011 model years must be offset using credits accumulated by any averaging set in any of the 2009–2011 model years before determining the number of credits that may be carried forward to the 2012. Deficit carry forward and credit banking provisions of § 86.1865–12 apply to early credits earned under this paragraph (a)(3), except that deficits may not be carried forward from any of the 2009–2011 model years into the 2012 model year, and credits earned in the 2009 model year may not be traded to other manufacturers.

(4) *Pathway 4.* Pathway 4 credits are those credits earned under Pathway 3 as described in paragraph (a)(3) of this section in the set of states that does not include California and the section 177 states determined in paragraph (a)(2)(i) of this section and calculated according to paragraph (a)(3) of this section. Credits may only be generated by vehicles sold in the set of states that does not include the section 177 states determined in paragraph (a)(2)(i) of this section.

(b) *Early air conditioning leakage and efficiency credits.* (1) Manufacturers may optionally generate air conditioning refrigerant leakage credits according to the provisions of § 86.1866–12(b) and/or air conditioning efficiency credits according to the provisions of § 86.1866–12(c) in model years 2009 through 2011. The early credits are subject to five year carry forward limits based on the model year in which the credits are generated. Credits must be tracked by model type and model year.

(2) Manufacturers that are required to comply with California greenhouse gas requirements in model years 2009–2011 (for California and section 177 states) may not generate early air conditioning credits for vehicles sold in California and the section 177 states as determined in paragraph (a)(2)(i) of this section.

(c) *Early advanced technology vehicle incentive.* Vehicles eligible for this

incentive are electric vehicles, fuel cell vehicles, and plug-in hybrid electric vehicles, as those terms are defined in § 86.1803–01. If a manufacturer chooses to not include electric vehicles, fuel cell vehicles, and plug-in hybrid electric vehicles in their fleet averages calculated under any of the early credit pathways described in paragraph (a) of this section, the manufacturer may generate early advanced technology vehicle credits pursuant to this paragraph (c).

(1) The manufacturer shall record the sales and carbon-related exhaust emission values of eligible vehicles by model type and model year for model years 2009 through 2011 and report these values to the Administrator under paragraph (e) of this section.

(2) Manufacturers may use the 2009 through 2011 eligible vehicles in their fleet average calculations starting with the 2012 model year, subject to a five-year carry-forward limitation.

(i) Eligible 2009 model year vehicles may be used in the calculation of a manufacturer's fleet average carbon-related exhaust emissions in the 2012 through 2014 model years.

(ii) Eligible 2010 model year vehicles may be used in the calculation of a manufacturer's fleet average carbon-related exhaust emissions in the 2012 through 2015 model years.

(iii) Eligible 2011 model year vehicles may be used in the calculation of a manufacturer's fleet average carbon-related exhaust emissions in the 2012 through 2016 model years.

(3)(i) To use the advanced technology vehicle incentive, the manufacturer will apply the 2009, 2010, and/or 2011 model type sales volumes and their model type emission levels to the manufacturer's fleet average calculation.

(ii) The early advanced technology vehicle incentive must be used to offset a deficit in one of the 2012 through 2016 model years, as appropriate under paragraph (c)(2) of this section.

(iii) The advanced technology vehicle sales and emission values may be included in a fleet average calculation for passenger automobiles or light trucks, but may not be used to generate credits in the model year in which they are included or in the averaging set in which they are used. Use of early advanced technology vehicle credits is limited to offsetting a deficit that would otherwise be generated without the use of those credits. Manufacturers shall report the use of such credits in their model year report for the model year in which the credits are used.

(4) Manufacturers may use zero grams/mile to represent the carbon-related exhaust emission values for the electric operation of 2009 through 2011 model year electric vehicles, fuel cell vehicles, and plug-in hybrid electric vehicles subject to the limitations in § 86.1866–12(a). The 2009 through 2011 model year vehicles using zero grams per mile shall count against the 200,000 or 300,000 caps on use of this credit value, whichever is applicable under § 86.1866–12(a).

(d) *Early off-cycle technology credits.* Manufacturers may optionally generate credits for the implementation of certain CO_2-reducing technologies according to the provisions of § 86.1866–12(d) in model years 2009 through 2011. The early credits are subject to five year carry forward limits based on the model year in which the credits are generated. Credits must be tracked by model type and model year.

(e) *Early credit reporting requirements.* Each manufacturer shall submit a report to the Administrator, known as the early credits report, that reports the credits earned in the 2009 through 2011 model years under this section.

(1) The report shall contain all information necessary for the calculation of the manufacturer's early credits in each of the 2009 through 2011 model years.

(2) The early credits report shall be in writing, signed by the authorized representative of the manufacturer and shall be submitted no later than 90 days after the end of the 2011 model year.

(3) Manufacturers using one of the optional early fleet average CO_2 reduction credit pathways described in paragraph (a) of this section shall report the following information separately for the appropriate averaging sets (*e.g.* LDV/LDT1 and LDT2/HLDT/MDPV averaging sets for pathways 1 and 2; LDV, LDT/2011 MDPV, LDV/LDT1 and LDT2/HLDT/MDPV averaging sets for Pathway 3; LDV and LDT/2011 MDPV averaging sets for Pathway 4):

(i) The pathway that they have selected (1, 2, 3, or 4).

(ii) A carbon-related exhaust emission value for each model type of the manufacturer's product line calculated according to paragraph (a) of this section.

(iii) The manufacturer's average carbon-related exhaust emission value calculated according to paragraph (a) of this section for the applicable averaging set and region and all data required to complete this calculation.

(iv) The credits earned for each averaging set, model year, and region, as applicable.

(4) Manufacturers calculating early air conditioning leakage and/or efficiency credits under paragraph (b) of this section shall report the following information for each model year separately for passenger automobiles and light trucks and for each air conditioning system used to generate credits:

(i) A description of the air conditioning system.

(ii) The leakage credit value and all the information required to determine this value.

(iii) The total credits earned for each averaging set, model year, and region, as applicable.

(5) Manufacturers calculating early advanced technology vehicle credits under paragraph (c) of this section shall report, for each model year and separately for passenger automobiles and light trucks, the following information:

(i) The number of each model type of eligible vehicle sold.

(ii) The carbon-related exhaust emission value by model type and model year.

(6) Manufacturers calculating early off-cycle technology credits under paragraph (d) of this section shall report, for each model year and separately for passenger automobiles and light trucks, all test results and data required for calculating such credits.

PART 600—FUEL ECONOMY AND CARBON-RELATED EXHAUST EMISSIONS OF MOTOR VEHICLES

■ 30. The authority citation for part 600 continues to read as follows:

Authority: 49 U.S.C. 32901–23919q, Pub. L. 109–58.

■ 31. The heading for part 600 is revised as set forth above.

Subpart A—Fuel Economy and Carbon-Related Exhaust Emission Regulations for 1977 and Later Model Year Automobiles—General Provisions

■ 32. The heading for subpart A is revised as set forth above.

■ 33. A new § 600.001–12 is added to subpart A to read as follows:

§ 600.001–12 General applicability.

(a) The provisions of this subpart are applicable to 2012 and later model year automobiles and to the manufacturers of 2012 and later model year automobiles.

(b) *Fuel economy and related emissions data.* Unless stated otherwise, references to fuel economy or fuel economy data in this subpart shall also be interpreted to mean the related exhaust emissions of CO_2, HC, and CO, and where applicable for alternative fuel vehicles, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC and CH_4. References to

average fuel economy shall be interpreted to also mean average carbon-related exhaust emissions. References to fuel economy data vehicles shall also be meant to refer to vehicles tested for carbon-related exhaust emissions for the purpose of demonstrating compliance with fleet average CO_2 standards in § 86.1818–12 of this chapter.

■ 34. Section 600.002–08 is amended as follows:

■ a. By adding the definition for "Base tire."

■ b. By adding the definition for "Carbon-related exhaust emissions."

■ c. By adding the definition for "Electric vehicle."

■ d. By adding the definition for "Footprint."

■ e. By adding the definition for "Fuel cell."

■ f. By adding the definition for "Fuel cell vehicle."

■ g. By adding the definition for "Hybrid electric vehicle."

■ h. By revising the definition for "Non-passenger automobile."

■ i. By revising the definition for "Passenger automobile."

■ j. By adding the definition for "Plug-in hybrid electric vehicle."

■ k. By adding the definition for "Track width."

■ l. By adding the definition for "Wheelbase."

§ 600.002–08 Definitions.

* * * * *

Base tire means the tire specified as standard equipment by the manufacturer.

* * * * *

Carbon-related exhaust emissions (CREE) means the summation of the carbon-containing constituents of the exhaust emissions, with each constituent adjusted by a coefficient representing the carbon weight fraction of each constituent relative to the CO_2 carbon weight fraction, as specified in § 600.113–08. For example, carbon-related exhaust emissions (weighted 55 percent city and 45 percent highway) are used to demonstrate compliance with fleet average CO_2 emission standards outlined in § 86.1818(c) of this chapter.

* * * * *

Electric vehicle has the meaning given in § 86.1803–01 of this chapter.

* * * * *

Footprint has the meaning given in § 86.1803–01 of this chapter.

* * * * *

Fuel cell has the meaning given in § 86.1803–01 of this chapter.

Fuel cell vehicle has the meaning given in § 86.1803–01 of this chapter.

* * * * *

Hybrid electric vehicle (HEV) has the meaning given in § 86.1803–01 of this chapter.

* * * * *

Non-passenger automobile has the meaning given by the Department of Transportation at 49 CFR 523.5. This term is synonymous with "light truck."

* * * * *

Passenger automobile has the meaning given by the Department of Transportation at 49 CFR 523.4.

* * * * *

Plug-in hybrid electric vehicle (PHEV) has the meaning given in § 86.1803–01 of this chapter.

* * * * *

Track width has the meaning given in § 86.1803–01 of this chapter.

* * * * *

Wheelbase has the meaning given in § 86.1803–01 of this chapter.

* * * * *

■ 35. Section 600.006–08 is amended as follows:

■ a. By revising the section heading.

■ b. By revising paragraph (b)(2)(ii).

■ c. By revising paragraph (b)(2)(iv).

■ d. By revising paragraph (c) introductory text.

■ e. By adding paragraph (c)(5).

■ f. By revising paragraph (e).

■ g. By revising paragraph (g)(3).

§ 600.006–08 Data and information requirements for fuel economy data vehicles.

* * * * *

(b) * * *

(2) * * *

(ii) In the case of electric vehicles, plug-in hybrid electric vehicles, and hybrid electric vehicles, a description of all maintenance to electric motor, motor controller, battery configuration, or other components performed within 2,000 miles prior to fuel economy testing.

* * * * *

(iv) In the case of electric vehicles, plug-in hybrid electric vehicles, and hybrid electric vehicles, a copy of calibrations for the electric motor, motor controller, battery configuration, or other components on the test vehicle as well as the design tolerances.

* * * * *

(c) The manufacturer shall submit the following fuel economy data:

* * * * *

(5) Starting with the 2012 model year, the data submitted according to paragraphs (c)(1) through (c)(4) of this section shall include total HC, CO, CO_2, and, where applicable for alternative fuel vehicles, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC and CH_4. Manufacturers incorporating N_2O and CH_4 emissions in their fleet average carbon-related exhaust emissions as allowed under § 86.1818(f)(2) of this chapter shall also submit N_2O and CH_4 emission data where applicable. The fuel economy and CO_2 emission test results shall be adjusted in accordance with paragraph (g) of this section.

* * * * *

(e) In lieu of submitting actual data from a test vehicle, a manufacturer may provide fuel economy and carbon-related exhaust emission values derived from a previously tested vehicle, where the fuel economy and carbon-related exhaust emissions are expected to be equivalent (or less fuel-efficient and with higher carbon-related exhaust emissions). Additionally, in lieu of submitting actual data from a test vehicle, a manufacturer may provide fuel economy and carbon-related exhaust emission values derived from an analytical expression, *e.g.,* regression analysis. In order for fuel economy and carbon-related exhaust emission values derived from analytical methods to be accepted, the expression (form and coefficients) must have been approved by the Administrator.

* * * * *

(g) * * *

(3)(i) The manufacturer shall adjust all fuel economy test data generated by vehicles with engine-drive system combinations with more than 6,200 miles by using the following equation:

$$FE_{4,000mi} = FE_T[0.979 + 5.25 \times 10^{-6}(mi)]^{-1}$$

Where:

$FE_{4,000mi}$ = Fuel economy data adjusted to 4,000-mile test point rounded to the nearest 0.1 mpg.

FE_T = Tested fuel economy value rounded to the nearest 0.1 mpg.

mi = System miles accumulated at the start of the test rounded to the nearest whole mile.

(ii)(A) The manufacturer shall adjust all carbon-related exhaust emission (CREE) test data generated by vehicles with engine-drive system combinations with more than 6,200 miles by using the following equation:

$$CREE_{4,000mi} = CREE_T[0.979 + 5.25 \times 10^{-6}(mi)]$$

Where:

$CREE_{4,000mi}$ = CREE emission data adjusted to 4,000-mile test point.

$CREE_T$ = Tested emissions value of CREE in grams per mile.

mi = System miles accumulated at the start of the test rounded to the nearest whole mile.

(B) Emissions test values and results used and determined in the calculations in paragraph (g)(3)(ii) of this section

shall be rounded in accordance with § 86.1837–01 of this chapter as applicable. CREE values shall be rounded to the nearest gram per mile.

* * * * *

■ 36. Section 600.007–08 is amended as follows:

■ a. By revising paragraph (b)(4) through (6).

■ b. By revising paragraph (c).

■ c. By revising paragraph (f) introductory text.

§ 600.007–08 Vehicle acceptability.

* * * * *

(b) * * *

(4) Each fuel economy data vehicle must meet the same exhaust emission standards as certification vehicles of the respective engine-system combination during the test in which the city fuel economy test results are generated. This may be demonstrated using one of the following methods:

(i) The deterioration factors established for the respective engine-system combination per § 86.1841–01 of this chapter as applicable will be used; or

(ii) The fuel economy data vehicle will be equipped with aged emission control components according to the provisions of § 86.1823–08 of this chapter.

(5) The calibration information submitted under § 600.006(b) must be representative of the vehicle configuration for which the fuel economy and carbon-related exhaust emissions data were submitted.

(6) Any vehicle tested for fuel economy or carbon-related exhaust emissions purposes must be representative of a vehicle which the manufacturer intends to produce under the provisions of a certificate of conformity.

* * * * *

(c) If, based on review of the information submitted under § 600.006(b), the Administrator determines that a fuel economy data vehicle meets the requirements of this section, the fuel economy data vehicle will be judged to be acceptable and fuel economy and carbon-related exhaust emissions data from that fuel economy data vehicle will be reviewed pursuant to § 600.008.

* * * * *

(f) All vehicles used to generate fuel economy and carbon-related exhaust emissions data, and for which emission standards apply, must be covered by a certificate of conformity under part 86 of this chapter before:

* * * * *

■ 37. Section 600.008–08 is amended by revising the section heading and paragraph (a)(1) to read as follows:

§ 600.008–08 Review of fuel economy and carbon-related exhaust emission data, testing by the Administrator.

(a) *Testing by the Administrator.* (1)(i) The Administrator may require that any one or more of the test vehicles be submitted to the Agency, at such place or places as the Agency may designate, for the purposes of conducting fuel economy tests. The Administrator may specify that such testing be conducted at the manufacturer's facility, in which case instrumentation and equipment specified by the Administrator shall be made available by the manufacturer for test operations. The tests to be performed may comprise the FTP, highway fuel economy test, US06, SC03, or Cold temperature FTP or any combination of those tests. Any testing conducted at a manufacturer's facility pursuant to this paragraph shall be scheduled by the manufacturer as promptly as possible.

(ii) Starting with the 2012 model year, evaluations, testing, and test data described in this section pertaining to fuel economy shall also be performed for carbon-related exhaust emissions, except that carbon-related exhaust emissions shall be arithmetically averaged instead of harmonically averaged, and in cases where the manufacturer selects the lowest of several fuel economy results to represent the vehicle, the manufacturer shall select the carbon-related exhaust emissions value from the test results associated with the lowest fuel economy results.

* * * * *

■ 38. Section 600.010–08 is amended by revising paragraph (d) to read as follows:

§ 600.010–08 Vehicle test requirements and minimum data requirements.

* * * * *

(d) *Minimum data requirements for the manufacturer's average fuel economy and average carbon-related exhaust emissions.* For the purpose of calculating the manufacturer's average fuel economy and average carbon-related exhaust emissions under § 600.510, the manufacturer shall submit FTP (city) and HFET (highway) test data representing at least 90 percent of the manufacturer's actual model year production, by configuration, for each category identified for calculation under § 600.510–08(a).

■ 39. Section 600.011–93 is amended to read as follows:

§ 600.011–93 Reference materials.

(a) *Incorporation by reference.* The documents referenced in this section have been incorporated by reference in this part. The incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at the U.S. Environmental Protection Agency, Office of Air and Radiation, 1200 Pennsylvania Ave., NW., Washington, DC 20460, phone (202) 272–0167, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html* and is available from the sources listed below:

(b) *ASTM.* The following material is available from the American Society for Testing and Materials. Copies of these materials may be obtained from American Society for Testing and Materials, ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959, phone 610–832–9585. *http://www.astm.org/.*

(1) ASTM E 29–67 (Reapproved 1973) Standard Recommended Practice for Indicating Which Places of Figures Are To Be Considered Significant in Specified Limiting Values, IBR approved for §§ 600.002–93 and 600.002–08.

(2) ASTM D 1298–85 (Reapproved 1990) Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method, IBR approved for §§ 600.113–93, 600.510–93, 600.113–08, 600.510–08, and 600.510–12.

(3) ASTM D 3343–90 Standard Test Method for Estimation of Hydrogen Content of Aviation Fuels, IBR approved for §§ 600.113–93 and 600.113–08.

(4) ASTM D 3338–92 Standard Test Method for Estimation of Net Heat of Combustion of Aviation Fuels, IBR approved for §§ 600.113–93 and 600.113–08.

(5) ASTM D 240–92 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved for §§ 600.113–93, 600.510–93, 600.113–08, and 600.510–08.

(6) ASTM D975–04c Standard Specification for Diesel Fuel Oils, IBR approved for § 600.107–08.

(7) ASTM D 1945–91 Standard Test Method for Analysis of Natural Gas By Gas Chromatography, IBR approved for §§ 600.113–93, 600.113–08.

(c) *SAE Material.* The following material is available from the Society of

Automotive Engineers. Copies of these materials may be obtained from Society of Automotive Engineers World Headquarters, 400 Commonwealth Dr., Warrendale, PA 15096–0001, phone (877) 606–7323 (U.S. and Canada) or (724) 776–4970 (outside the U.S. and Canada), or at *http://www.sae.org.*

(1) Motor Vehicle Dimensions—Recommended Practice SAE 1100a (Report of Human Factors Engineering Committee, Society of Automotive Engineers, approved September 1973 as revised September 1975), IBR approved for §§ 600.315–08 and 600.315–82.

(2) [Reserved]

Subpart B—Fuel Economy and Carbon-Related Exhaust Emission Regulations for 1978 and Later Model Year Automobiles—Test Procedures

■ 40. The heading for subpart B is revised as set forth above.

■ 41. A new § 600.101–12 is added to subpart B to read as follows:

§ 600.101–12 General applicability.

(a) The provisions of this subpart are applicable to 2012 and later model year automobiles and to the manufacturers of 2012 and later model year automobiles.

(b) *Fuel economy and carbon-related emissions data.* Unless stated otherwise, references to fuel economy or fuel economy data in this subpart shall also be interpreted to mean the related exhaust emissions of CO_2, HC, and CO, and where applicable for alternative fuel vehicles, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC and CH_4. References to average fuel economy shall be interpreted to also mean average carbon-related exhaust emissions.

■ 42. Section 600.111–08 is amended by revising paragraph (f) to read as follows:

§ 600.111–08 Test procedures.

* * * * *

(f) *Special Test Procedures.* The Administrator may prescribe test procedures, other than those set forth in this Subpart B, for any vehicle which is not susceptible to satisfactory testing and/or testing results by the procedures set forth in this part. For example, special test procedures may be used for advanced technology vehicles, including, but not limited to battery electric vehicles, fuel cell vehicles, plug-in hybrid electric vehicles and vehicles equipped with hydrogen internal combustion engines. Additionally, the Administrator may conduct fuel economy and carbon-related exhaust emission testing using the special test procedures approved for a specific vehicle.

■ 43. A new § 600.113–12 is added to subpart B to read as follows:

§ 600.113–12 Fuel economy and carbon-related exhaust emission calculations for FTP, HFET, US06, SC03 and cold temperature FTP tests.

The Administrator will use the calculation procedure set forth in this paragraph for all official EPA testing of vehicles fueled with gasoline, diesel, alcohol-based or natural gas fuel. The calculations of the weighted fuel economy and carbon-related exhaust emission values require input of the weighted grams/mile values for total hydrocarbons (HC), carbon monoxide (CO), and carbon dioxide (CO_2); and, additionally for methanol-fueled automobiles, methanol (CH_3OH) and formaldehyde (HCHO); and, additionally for ethanol-fueled automobiles, methanol (CH_3OH), ethanol (C_2H_5OH), acetaldehyde (C_2H_4O), and formaldehyde (HCHO); and additionally for natural gas-fueled vehicles, non-methane hydrocarbons (NMHC) and methane (CH_4). For manufacturers selecting the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter the calculations of the carbon-related exhaust emissions require the input of grams/mile values for nitrous oxide (N_2O) and methane (CH_4). Emissions shall be determined for the FTP, HFET, US06, SC03 and cold temperature FTP tests. Additionally, the specific gravity, carbon weight fraction and net heating value of the test fuel must be determined. The FTP, HFET, US06, SC03 and cold temperature FTP fuel economy and carbon-related exhaust emission values shall be calculated as specified in this section. An example fuel economy calculation appears in Appendix II of this part.

(a) Calculate the FTP fuel economy.

(1) Calculate the weighted grams/mile values for the FTP test for CO_2, HC, and CO, and where applicable, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC, N_2O and CH_4 as specified in § 86.144(b) of this chapter. Measure and record the test fuel's properties as specified in paragraph (f) of this section.

(2) Calculate separately the grams/mile values for the cold transient phase, stabilized phase and hot transient phase of the FTP test. For vehicles with more than one source of propulsion energy, one of which is a rechargeable energy storage system, or vehicles with special features that the Administrator determines may have a rechargeable energy source, whose charge can vary during the test, calculate separately the grams/mile values for the cold transient phase, stabilized phase, hot transient phase and hot stabilized phase of the FTP test.

(b) Calculate the HFET fuel economy.

(1) Calculate the mass values for the highway fuel economy test for HC, CO and CO_2, and where applicable, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC, N_2O and CH_4 as specified in § 86.144(b) of this chapter. Measure and record the test fuel's properties as specified in paragraph (f) of this section.

(2) Calculate the grams/mile values for the highway fuel economy test for HC, CO and CO_2, and where applicable CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC, N_2O and CH_4 by dividing the mass values obtained in paragraph (b)(1) of this section, by the actual distance traveled, measured in miles, as specified in § 86.135(h) of this chapter.

(c) Calculate the cold temperature FTP fuel economy.

(1) Calculate the weighted grams/mile values for the cold temperature FTP test for HC, CO and CO_2, and where applicable, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC, N_2O and CH_4 as specified in § 86.144(b) of this chapter. For 2008 through 2010 diesel-fueled vehicles, HC measurement is optional.

(2) Calculate separately the grams/mile values for the cold transient phase, stabilized phase and hot transient phase of the cold temperature FTP test in § 86.244 of this chapter.

(3) Measure and record the test fuel's properties as specified in paragraph (f) of this section.

(d) Calculate the US06 fuel economy.

(1) Calculate the total grams/mile values for the US06 test for HC, CO and CO_2, and where applicable, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC, N_2O and CH_4 as specified in § 86.144(b) of this chapter.

(2) Calculate separately the grams/mile values for HC, CO and CO_2, and where applicable, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC, N_2O and CH_4, for both the US06 City phase and the US06 Highway phase of the US06 test as specified in § 86.164 of this chapter. In lieu of directly measuring the emissions of the separate city and highway phases of the US06 test according to the provisions of § 86.159 of this chapter, the manufacturer may, with the advance approval of the Administrator and using good engineering judgment, optionally analytically determine the grams/mile values for the city and highway phases of the US06 test. To analytically determine US06 City and US06 Highway phase emission results, the manufacturer shall multiply the US06 total grams/mile values determined in paragraph (d)(1) of this section by the estimated proportion of fuel use for the city and highway phases relative to the total US06 fuel use. The manufacturer may estimate the proportion of fuel use

for the US06 City and US06 Highway phases by using modal CO_2, HC, and CO emissions data, or by using appropriate OBD data (*e.g.,* fuel flow rate in grams of fuel per second), or another method approved by the Administrator.

(3) Measure and record the test fuel's properties as specified in paragraph (f) of this section.

(e) Calculate the SC03 fuel economy.

(1) Calculate the grams/mile values for the SC03 test for HC, CO and CO_2, and where applicable, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC, N_2O and CH_4 as specified in § 86.144(b) of this chapter.

(2) Measure and record the test fuel's properties as specified in paragraph (f) of this section.

(f) *Fuel property determination and analysis.*

(1) Gasoline test fuel properties shall be determined by analysis of a fuel sample taken from the fuel supply. A sample shall be taken after each addition of fresh fuel to the fuel supply. Additionally, the fuel shall be resampled once a month to account for any fuel property changes during storage. Less frequent resampling may be permitted if EPA concludes, on the basis of manufacturer-supplied data, that the properties of test fuel in the manufacturer's storage facility will remain stable for a period longer than one month. The fuel samples shall be analyzed to determine the following fuel properties:

(i) Specific gravity measured using ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93).

(ii) Carbon weight fraction measured using ASTM D 3343–90 "Standard Test Method for Estimation of Hydrogen Content of Aviation Fuels" (incorporated by reference at § 600.011–93).

(iii) Net heating value (Btu/lb) determined using ASTM D 3338–92 "Standard Test Method for Estimation of Net Heat of Combustion of Aviation Fuels" (incorporated by reference at § 600.011–93).

(2) Methanol test fuel shall be analyzed to determine the following fuel properties:

(i) Specific gravity using either:

(A) ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93) for the blend, or:

(B) ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93) for the gasoline fuel component and also for the methanol fuel component and combining as follows:

$$SG = SGg \times \text{volume fraction gasoline} + SGm \times \text{volume fraction methanol}.$$

(ii)(A) Carbon weight fraction using the following equation:

$$CWF = CWFg \times MFg + 0.375 \times MFm$$

Where:

CWFg = Carbon weight fraction of gasoline portion of blend measured using ASTM D 3343–90 "Standard Test Method for Estimation of Hydrogen Content of Aviation Fuels" (incorporated by reference at § 600.011–93).

MFg = Mass fraction gasoline = $(G \times SGg)/(G \times SGg + M \times SGm)$

MFm = Mass fraction methanol = $(M \times SGm)/(G \times SGg + M \times SGm)$

Where:

G = Volume fraction gasoline.

M = Volume fraction methanol.

SGg = Specific gravity of gasoline as measured using ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93).

SGm = Specific gravity of methanol as measured using ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93).

(B) Upon the approval of the Administrator, other procedures to measure the carbon weight fraction of the fuel blend may be used if the manufacturer can show that the procedures are superior to or equally as accurate as those specified in this paragraph (f)(2)(ii).

(3) Natural gas test fuel shall be analyzed to determine the following fuel properties:

(i) Fuel composition measured using ASTM D 1945–91 "Standard Test Method for Analysis of Natural Gas By Gas Chromatography" (incorporated by reference at § 600.011–93).

(ii) Specific gravity measured as based on fuel composition per ASTM D 1945–91 "Standard Test Method for Analysis of Natural Gas by Gas Chromatography" (incorporated by reference at § 600.011–93).

(iii) Carbon weight fraction, based on the carbon contained only in the hydrocarbon constituents of the fuel. This equals the weight of carbon in the hydrocarbon constituents divided by the total weight of fuel.

(iv) Carbon weight fraction of the fuel, which equals the total weight of carbon in the fuel (i.e, includes carbon contained in hydrocarbons and in CO_2) divided by the total weight of fuel.

(4) Ethanol test fuel shall be analyzed to determine the following fuel properties:

(i) Specific gravity using either:

(A) ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93) for the blend. or:

(B) ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93) for the gasoline fuel component and also for the methanol fuel component and combining as follows.

$$SG = SGg \times \text{volume fraction gasoline} + SGm \times \text{volume fraction ethanol}.$$

(ii)(A) Carbon weight fraction using the following equation:

$$CWF = CWFg \times MFg + 0.521 \times MFe$$

Where:

CWFg = Carbon weight fraction of gasoline portion of blend measured using ASTM D 3343–90 "Standard Test Method for Estimation of Hydrogen Content of Aviation Fuels" (incorporated by reference at § 600.011–93).

MFg = Mass fraction gasoline = $(G \times SGg)/(G \times SGg + E \times SGm)$

MFe = Mass fraction ethanol = $(E \times SGm)/(G \times SGg + E \times SGm)$

Where:

G = Volume fraction gasoline.

E = Volume fraction ethanol.

SGg = Specific gravity of gasoline as measured using ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93).

SGm = Specific gravity of ethanol as measured using ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93).

(B) Upon the approval of the Administrator, other procedures to measure the carbon weight fraction of the fuel blend may be used if the manufacturer can show that the procedures are superior to or equally as accurate as those specified in this paragraph (f)(2)(ii).

(g) Calculate separate FTP, highway, US06, SC03 and Cold temperature FTP fuel economy and carbon-related exhaust emissions from the grams/mile values for total HC, CO, CO_2 and, where applicable, CH_3OH, C_2H_5OH, C_2H_4O, HCHO, NMHC, N_2O, and CH_4, and the test fuel's specific gravity, carbon weight fraction, net heating value, and additionally for natural gas, the test fuel's composition.

(1) *Emission values for fuel economy calculations.* The emission values (obtained per paragraph (a) through (e) of this section, as applicable) used in the calculations of fuel economy in this section shall be rounded in accordance with §§ 86.094–26(a)(6)(iii) or 86.1837–01 of this chapter as applicable. The CO_2 values (obtained per this section, as applicable) used in each calculation of fuel economy in this section shall be rounded to the nearest gram/mile.

(2) Emission values for carbon-related exhaust emission calculations.

(i) If the emission values (obtained per paragraph (a) through (e) of this section, as applicable) were obtained from testing with aged exhaust emission control components as allowed under § 86.1823–08 of this chapter, then these test values shall be used in the calculations of carbon-related exhaust emissions in this section.

(ii) If the emission values (obtained per paragraph (a) through (e) of this section, as applicable) were not obtained from testing with aged exhaust emission control components as allowed under § 86.1823–08 of this chapter, then these test values shall be adjusted by the appropriate deterioration factor determined according to § 86.1823–08 of this chapter before being used in the calculations of carbon-related exhaust emissions in this section. For vehicles within a test group, the appropriate NMOG deterioration factor may be used in lieu of the deterioration factors for CH_3OH, C_2H_5OH, and/or C_2H_4O emissions.

(iii) The emission values determined in paragraph (g)(2)(A) or (B) of this section shall be rounded in accordance with § 86.094–26(a)(6)(iii) or § 86.1837–01 of this chapter as applicable. The CO_2 values (obtained per this section, as applicable) used in each calculation of carbon-related exhaust emissions in this section shall be rounded to the nearest gram/mile.

(iv) For manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter, N_2O and CH_4 emission values for use in the calculation of carbon-related exhaust emissions in this section shall be the values determined according to paragraph (g)(2)(iv)(A), (B), or (C) of this section.

(A) The FTP and HFET test values as determined for the emission data vehicle according to the provisions of § 86.1835–01 of this chapter. These values shall apply to all vehicles tested under this section that are included in the test group represented by the emission data vehicle and shall be adjusted by the appropriate deterioration factor determined according to § 86.1823–08 of this chapter before being used in the calculations of carbon-related exhaust emissions in this section.

(B) The FTP and HFET test values as determined according to testing conducted under the provisions of this subpart. These values shall be adjusted by the appropriate deterioration factor determined according to § 86.1823–08 of this chapter before being used in the calculations of carbon-related exhaust emissions in this section.

(C) For the 2012 through 2014 model years only, manufacturers may use an assigned value of 0.010 g/mi for N_2O FTP and HFET test values. This value is not required to be adjusted by a deterioration factor.

(3) The specific gravity and the carbon weight fraction (obtained per paragraph (f) of this section) shall be recorded using three places to the right of the decimal point. The net heating value (obtained per paragraph (f) of this section) shall be recorded to the nearest whole Btu/lb.

(4) For the purpose of determining the applicable in-use emission standard under § 86.1818–12(d) of this chapter, the combined city/highway carbon-related exhaust emission value for a vehicle subconfiguration is calculated by arithmetically averaging the FTP-based city and HFET-based highway carbon-related exhaust emission values, as determined in § 600.113(a) and (b) of this section for the subconfiguration, weighted 0.55 and 0.45 respectively, and rounded to the nearest tenth of a gram per mile.

(h)(1) For gasoline-fueled automobiles tested on test fuel specified in § 86.113–04(a) of this chapter, the fuel economy in miles per gallon is to be calculated using the following equation and rounded to the nearest 0.1 miles per gallon:

$$mpg = (5174 \times 10^4 \times CWF \times SG)/[((CWF \times HC) + (0.429 \times CO) + (0.273 \times CO_2)) \times ((0.6 \times SG \times NHV) + 5471)]$$

Where:

HC = Grams/mile HC as obtained in paragraph (g) of this section.
CO = Grams/mile CO as obtained in paragraph (g) of this section.
CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.
CWF = Carbon weight fraction of test fuel as obtained in paragraph (g) of this section.
NHV = Net heating value by mass of test fuel as obtained in paragraph (g) of this section.
SG = Specific gravity of test fuel as obtained in paragraph (g) of this section.

(2)(i) For 2012 and later model year gasoline-fueled automobiles tested on test fuel specified in § 86.113–04(a) of this chapter, the carbon-related exhaust emissions in grams per mile is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = (CWF/0.273 \times HC) + (1.571 \times CO) + CO_2$$

Where:

CREE means the carbon-related exhaust emissions as defined in § 600.002–08.
HC = Grams/mile HC as obtained in paragraph (g) of this section.
CO = Grams/mile CO as obtained in paragraph (g) of this section.
CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.
CWF = Carbon weight fraction of test fuel as obtained in paragraph (g) of this section.

(ii) For manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter, the carbon-related exhaust emissions in grams per mile for 2012 and later model year gasoline-fueled automobiles tested on test fuel specified in § 86.113–04(a) of this chapter is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = [(CWF/0.273) \times NMHC] + (1.571 \times CO) + CO_2 + (298 \times N_2O) + (25 \times CH_4)$$

Where:

CREE means the carbon-related exhaust emissions as defined in § 600.002–08.
NMHC = Grams/mile NMHC as obtained in paragraph (g) of this section.
CO = Grams/mile CO as obtained in paragraph (g) of this section.
CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.
N_2O = Grams/mile N_2O as obtained in paragraph (g) of this section.
CH_4 = Grams/mile CH_4 as obtained in paragraph (g) of this section.
CWF = Carbon weight fraction of test fuel as obtained in paragraph (g) of this section.

(i)(1) For diesel-fueled automobiles, calculate the fuel economy in miles per gallon of diesel fuel by dividing 2778 by the sum of three terms and rounding the quotient to the nearest 0.1 mile per gallon:

(i)(A) 0.866 multiplied by HC (in grams/miles as obtained in paragraph (g) of this section), or

(B) Zero, in the case of cold FTP diesel tests for which HC was not collected, as permitted in § 600.113–08(c);

(ii) 0.429 multiplied by CO (in grams/mile as obtained in paragraph (g) of this section); and

(iii) 0.273 multiplied by CO_2 (in grams/mile as obtained in paragraph (g) of this section).

(2)(i) For 2012 and later model year diesel-fueled automobiles, the carbon-related exhaust emissions in grams per mile is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = (3.172 \times HC) + (1.571 \times CO) + CO_2$$

Where:

CREE means the carbon-related exhaust emissions as defined in § 600.002–08.

HC = Grams/mile HC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.

(ii) For manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter, the carbon-related exhaust emissions in grams per mile for 2012 and later model year diesel-fueled automobiles is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = (3.172 \times NMHC) + (1.571 \times CO) + CO_2 + (298 \times N_2O) + (25 \times CH_4)$$

Where:

CREE means the carbon-related exhaust emissions as defined in § 600.002–08.

NMHC = Grams/mile NMHC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.

N_2O = Grams/mile N_2O as obtained in paragraph (g) of this section.

CH_4 = Grams/mile CH_4 as obtained in paragraph (g) of this section.

(j)(1) For methanol-fueled automobiles and automobiles designed to operate on mixtures of gasoline and methanol, the fuel economy in miles per gallon is to be calculated using the following equation:

$$mpg = (CWF \times SG \times 3781.8)/((CWF_{exHC} \times HC) + (0.429 \times CO) + (0.273 \times CO_2) + (0.375 \times CH_3OH) + (0.400 \times HCHO))$$

Where:

CWF = Carbon weight fraction of the fuel as determined in paragraph (f)(2)(ii) of this section.

SG = Specific gravity of the fuel as determined in paragraph (f)(2)(i) of this section.

CWF_{exHC} = Carbon weight fraction of exhaust hydrocarbons = CWF_g as determined in paragraph (f)(2)(ii) of this section (for M100 fuel, CWF_{exHC} = 0.866).

HC = Grams/mile HC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO2 as obtained in paragraph (g) of this section.

CH_3OH = Grams/mile CH_3OH (methanol) as obtained in paragraph (d) of this section.

HCHO = Grams/mile HCHO (formaldehyde) as obtained in paragraph (g) of this section.

(2)(i) For 2012 and later model year methanol-fueled automobiles and automobiles designed to operate on mixtures of gasoline and methanol, the carbon-related exhaust emissions in grams per mile is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = (CWF_{exHC}/0.273 \times HC) + (1.571 \times CO) + (1.374 \times CH_3OH) + (1.466 \times HCHO) + CO_2$$

Where:

CREE means the carbon-related exhaust emission value as defined in § 600.002–08.

CWF_{exHC} = Carbon weight fraction of exhaust hydrocarbons = CWF_g as determined in (f)(2)(ii) of this section (for M100 fuel, CWF_{exHC} = 0.866).

HC = Grams/mile HC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.

CH_3OH = Grams/mile CH_3OH (methanol) as obtained in paragraph (d) of this section.

HCHO = Grams/mile HCHO (formaldehyde) as obtained in paragraph (g) of this section.

(ii) For manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter, the carbon-related exhaust emissions in grams per mile for 2012 and later model year methanol-fueled automobiles and automobiles designed to operate on mixtures of gasoline and methanol is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = [(CWF_{exHC}/0.273) \times NMHC] + (1.571 \times CO) + (1.374 \times CH_3OH) + (1.466 \times HCHO) + CO_2 + (298 \times N_2O) + (25 \times CH_4)$$

Where:

CREE means the carbon-related exhaust emission value as defined in § 600.002–08.

CWF_{exHC} = Carbon weight fraction of exhaust hydrocarbons = CWF_g as determined in (f)(2)(ii) of this section (for M100 fuel, CWF_{exHC} = 0.866).

NMHC = Grams/mile HC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO2 as obtained in paragraph (g) of this section.

CH_3OH = Grams/mile CH_3OH (methanol) as obtained in paragraph (d) of this section.

HCHO = Grams/mile HCHO (formaldehyde) as obtained in paragraph (g) of this section.

N_2O = Grams/mile N_2O as obtained in paragraph (g) of this section.

CH_4 = Grams/mile CH_4 as obtained in paragraph (g) of this section.

(k)(1) For automobiles fueled with natural gas, the fuel economy in miles per gallon of natural gas is to be calculated using the following equation:

$$mpg_e = \frac{CWF_{HC/NG} \times D_{NG} \times 121.5}{(0.749 \times CH_4) + (CWF_{NMHC} \times NMHC) + (0.429 \times CO) + (0.273 \times (CO_2 - CO_{2NG}))}$$

Where:

mpg_e = miles per equivalent gallon of natural gas.

$CWF_{HC/NG}$ = carbon weight fraction based on the hydrocarbon constituents in the natural gas fuel as obtained in paragraph (g) of this section.

D_{NG} = density of the natural gas fuel [grams/ft³ at 68 °F (20 °C) and 760 mm Hg (101.3 kPa)] pressure as obtained in paragraph (g) of this section.

CH_4, NMHC, CO, and CO_2 = weighted mass exhaust emissions [grams/mile] for methane, non-methane HC, carbon monoxide, and carbon dioxide as calculated in § 600.113.

CWF_{NMHC} = carbon weight fraction of the non-methane HC constituents in the fuel as determined from the speciated fuel composition per paragraph (f)(3) of this section.

CO_{2NG} = grams of carbon dioxide in the natural gas fuel consumed per mile of travel.

$$CO_{2NG} = FC_{NG} \times D_{NG} \times WF_{CO2}$$

Where:

$$FC_{NG} = \frac{(0.749 \times CH_4) + (CWF_{NMHC} \times NMHC) + (0.429 \times CO) + (0.273 \times CO_2)}{CWF_{NG} \times D_{NG}}$$

= cubic feet of natural gas fuel consumed per mile

Where:

CWF_{NG} = the carbon weight fraction of the natural gas fuel as calculated in paragraph (f) of this section.

WF_{CO2} = weight fraction carbon dioxide of the natural gas fuel calculated using the mole fractions and molecular weights of the natural gas fuel constituents per ASTM D 1945–91 "Standard Test Method for Analysis of Natural Gas by Gas Chromatography" (incorporated by reference at § 600.011–93).

(2)(i) For automobiles fueled with natural gas, the carbon-related exhaust emissions in grams per mile is to be calculated for 2012 and later model year vehicles using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = 2.743 \times CH_4 + CWF_{NMHC}/0.273 \times NMHC + 1.571 \times CO + CO_2$$

Where:

CREE means the carbon-related exhaust emission value as defined in § 600.002–08.

CH_4 = Grams/mile CH_4 as obtained in paragraph (g) of this section.

NMHC = Grams/mile NMHC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.

CWF_{NMHC} = carbon weight fraction of the non-methane HC constituents in the fuel as determined from the speciated fuel composition per paragraph (f)(3) of this section.

(ii) For manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter, the carbon-related exhaust emissions in grams per mile for 2012 and later model year automobiles fueled with natural gas is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = (25 \times CH_4) + [(CWF_{NMHC}/0.273) \times NMHC] + (1.571 \times CO) + CO_2 + (298 \times N_2O)$$

Where:

CREE means the carbon-related exhaust emission value as defined in § 600.002–08.

CH_4 = Grams/mile CH_4 as obtained in paragraph (g) of this section.

NMHC = Grams/mile NMHC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.

CWF_{NMHC} = carbon weight fraction of the non-methane HC constituents in the fuel as determined from the speciated fuel composition per paragraph (f)(3) of this section.

N_2O = Grams/mile N_2O as obtained in paragraph (g) of this section.

(l)(1) For ethanol-fueled automobiles and automobiles designed to operate on mixtures of gasoline and ethanol, the fuel economy in miles per gallon is to be calculated using the following equation:

$$mpg = (CWF \times SG \times 3781.8)/((CWF_{exHC} \times HC) + (0.429 \times CO) + (0.273 \times CO_2) + (0.375 \times CH_3OH) + (0.400 \times HCHO) + (0.521 \times C_2H_5OH) + (0.545 \times C_2H_4O))$$

Where:

CWF = Carbon weight fraction of the fuel as determined in paragraph (f)(4) of this section.

SG = Specific gravity of the fuel as determined in paragraph (f)(4) of this section.

CWF_{exHC}= Carbon weight fraction of exhaust hydrocarbons = CWF_g as determined in (f)(4) of this section.

HC = Grams/mile HC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO_2 as obtained in paragraph (g) of this section.

CH_3OH = Grams/mile CH_3OH (methanol) as obtained in paragraph (d) of this section.

HCHO = Grams/mile HCHO (formaldehyde) as obtained in paragraph (g) of this section.

C_2H_5OH = Grams/mile C_2H_5OH (ethanol) as obtained in paragraph (d) of this section.

C_2H_4O = Grams/mile C_2H_4O (acetaldehyde) as obtained in paragraph (d) of this section.

(2)(i) For 2012 and later model year ethanol-fueled automobiles and automobiles designed to operate on mixtures of gasoline and ethanol, the carbon-related exhaust emissions in grams per mile is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = (CWF_{exHC}/0.273 \times HC) + (1.571 \times CO) + (1.374 \times CH_3OH) + (1.466 \times HCHO) + (1.911 \times C_2H_5OH) + (1.998 \times C_2H_4O) + CO_2$$

Where:

CREE means the carbon-related exhaust emission value as defined in § 600.002–08.

CWF_{exHC} = Carbon weight fraction of exhaust hydrocarbons = CWF_g as determined in (f)(4) of this section.

HC = Grams/mile HC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO2 as obtained in paragraph (g) of this section.

CH_3OH = Grams/mile CH_3OH (methanol) as obtained in paragraph (d) of this section.

HCHO = Grams/mile HCHO (formaldehyde) as obtained in paragraph (g) of this section.

C_2H_5OH = Grams/mile C_2H_5OH (ethanol) as obtained in paragraph (d) of this section.

C_2H_4O = Grams/mile C_2H_4O (acetaldehyde) as obtained in paragraph (d) of this section.

(ii) For manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter, the carbon-related exhaust emissions in grams per mile for 2012 and later model year ethanol-fueled automobiles and automobiles designed to operate on mixtures of gasoline and ethanol is to be calculated using the following equation and rounded to the nearest 1 gram per mile:

$$CREE = [(CWF_{exHC}/0.273) \times NMHC] + (1.571 \times CO) + (1.374 \times CH_3OH) + (1.466 \times HCHO) + (1.911 \times C_2H_5OH) + (1.998 \times C_2H_4O) + CO_2 + (298 \times N_2O) + (25 \times CH_4)$$

Where:

CREE means the carbon-related exhaust emission value as defined in § 600.002–08.

CWF_{exHC} = Carbon weight fraction of exhaust hydrocarbons = CWF_g as determined in paragraph (f)(4) of this section.

NMHC = Grams/mile HC as obtained in paragraph (g) of this section.

CO = Grams/mile CO as obtained in paragraph (g) of this section.

CO_2 = Grams/mile CO2 as obtained in paragraph (g) of this section.

CH_3OH = Grams/mile CH_3OH (methanol) as obtained in paragraph (d) of this section.

HCHO = Grams/mile HCHO (formaldehyde) as obtained in paragraph (g) of this section.

C_2H_5OH = Grams/mile C_2H_5OH (ethanol) as obtained in paragraph (d) of this section.

C_2H_4O = Grams/mile C_2H_4O (acetaldehyde) as obtained in paragraph (d) of this section.

N_2O = Grams/mile N_2O as obtained in paragraph (g) of this section.

CH_4 = Grams/mile CH_4 as obtained in paragraph (g) of this section.

(m) *Carbon-related exhaust emissions for electric vehicles, fuel cell vehicles and plug-in hybrid electric vehicles.* Manufacturers shall determine carbon-related exhaust emissions for electric vehicles, fuel cell vehicles, and plug-in hybrid electric vehicles according to the provisions of this paragraph (m). Subject to the limitations described in § 86.1866–12(a) of this chapter, the manufacturer may be allowed to use a value of 0 grams/mile to represent the emissions of fuel cell vehicles and the proportion of electric operation of electric vehicles and plug-in hybrid electric vehicles that is derived from electricity that is generated from sources that are not onboard the vehicle, as described in paragraphs (m)(1) through (3) of this section.

(1) For 2012 and later model year electric vehicles, but not including fuel cell vehicles, the carbon-related exhaust emissions in grams per mile is to be calculated using the following equation and rounded to the nearest one gram per mile:

$$CREE = CREE_{UP} - CREE_{GAS}$$

Where:

CREE means the carbon-related exhaust emission value as defined in § 600.002–08, which may be set equal to zero for eligible 2012 through 2016 model year electric vehicles as described in § 86.1866–12(a) of this chapter.

$$CREE_{UP} = 0.7670 \times EC, \text{ and}$$
$$CREE_{GAS} = 0.2485 \times TargetCO_2,$$

Where:

EC = The vehicle energy consumption in watt-hours per mile, determined according to procedures established by the Administrator under § 600.111–08(f).

$TargetCO_2$ = The CO_2 Target Value determined according to § 86.1818–12(c)(2) of this chapter for passenger automobiles and according to § 86.1818–12(c)(3) of this chapter for light trucks.

(2) For 2012 and later model year plug-in hybrid electric vehicles, the carbon-related exhaust emissions in grams per mile is to be calculated using the following equation and rounded to the nearest one gram per mile:

$$CREE = CREE_{CD} + CREE_{CS},$$

Where:

CREE means the carbon-related exhaust emission value as defined in § 600.002–08.

$CREE_{CS}$ = The carbon-related exhaust emissions determined for charge-sustaining operation according to procedures established by the Administrator under § 600.111–08(f); and

$$CREE_{CD} = (ECF \times CREE_{CDEC}) + [(1 - ECF) \times CREE_{CDGAS}]$$

Where:

$CREE_{CD}$ = The carbon-related exhaust emissions determined for charge-depleting operation determined according to the provisions of this section for the applicable fuel and according to procedures established by the Administrator under § 600.111–08(f);

$CREE_{CDEC}$ = The carbon-related exhaust emissions determined for electricity consumption during charge-depleting operation, which shall be determined using the method specified in paragraph (m)(1) of this section and according to procedures established by the Administrator under § 600.111–08(f), and which may be set equal to zero for eligible 2012 through 2016 model year vehicles as described in § 86.1866–12(a) of this chapter;

$CREE_{CDGAS}$ = The carbon-related exhaust emissions determined for charge-depleting operation determined according to the provisions of this section for the applicable fuel and according to procedures established by the Administrator under § 600.111–08(f); and

ECF = Electricity consumption factor as determined by the Administrator under § 600.111–08(f).

(3) For 2012 and later model year fuel cell vehicles, the carbon-related exhaust emissions in grams per mile shall be calculated using the method specified in paragraph (m)(1) of this section, except that $CREE_{UP}$ shall be determined according to procedures established by the Administrator under § 600.111–08(f). As described in § 86.1866–12(a) of this chapter the value of CREE may be set equal to zero for eligible 2012 through 2016 model year fuel cell vehicles.

(n) Equations for fuels other than those specified in paragraphs (h) through (l) of this section may be used with advance EPA approval. Alternate calculation methods for fuel economy and carbon-related exhaust emissions may be used in lieu of the methods described in this section if shown to yield equivalent or superior results and if approved in advance by the Administrator.

■ 44. Section 600.114–08 is amended as follows:

■ a. By revising the section heading.

■ b. By revising the introductory text.

■ c. By adding paragraphs (d) through (f).

§ 600.114–08 Vehicle-specific 5-cycle fuel economy and carbon-related exhaust emission calculations.

Paragraphs (a) through (c) of this section apply to data used for fuel economy labeling under Subpart D of this part. Paragraphs (d) through (f) of this section are used to calculate 5-cycle carbon-related exhaust emissions values for the purpose of determining optional technology-based CO_2 emissions credits under the provisions of paragraph (d) of § 86.1866–12 of this chapter.

* * * * *

(d) *City carbon-related exhaust emission value.* For each vehicle tested, determine the 5-cycle city carbon-related exhaust emissions using the following equation:

(1) CityCREE = 0.905 × (StartCREE + RunningCREE)

Where:

(i) StartCREE =

$$0.33 \times \left(\frac{(0.76 \times StartCREE_{75} + 0.24 \times StartCREE_{20})}{4.1} \right)$$

Where:

$StartCREE_X = 3.6 \times (Bag1CREE_X - Bag3CREE_X)$

Where:

Bag Y $CREE_X$ = the carbon-related exhaust emissions in grams per mile during the specified bag of the FTP test conducted at an ambient temperature of 75 °F or 20 °F.

(ii) Running CREE =

$$0.82 \times [(0.48 \times Bag2_{75}CREE) + (0.41 \times BAG3_{75}CREE) + (0.11 \times US06\ CityCREE)] +$$
$$0.18 \times [(0.5 \times Bag2_{20}CREE) + (0.5 \times Bag3_{20}CREE)] +$$
$$0.144 \times [SC03\ CREE - ((0.61 \times Bag3_{75}CREE) + (0.39 \times Bag2_{75}CREE))]$$

Where:

$BagY_XCREE$ = carbon-related exhaust emissions in grams per mile over Bag Y at temperature X.

US06 City CREE = carbon-related exhaust emissions in grams per mile over the "city" portion of the US06 test.

SC03 CREE = carbon-related exhaust emissions in grams per mile over the SC03 test.

(e) *Highway carbon-related exhaust emissions.* For each vehicle tested, determine the 5-cycle highway carbon-related exhaust emissions using the following equation:

HighwayCREE = 0.905 × (StartCREE + RunningCREE)

Where:

(1) StartCREE =

$$0.33\times\left(\frac{(0.76\times StartCREE_{75}+0.24\times StartCREE_{20})}{60}\right)$$

Where:

$StartCREE_X = 3.6 \times (BagCREE_X - Bag3CREE_X)$

(2) Running CREE =

$1.007 \times [(0.79 \times US06\ Highway\ CREE) + (0.21 \times HFET\ CREE)] + 0.045 \times [SC03\ CREE - ((0.61 \times Bag3_{75}CREE) + (0.39 \times Bag2_{75}CREE))]$

Where:

$BagY_XCREE$ = carbon-related exhaust emissions in grams per mile over Bag Y at temperature X,

US06 Highway CREE = carbon-related exhaust emissions in grams per mile over the highway portion of the US06 test,

HFET CREE = carbon-related exhaust emissions in grams per mile over the HFET test,

SC03 CREE = carbon-related exhaust emissions in grams per mile over the SC03 test.

(f) *Carbon-related exhaust emissions calculations for hybrid electric vehicles.* Hybrid electric vehicles shall be tested according to California test methods which require FTP emission sampling for the 75 °F FTP test over four phases (bags) of the UDDS (cold-start, transient, warm-start, transient). Optionally, these four phases may be combined into two phases (phases 1 + 2 and phases 3 + 4). Calculations for these sampling methods follow.

(1) *Four-bag FTP equations.* If the 4-bag sampling method is used, manufacturers may use the equations in paragraphs (a) and (b) of this section to determine city and highway carbon-related exhaust emissions values. If this method is chosen, it must be used to determine both city and highway carbon-related exhaust emissions. Optionally, the following calculations may be used, provided that they are used to determine both city and highway carbon-related exhaust emissions values:

(i) *City carbon-related exhaust emissions.*

CityCREE = 0.905 × (StartCREE + RunningCREE)

Where:

(A) StartCREE =

$$0.33\times\left(\frac{(0.76\times StartCREE_{75}+0.24\times StartCREE_{20})}{4.1}\right)$$

Where:

(*1*) $StartCREE_{75} = 3.6 \times (Bag1CREE_{75} - Bag3CREE_{75}) + 3.9 \times (Bag2CREE_{75} - Bag4CREE_{75})$

and

(*2*) $StartCREE_{20} = 3.6 \times (Bag1CREE_{20} - Bag3CREE_{20})$

(B) RunningCREE =

$0.82 \times [(0.48 \times Bag4_{75}CREE) + (0.41 \times Bag3_{75}CREE) + (0.11 \times US06\ City\ CREE)] + 0.18 \times [(0.5 \times Bag2_{20}CREE) + (0.5 \times Bag3_{20}CREE)] + 0.144 \times [SC03\ CREE - ((0.61 \times Bag3_{75}CREE) + (0.39 \times Bag4_{75}CREE))]$

Where:

US06 Highway CREE = carbon-related exhaust emissions in grams per mile over the city portion of the US06 test.

US06 Highway CREE = carbon-related exhaust emissions in miles per gallon over the Highway portion of the US06 test.

HFET CREE = carbon-related exhaust emissions in grams per mile over the HFET test.

SC03 CREE = carbon-related exhaust emissions in grams per mile over the SC03 test.

(ii) *Highway carbon-related exhaust emissions.*

HighwayCREE = 0.905 × (StartCREE + RunningCREE)

Where:

(A) StartCREE =

$$0.33\times\left(\frac{(0.76\times StartCREE_{75}+0.24\times StartCREE_{20})}{60}\right)$$

Where:

$StartCREE_{75} = 3.6 \times (Bag1CREE_{75} - Bag3CREE^{75}) + 3.9 \times (Bag2CREE_{75} - Bag4CREE_{75})$

and

$StartCREE_{20} = 3.6 \times (Bag1CREE_{20} - Bag3CREE_{20})$

(B) RunningCREE =

$1.007 \times [(0.79 \times US06\ Highway\ CREE) + (0.21 \times HFET\ CREE)] + 0.045 \times [SC03\ CREE - ((0.61 \times Bag3_{75}CREE) + (0.39 \times Bag4_{75}CREE))]$

Where:

US06 Highway CREE = carbon-related exhaust emissions in grams per mile over the Highway portion of the US06 test,

HFET CREE = carbon-related exhaust emissions in grams per mile over the HFET test,

SC03 CREE = carbon-related exhaust emissions in grams per mile over the SC03 test.

(2) *Two-bag FTP equations.* If the 2-bag sampling method is used for the 75 °F FTP test, it must be used to determine both city and highway carbon-related exhaust emissions. The following calculations must be used to determine both city and highway carbon-related exhaust emissions:

(i) *City carbon-related exhaust emissions.*

CityCREE = 0.905 × (StartCREE + RunningCREE)

Where:

(A) StartCREE =

$$0.33\times\left(\frac{(0.76\times StartCREE_{75}+0.24\times StartCREE_{20})}{4.1}\right)$$

Where:

Start $CREE_{75}$ = 3.6 × (Bag ½ $CREE_{75}$ − Bag ¾ $CREE_{75}$)

and

Start $CREE_{20}$ = 3.6 × (Bag1$CREE_{20}$ − Bag3$CREE_{20}$)

Where:

Bag Y FE_{20} = the carbon-related exhaust emissions in grams per mile of fuel during Bag 1 or Bag 3 of the 20 °F FTP test, and

Bag X/Y FE_{75} = carbon-related exhaust emissions in grams per mile of fuel during combined phases 1 and 2 or phases 3 and 4 of the FTP test conducted at an ambient temperature of 75 °F.

(B) RunningCREE = 0.82 × [(0.90 × Bag¾$_{75}$CREE) + (0.10 × US06 City CREE)] + 0.18 × [(0.5 × Bag2$_{20}$CREE) + (0.5 × Bag3$_{20}$CREE)] + 0.144 × [SC03 CREE − (Bag¾$_{75}$CREE)]

Where:

US06 City CREE = carbon-related exhaust emissions in grams per mile over the city portion of the US06 test, and

SC03 CREE = carbon-related exhaust emissions in grams per mile over the SC03 test, and

Bag X/Y FE_{75} = carbon-related exhaust emissions in grams per mile of fuel during combined phases 1 and 2 or phases 3 and 4 of the FTP test conducted at an ambient temperature of 75 °F.

(ii) *Highway carbon-related exhaust emissions.*

HighwayCREE = 0.905 × (StartCREE + RunningCREE)

Where:

(A) StartCREE =

$$0.33\times\left(\frac{(0.76\times StartCREE_{75}+0.24\times StartCREE_{20})}{60}\right)$$

Where:

Start $CREE_{75}$ = 7.5 × (Bag½$CREE_{75}$ − Bag¾$CREE_{75}$)

and

Start $CREE_{20}$ = 3.6 × (Bag1$CREE_{20}$ − Bag3$CREE_{20}$)

(B) RunningCREE = 1.007 × [(0.79 × US06 Highway CREE) + (0.21 × HFET CREE)] + 0.045 × [SC03 CREE − Bag¾$_{75}$CREE]

Where:

US06 Highway CREE = carbon-related exhaust emissions in grams per mile over the city portion of the US06 test, and

SC03 CREE = carbon-related exhaust emissions in gram per mile over the SC03 test, and

Bag Y FE_{20} = the carbon-related exhaust emissions in grams per mile of fuel during Bag 1 or Bag 3 of the 20 °F FTP test, and

Bag X/Y FE_{75} = carbon-related exhaust emissions in grams per mile of fuel during phases 1 and 2 or phases 3 and 4 of the FTP test conducted at an ambient temperature of 75 °F.

Subpart C—Procedures for Calculating Fuel Economy and Carbon-Related Exhaust Emission Values for 1977 and Later Model Year Automobiles

■ 45. The heading for subpart C is revised as set forth above.

■ 46. A new § 600.201–12 is added to subpart C to read as follows:

§ 600.201–12 General applicability.

The provisions of this subpart are applicable to 2012 and later model year automobiles and to the manufacturers of 2012 and later model year automobiles.

■ 47. A new § 600.206–12 is added to subpart C to read as follows:

§ 600.206–12 Calculation and use of FTP-based and HFET-based fuel economy and carbon-related exhaust emission values for vehicle configurations.

(a) Fuel economy and carbon-related exhaust emissions values determined for each vehicle under § 600.113(a) and (b) and as approved in § 600.008–08(c), are used to determine FTP-based city, HFET-based highway, and combined FTP/Highway-based fuel economy and carbon-related exhaust emission values for each vehicle configuration for which data are available.

(1) If only one set of FTP-based city and HFET-based highway fuel economy values is accepted for a vehicle configuration, these values, rounded to the nearest tenth of a mile per gallon, comprise the city and highway fuel economy values for that configuration. If only one set of FTP-based city and HFET-based highway carbon-related exhaust emission values is accepted for a vehicle configuration, these values, rounded to the nearest gram per mile, comprise the city and highway carbon-related exhaust emission values for that configuration.

(2) If more than one set of FTP-based city and HFET-based highway fuel economy and/or carbon-related exhaust emission values are accepted for a vehicle configuration:

(i) All data shall be grouped according to the subconfiguration for which the data were generated using sales projections supplied in accordance with § 600.208–12(a)(3).

(ii) Within each group of data, all fuel economy values are harmonically averaged and rounded to the nearest 0.0001 of a mile per gallon and all carbon-related exhaust emission values are arithmetically averaged and rounded to the nearest tenth of a gram per mile in order to determine FTP-based city and HFET-based highway fuel economy and carbon-related exhaust emission values for each subconfiguration at which the vehicle configuration was tested.

(iii) All FTP-based city fuel economy and carbon-related exhaust emission values and all HFET-based highway fuel economy and carbon-related exhaust emission values calculated in paragraph (a)(2)(ii) of this section are (separately for city and highway) averaged in proportion to the sales fraction (rounded to the nearest 0.0001) within the vehicle configuration (as provided to the Administrator by the manufacturer) of vehicles of each tested subconfiguration. Fuel economy values shall be harmonically averaged and carbon-related exhaust emission values shall be arithmetically averaged. The resultant fuel economy values, rounded to the nearest 0.0001 mile per gallon, are the FTP-based city and HFET-based highway fuel economy values for the vehicle configuration. The resultant carbon-related exhaust emission values, rounded to the nearest tenth of a gram per mile, are the FTP-based city and HFET-based highway carbon-related exhaust emission values for the vehicle configuration.

(3)(i) For the purpose of determining average fuel economy under § 600.510–08, the combined fuel economy value for a vehicle configuration is calculated by harmonically averaging the FTP-based city and HFET-based highway fuel economy values, as determined in paragraph (a)(1) or (2) of this section,

weighted 0.55 and 0.45 respectively, and rounded to the nearest 0.0001 mile per gallon. A sample of this calculation appears in Appendix II of this part.

(ii) For the purpose of determining average carbon-related exhaust emissions under § 600.510–08, the combined carbon-related exhaust emission value for a vehicle configuration is calculated by arithmetically averaging the FTP-based city and HFET-based highway carbon-related exhaust emission values, as determined in paragraph (a)(1) or (2) of this section, weighted 0.55 and 0.45 respectively, and rounded to the nearest tenth of gram per mile.

(4) For alcohol dual fuel automobiles and natural gas dual fuel automobiles the procedures of paragraphs (a)(1) or (2) of this section, as applicable, shall be used to calculate two separate sets of FTP-based city, HFET-based highway, and combined fuel economy and carbon-related exhaust emission values for each configuration.

(i) Calculate the city, highway, and combined fuel economy and carbon-related exhaust emission values from the tests performed using gasoline or diesel test fuel.

(ii) Calculate the city, highway, and combined fuel economy and carbon-related exhaust emission values from the tests performed using alcohol or natural gas test fuel.

(b) If only one equivalent petroleum-based fuel economy value exists for an electric vehicle configuration, that value, rounded to the nearest tenth of a mile per gallon, will comprise the petroleum-based fuel economy for that configuration.

(c) If more than one equivalent petroleum-based fuel economy value exists for an electric vehicle configuration, all values for that vehicle configuration are harmonically averaged and rounded to the nearest 0.0001 mile per gallon for that configuration.

■ 48. A new § 600.208–12 is added to subpart C to read as follows:

§ 600.208–12 Calculation of FTP-based and HFET-based fuel economy and carbon-related exhaust emission values for a model type.

(a) Fuel economy and carbon-related exhaust emission values for a base level are calculated from vehicle configuration fuel economy and carbon-related exhaust emission values as determined in § 600.206–12(a), (b), or (c) as applicable, for low-altitude tests.

(1) If the Administrator determines that automobiles intended for sale in the State of California are likely to exhibit significant differences in fuel economy and carbon-related exhaust emission values from those intended for sale in other states, she will calculate fuel economy and carbon-related exhaust emission values for each base level for vehicles intended for sale in California and for each base level for vehicles intended for sale in the rest of the states.

(2) In order to highlight the fuel efficiency and carbon-related exhaust emission values of certain designs otherwise included within a model type, a manufacturer may wish to subdivide a model type into one or more additional model types. This is accomplished by separating subconfigurations from an existing base level and placing them into a new base level. The new base level is identical to the existing base level except that it shall be considered, for the purposes of this paragraph, as containing a new basic engine. The manufacturer will be permitted to designate such new basic engines and base level(s) if:

(i) Each additional model type resulting from division of another model type has a unique car line name and that name appears on the label and on the vehicle bearing that label;

(ii) The subconfigurations included in the new base levels are not included in any other base level which differs only by basic engine (*i.e.,* they are not included in the calculation of the original base level fuel economy values); and

(iii) All subconfigurations within the new base level are represented by test data in accordance with § 600.010–08(c)(1)(ii).

(3) The manufacturer shall supply total model year sales projections for each car line/vehicle subconfiguration combination.

(i) Sales projections must be supplied separately for each car line-vehicle subconfiguration intended for sale in California and each car line/vehicle subconfiguration intended for sale in the rest of the states if required by the Administrator under paragraph (a)(1) of this section.

(ii) Manufacturers shall update sales projections at the time any model type value is calculated for a label value.

(iii) The provisions of paragraph (a)(3) of this section may be satisfied by providing an amended application for certification, as described in § 86.1844–01 of this chapter.

(4) Vehicle configuration fuel economy and carbon-related exhaust emission values, as determined in § 600.206–12 (a), (b) or (c), as applicable, are grouped according to base level.

(i) If only one vehicle configuration within a base level has been tested, the fuel economy and carbon-related exhaust emission values from that vehicle configuration will constitute the fuel economy and carbon-related exhaust emission values for that base level.

(ii) If more than one vehicle configuration within a base level has been tested, the vehicle configuration fuel economy values are harmonically averaged in proportion to the respective sales fraction (rounded to the nearest 0.0001) of each vehicle configuration and the resultant fuel economy value rounded to the nearest 0.0001 mile per gallon; and the vehicle configuration carbon-related exhaust emission values are arithmetically averaged in proportion to the respective sales fraction (rounded to the nearest 0.0001) of each vehicle configuration and the resultant carbon-related exhaust emission value rounded to the nearest gram per mile.

(5) The procedure specified in paragraph (a)(1) through (4) of this section will be repeated for each base level, thus establishing city, highway, and combined fuel economy and carbon-related exhaust emission values for each base level.

(6) For the purposes of calculating a base level fuel economy or carbon-related exhaust emission value, if the only vehicle configuration(s) within the base level are vehicle configuration(s) which are intended for sale at high altitude, the Administrator may use fuel economy and carbon-related exhaust emission data from tests conducted on these vehicle configuration(s) at high altitude to calculate the fuel economy or carbon-related exhaust emission value for the base level.

(7) For alcohol dual fuel automobiles and natural gas dual fuel automobiles, the procedures of paragraphs (a)(1) through (6) of this section shall be used to calculate two separate sets of city, highway, and combined fuel economy and carbon-related exhaust emission values for each base level.

(i) Calculate the city, highway, and combined fuel economy and carbon-related exhaust emission values from the tests performed using gasoline or diesel test fuel.

(ii) Calculate the city, highway, and combined fuel economy and carbon-related exhaust emission values from the tests performed using alcohol or natural gas test fuel.

(b) For each model type, as determined by the Administrator, a city, highway, and combined fuel economy value and a carbon-related exhaust emission value will be calculated by using the projected sales and fuel economy and carbon-related exhaust emission values for each base level

within the model type. Separate model type calculations will be done based on the vehicle configuration fuel economy and carbon-related exhaust emission values as determined in § 600.206–12 (a), (b) or (c), as applicable.

(1) If the Administrator determines that automobiles intended for sale in the State of California are likely to exhibit significant differences in fuel economy and carbon-related exhaust emission values from those intended for sale in other states, she will calculate fuel economy and carbon-related exhaust emission values for each model type for vehicles intended for sale in California and for each model type for vehicles intended for sale in the rest of the states.

(2) The sales fraction for each base level is calculated by dividing the projected sales of the base level within the model type by the projected sales of the model type and rounding the quotient to the nearest 0.0001.

(3)(i) The FTP-based city fuel economy values of the model type (calculated to the nearest 0.0001 mpg) are determined by dividing one by a sum of terms, each of which corresponds to a base level and which is a fraction determined by dividing:

(A) The sales fraction of a base level; by

(B) The FTP-based city fuel economy value for the respective base level.

(ii) The FTP-based city carbon-related exhaust emission value of the model type (calculated to the nearest gram per mile) are determined by a sum of terms, each of which corresponds to a base level and which is a product determined by multiplying:

(A) The sales fraction of a base level; by

(B) The FTP-based city carbon-related exhaust emission value for the respective base level.

(4) The procedure specified in paragraph (b)(3) of this section is repeated in an analogous manner to determine the highway and combined fuel economy and carbon-related exhaust emission values for the model type.

(5) For alcohol dual fuel automobiles and natural gas dual fuel automobiles, the procedures of paragraphs (b)(1) through (4) of this section shall be used to calculate two separate sets of city, highway, and combined fuel economy values and two separate sets of city, highway, and combined carbon-related exhaust emission values for each model type.

(i) Calculate the city, highway, and combined fuel economy and carbon-related exhaust emission values from the tests performed using gasoline or diesel test fuel.

(ii) Calculate the city, highway, and combined fuel economy and carbon-related exhaust emission values from the tests performed using alcohol or natural gas test fuel.

Subpart D—[Amended]

■ 49. A new § 600.301–12 is added to subpart D to read as follows:

§ 600.301–12 General applicability.

(a) Unless otherwise specified, the provisions of this subpart are applicable to 2012 and later model year automobiles.

(b) [Reserved]

Subpart F—Fuel Economy Regulations for Model Year 1978 Passenger Automobiles and for 1979 and Later Model Year Automobiles (Light Trucks and Passenger Automobiles)—Procedures for Determining Manufacturer's Average Fuel Economy and Manufacturer's Average Carbon-Related Exhaust Emissions

■ 50. The heading for subpart F is revised as set forth above.

■ 51. A new § 600.501–12 is added to subpart F to read as follows:

§ 600.501–12 General applicability.

The provisions of this subpart are applicable to 2012 and later model year passenger automobiles and light trucks and to the manufacturers of 2012 and later model year passenger automobiles and light trucks. The provisions of this subpart are applicable to medium-duty passenger vehicles and to manufacturers of such vehicles.

■ 52. A new § 600.507–12 is added to subpart F to read as follows:

§ 600.507–12 Running change data requirements.

(a) Except as specified in paragraph (d) of this section, the manufacturer shall submit additional running change fuel economy and carbon-related exhaust emissions data as specified in paragraph (b) of this section for any running change approved or implemented under §§ 86.079–32, 86.079–33, 86.082–34, or 86.1842–01 of this chapter, as applicable, which:

(1) Creates a new base level or,

(2) Affects an existing base level by:

(i) Adding an axle ratio which is at least 10 percent larger (or, optionally, 10 percent smaller) than the largest axle ratio tested.

(ii) Increasing (or, optionally, decreasing) the road-load horsepower for a subconfiguration by 10 percent or more for the individual running change or, when considered cumulatively, since original certification (for each cumulative 10 percent increase using the originally certified road-load horsepower as a base).

(iii) Adding a new subconfiguration by increasing (or, optionally, decreasing) the equivalent test weight for any previously tested subconfiguration in the base level.

(iv) Revising the calibration of an electric vehicle, fuel cell vehicle, hybrid electric vehicle, plug-in hybrid electric vehicle or other advanced technology vehicle in such a way that the city or highway fuel economy of the vehicle (or the energy consumption of the vehicle, as may be applicable) is expected to become less fuel efficient (or optionally, more fuel efficient) by 4.0 percent or more as compared to the original fuel economy label values for fuel economy and/or energy consumption, as applicable.

(b)(1) The additional running change fuel economy and carbon-related exhaust emissions data requirement in paragraph (a) of this section will be determined based on the sales of the vehicle configurations in the created or affected base level(s) as updated at the time of running change approval.

(2) Within each newly created base level as specified in paragraph (a)(1) of this section, the manufacturer shall submit data from the highest projected total model year sales subconfiguration within the highest projected total model year sales configuration in the base level.

(3) Within each base level affected by a running change as specified in paragraph (a)(2) of this section, fuel economy and carbon-related exhaust emissions data shall be submitted for the vehicle configuration created or affected by the running change which has the highest total model year projected sales. The test vehicle shall be of the subconfiguration created by the running change which has the highest projected total model year sales within the applicable vehicle configuration.

(c) The manufacturer shall submit the fuel economy data required by this section to the Administrator in accordance with § 600.314(b).

(d) For those model types created under § 600.208–12(a)(2), the manufacturer shall submit fuel economy and carbon-related exhaust emissions data for each subconfiguration added by a running change.

■ 53. A new § 600.509–12 is added to subpart F to read as follows:

§ 600.509–12 Voluntary submission of additional data.

(a) The manufacturer may optionally submit data in addition to the data required by the Administrator.

(b) Additional fuel economy and carbon-related exhaust emissions data may be submitted by the manufacturer for any vehicle configuration which is to be tested as required in § 600.507 or for which fuel economy and carbon-related exhaust emissions data were previously submitted under paragraph (c) of this section.

(c) Within a base level, additional fuel economy and carbon-related exhaust emissions data may be submitted by the manufacturer for any vehicle configuration which is not required to be tested by § 600.507.

■ 54. A new § 600.510–12 is added to subpart F to read as follows:

§ 600.510–12 Calculation of average fuel economy and average carbon-related exhaust emissions.

(a)(1) Average fuel economy will be calculated to the nearest 0.1 mpg for the categories of automobiles identified in this section, and the results of such calculations will be reported to the Secretary of Transportation for use in determining compliance with the applicable fuel economy standards.

(i) An average fuel economy calculation will be made for the category of passenger automobiles as determined by the Secretary of Transportation. For example, categories may include, but are not limited to domestically manufactured and/or non-domestically manufactured passenger automobiles as determined by the Secretary of Transportation.

(ii) [Reserved]

(iii) An average fuel economy calculation will be made for the category of trucks as determined by the Secretary of Transportation. For example, categories may include, but are not limited to domestically manufactured trucks, non-domestically manufactured trucks, light-duty trucks, medium-duty passenger vehicles, and/or heavy-duty trucks as determined by the Secretary of Transportation.

(iv) [Reserved]

(2) Average carbon-related exhaust emissions will be calculated to the nearest one gram per mile for the categories of automobiles identified in this section, and the results of such calculations will be reported to the Administrator for use in determining compliance with the applicable CO_2 emission standards.

(i) An average carbon-related exhaust emissions calculation will be made for passenger automobiles.

(ii) An average carbon-related exhaust emissions calculation will be made for light trucks.

(b) For the purpose of calculating average fuel economy under paragraph (c) of this section and for the purpose of calculating average carbon-related exhaust emissions under paragraph (j) of this section:

(1) All fuel economy and carbon-related exhaust emissions data submitted in accordance with § 600.006(e) or § 600.512(c) shall be used.

(2) The combined city/highway fuel economy and carbon-related exhaust emission values will be calculated for each model type in accordance with § 600.208–12 of this section except that:

(i) Separate fuel economy values will be calculated for model types and base levels associated with car lines for each category of passenger automobiles and light trucks as determined by the Secretary of Transportation pursuant to paragraph (a)(1) of this section.

(ii) Total model year production data, as required by this subpart, will be used instead of sales projections;

(iii) [Reserved]

(iv) The fuel economy value will be rounded to the nearest 0.1 mpg;

(v) The carbon-related exhaust emission value will be rounded to the nearest gram per mile; and

(vi) At the manufacturer's option, those vehicle configurations that are self-compensating to altitude changes may be separated by sales into high-altitude sales categories and low-altitude sales categories. These separate sales categories may then be treated (only for the purpose of this section) as separate configurations in accordance with the procedure of § 600.208–12(a)(4)(ii).

(3) The fuel economy and carbon-related exhaust emission values for each vehicle configuration are the combined fuel economy and carbon-related exhaust emissions calculated according to § 600.206–08(a)(3) except that:

(i) Separate fuel economy values will be calculated for vehicle configurations associated with car lines for each category of passenger automobiles and light trucks as determined by the Secretary of Transportation pursuant to paragraph (a)(1) of this section.

(ii) Total model year production data, as required by this subpart will be used instead of sales projections; and

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to convert gallons of diesel fuel to equivalent gallons of gasoline.

(c) Except as permitted in paragraph (d) of this section, the average fuel economy will be calculated individually for each category identified in paragraph (a)(1) of this section as follows:

(1) Divide the total production volume of that category of automobiles; by

(2) A sum of terms, each of which corresponds to a model type within that category of automobiles and is a fraction determined by dividing the number of automobiles of that model type produced by the manufacturer in the model year; by

(i) For gasoline-fueled and diesel-fueled model types, the fuel economy calculated for that model type in accordance with paragraph (b)(2) of this section; or

(ii) For alcohol-fueled model types, the fuel economy value calculated for that model type in accordance with paragraph (b)(2) of this section divided by 0.15 and rounded to the nearest 0.1 mpg; or

(iii) For natural gas-fueled model types, the fuel economy value calculated for that model type in accordance with paragraph (b)(2) of this section divided by 0.15 and rounded to the nearest 0.1 mpg; or

(iv) For alcohol dual fuel model types, for model years 1993 through 2019, the harmonic average of the following two terms; the result rounded to the nearest 0.1 mpg:

(A) The combined model type fuel economy value for operation on gasoline or diesel fuel as determined in § 600.208–12(b)(5)(i); and

(B) The combined model type fuel economy value for operation on alcohol fuel as determined in § 600.208–12(b)(5)(ii) divided by 0.15 provided the requirements of § 600.510(g) are met; or

(v) For natural gas dual fuel model types, for model years 1993 through 2019, the harmonic average of the following two terms; the result rounded to the nearest 0.1 mpg:

(A) The combined model type fuel economy value for operation on gasoline or diesel as determined in § 600.208–12(b)(5)(i); and

(B) The combined model type fuel economy value for operation on natural gas as determined in § 600.208–12(b)(5)(ii) divided by 0.15 provided the requirements of paragraph (g) of this section are met.

(d) The Administrator may approve alternative calculation methods if they are part of an approved credit plan under the provisions of 15 U.S.C. 2003.

(e) For passenger automobile categories identified in paragraph (a)(1) of this section, the average fuel economy calculated in accordance with paragraph (c) of this section shall be adjusted using the following equation:

$$AFE_{adj} = AFE[((0.55 \times a \times c) + (0.45 \times c) + (0.5556 \times a) + 0.4487)/((0.55 \times a) + 0.45)] + IW$$

Where:

AFE_{adj} = Adjusted average combined fuel economy, rounded to the nearest 0.1 mpg;

AFE = Average combined fuel economy as calculated in paragraph (c) of this section, rounded to the nearest 0.0001 mpg;

a = Sales-weight average (rounded to the nearest 0.0001 mpg) of all model type highway fuel economy values (rounded to the nearest 0.1 mpg) divided by the sales-weighted average (rounded to the nearest 0.0001 mpg) of all model type city fuel economy values (rounded to the nearest 0.1 mpg). The quotient shall be rounded to 4 decimal places. These average fuel economies shall be determined using the methodology of paragraph (c) of this section.

c = 0.0014;

$IW = (9.2917 \times 10^{-3} \times SF_{3IWC} \times FE_{3IWC}) - (3.5123 \times 10^{-3} \times SF_{4ETW} \times FE_{4IWC})$.

Note: Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWC} = The 3000 lb. inertia weight class sales divided by total sales. The quotient shall be rounded to 4 decimal places.

SF_{4ETW} = The 4000 lb. equivalent test weight category sales divided by total sales. The quotient shall be rounded to 4 decimal places.

FE_{4IWC} = The sales-weighted average combined fuel economy of all 3000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

FE_{4IWC} = The sales-weighted average combined fuel economy of all 4000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

(f) The Administrator shall calculate and apply additional average fuel economy adjustments if, after notice and opportunity for comment, the Administrator determines that, as a result of test procedure changes not previously considered, such correction is necessary to yield fuel economy test results that are comparable to those obtained under the 1975 test procedures. In making such determinations, the Administrator must find that:

(1) A directional change in measured fuel economy of an average vehicle can be predicted from a revision to the test procedures;

(2) The magnitude of the change in measured fuel economy for any vehicle or fleet of vehicles caused by a revision to the test procedures is quantifiable from theoretical calculations or best available test data;

(3) The impact of a change on average fuel economy is not due to eliminating the ability of manufacturers to take advantage of flexibility within the existing test procedures to gain measured improvements in fuel economy which are not the result of actual improvements in the fuel economy of production vehicles;

(4) The impact of a change on average fuel economy is not solely due to a greater ability of manufacturers to reflect in average fuel economy those design changes expected to have comparable effects on in-use fuel economy;

(5) The test procedure change is required by EPA or is a change initiated by EPA in its laboratory and is not a change implemented solely by a manufacturer in its own laboratory.

(g)(1) Alcohol dual fuel automobiles and natural gas dual fuel automobiles must provide equal or greater energy efficiency while operating on alcohol or natural gas as while operating on gasoline or diesel fuel to obtain the CAFE credit determined in paragraphs (c)(2)(iv) and (v) of this section or to obtain the carbon-related exhaust emissions credit determined in paragraphs (j)(2)(ii) and (iii). The following equation must hold true:

$E_{alt}/E_{pet} >$ or = 1

Where:

$E_{alt} = [FE_{alt}/(NHV_{alt} \times D_{alt})] \times 10^6$ = energy efficiency while operating on alternative fuel rounded to the nearest 0.01 miles/million BTU.

$E_{pet} = [FE_{pet}/(NHV_{pet} \times D_{pet})] \times 10^6$ = energy efficiency while operating on gasoline or diesel (petroleum) fuel rounded to the nearest 0.01 miles/million BTU.

FE_{alt} is the fuel economy [miles/gallon for liquid fuels or miles/100 standard cubic feet for gaseous fuels] while operated on the alternative fuel as determined in § 600.113–08(a) and (b);

FE_{pet} is the fuel economy [miles/gallon] while operated on petroleum fuel (gasoline or diesel) as determined in § 600.113(a) and (b);

NHV_{alt} is the net (lower) heating value [BTU/lb] of the alternative fuel;

NHV_{pet} is the net (lower) heating value [BTU/lb] of the petroleum fuel;

D_{alt} is the density [lb/gallon for liquid fuels or lb/100 standard cubic feet for gaseous fuels] of the alternative fuel;

D_{pet} is the density [lb/gallon] of the petroleum fuel.

(i) The equation must hold true for both the FTP city and HFET highway fuel economy values for each test of each test vehicle.

(ii)(A) The net heating value for alcohol fuels shall be premeasured using a test method which has been approved in advance by the Administrator.

(B) The density for alcohol fuels shall be premeasured using ASTM D 1298–85 (Reapproved 1990) "Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method" (incorporated by reference at § 600.011–93).

(iii) The net heating value and density of gasoline are to be determined by the manufacturer in accordance with § 600.113(f).

(2) [Reserved]

(3) Alcohol dual fuel passenger automobiles and natural gas dual fuel passenger automobiles manufactured during model years 1993 through 2019 must meet the minimum driving range requirements established by the Secretary of Transportation (49 CFR part 538) to obtain the CAFE credit determined in paragraphs (c)(2)(iv) and (v) of this section.

(h) For model years 1993 and later, and for each category of automobile identified in paragraph (a)(1) of this section, the maximum increase in average fuel economy determined in paragraph (c) of this section attributable to alcohol dual fuel automobiles and natural gas dual fuel automobiles shall be as follows:

Model year	Maximum increase (mpg)
1993–2014	1.2
2015	1.0
2016	0.8
2017	0.6
2018	0.4
2019	0.2
2020 and later	0.0

(1) The Administrator shall calculate the increase in average fuel economy to determine if the maximum increase provided in paragraph (h) of this section has been reached. The Administrator shall calculate the average fuel economy for each category of automobiles specified in paragraph (a)(1) of this section by subtracting the average fuel economy values calculated in accordance with this section by assuming all alcohol dual fuel and natural gas dual fuel automobiles are operated exclusively on gasoline (or diesel) fuel from the average fuel economy values determined in paragraph (c) of this section. The difference is limited to the maximum increase specified in paragraph (h) of this section.

(2) [Reserved]

(i) For model years 2012 through 2015, and for each category of automobile identified in paragraph (a)(1) of this section, the maximum decrease in average carbon-related exhaust emissions determined in paragraph (j) of this section attributable to alcohol dual fuel automobiles and natural gas dual fuel automobiles shall be calculated using the following

formula, and rounded to the nearest tenth of a gram per mile:

$$\text{Maximum Decrease} = \frac{8887}{\left[\frac{8887}{FltAvg} - MPG_{MAX}\right]} - FltAvg$$

Where:

FltAvg = The fleet average CREE value for passenger automobiles or light trucks determined for the applicable model year according to paragraph (j) of this section, except by assuming all alcohol dual fuel and natural gas dual fuel automobiles are operated exclusively on gasoline (or diesel) fuel.

MPG_{MAX} = The maximum increase in miles per gallon determined for the appropriate model year in paragraph (h) of this section.

(1) The Administrator shall calculate the decrease in average carbon-related exhaust emissions to determine if the maximum decrease provided in this paragraph (i) has been reached. The Administrator shall calculate the average carbon-related exhaust emissions for each category of automobiles specified in paragraph (a) of this section by subtracting the average carbon-related exhaust emission values determined in paragraph (j) of this section from the average carbon-related exhaust emission values calculated in accordance with this section by assuming all alcohol dual fuel and natural gas dual fuel automobiles are operated exclusively on gasoline (or diesel) fuel. The difference is limited to the maximum decrease specified in paragraph (i) of this section.

(2) [Reserved]

(j) The average carbon-related exhaust emissions will be calculated individually for each category identified in paragraph (a)(1) of this section as follows:

(1) Divide the total production volume of that category of automobiles into:

(2) A sum of terms, each of which corresponds to a model type within that category of automobiles and is a product determined by multiplying the number of automobiles of that model type produced by the manufacturer in the model year by:

(i) For gasoline-fueled and diesel-fueled model types, the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section; or

(ii)(A) For alcohol-fueled model types, for model years 2012 through 2015, the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15; or

(B) For alcohol-fueled model types, for model years 2016 and later, the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section; or

(iii)(A) For natural gas-fueled model types, for model years 2012 through 2015, the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section multiplied by 0.15 and rounded to the nearest gram per mile, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15; or

(B) For natural gas-fueled model types, for model years 2016 and later, the carbon-related exhaust emissions value calculated for that model type in accordance with paragraph (b)(2) of this section; or

(iv) For alcohol dual fuel model types, for model years 2012 through 2015, the arithmetic average of the following two terms, the result rounded to the nearest gram per mile:

(A) The combined model type carbon-related exhaust emissions value for operation on gasoline or diesel fuel as determined in § 600.208–12(b)(5)(i); and

(B) The combined model type carbon-related exhaust emissions value for operation on alcohol fuel as determined in § 600.208–12(b)(5)(ii) multiplied by 0.15 provided the requirements of paragraph (g) of this section are met, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15; or

(v) For natural gas dual fuel model types, for model years 2012 through 2015, the arithmetic average of the following two terms; the result rounded to the nearest gram per mile:

(A) The combined model type carbon-related exhaust emissions value for operation on gasoline or diesel as determined in § 600.208–12(b)(5)(i); and

(B) The combined model type carbon-related exhaust emissions value for operation on natural gas as determined in § 600.208–12(b)(5)(ii) multiplied by 0.15 provided the requirements of paragraph (g) of this section are met, except that manufacturers complying with the fleet averaging option for N_2O and CH_4 as allowed under § 86.1818–12(f)(2) of this chapter must perform this calculation such that N_2O and CH_4 values are not multiplied by 0.15.

(vi) For alcohol dual fuel model types, for model years 2016 and later, the combined model type carbon-related exhaust emissions value determined according to the following formula and rounded to the nearest gram per mile:

$$CREE = (F \times CREE_{alt}) + ((1 - F) \times CREE_{gas})$$

Where:

F = 0.00 unless otherwise approved by the Administrator according to the provisions of paragraph (k) of this section;

$CREE_{alt}$ = The combined model type carbon-related exhaust emissions value for operation on alcohol fuel as determined in § 600.208–12(b)(5)(ii); and

$CREE_{gas}$ = The combined model type carbon-related exhaust emissions value for operation on gasoline or diesel fuel as determined in § 600.208–12(b)(5)(i).

(vii) For natural gas dual fuel model types, for model years 2016 and later, the combined model type carbon-related exhaust emissions value determined according to the following formula and rounded to the nearest gram per mile:

$$CREE = (F \times CREE_{alt}) + ((1 - F) \times CREE_{gas})$$

Where:

F = 0.00 unless otherwise approved by the Administrator according to the provisions of paragraph (k) of this section;

$CREE_{alt}$ = The combined model type carbon-related exhaust emissions value for operation on natural gas as determined in § 600.208–12(b)(5)(ii); and

$CREE_{gas}$ = The combined model type carbon-related exhaust emissions value for

operation on gasoline or diesel fuel as determined in § 600.208–12(b)(5)(i).

(k) *Alternative in-use weighting factors for dual fuel model types.* Using one of the methods in either paragraph (k)(1) or (2) of this section, manufacturers may request the use of alternative values for the weighting factor F in the equations in paragraphs (j)(2)(vi) and (vii) of this section. Unless otherwise approved by the Administrator, the manufacturer must use the value of F that is in effect in paragraphs (j)(2)(vi) and (vii) of this section.

(1) Upon written request from a manufacturer, the Administrator will determine and publish by written guidance an appropriate value of F for each requested alternative fuel based on the Administrator's assessment of real-world use of the alternative fuel. Such published values would be available for any manufacturer to use. The Administrator will periodically update these values upon written request from a manufacturer.

(2) The manufacturer may optionally submit to the Administrator its own demonstration regarding the real-world use of the alternative fuel in their vehicles and its own estimate of the appropriate value of F in the equations in paragraphs (j)(2)(vi) and (vii) of this section. Depending on the nature of the analytical approach, the manufacturer could provide estimates of F that are model type specific or that are generally applicable to the manufacturer's dual fuel fleet. The manufacturer's analysis could include use of data gathered from on-board sensors and computers, from dual fuel vehicles in fleets that are centrally fueled, or from other sources. The analysis must be based on sound statistical methodology and must account for analytical uncertainty. Any approval by the Administrator will pertain to the use of values of F for the model types specified by the manufacturer.

■ 55. A new § 600.512–12 is added to subpart F to read as follows:

§ 600.512–12 Model year report.

(a) For each model year, the manufacturer shall submit to the Administrator a report, known as the model year report, containing all information necessary for the calculation of the manufacturer's average fuel economy and all information necessary for the calculation of the manufacturer's average carbon-related exhaust emissions.

(1) The results of the manufacturer calculations and summary information of model type fuel economy values which are contained in the average fuel economy calculation shall also be submitted to the Secretary of the Department of Transportation, National Highway and Traffic Safety Administration.

(2) The results of the manufacturer calculations and summary information of model type carbon-related exhaust emission values which are contained in the average calculation shall be submitted to the Administrator.

(b)(1) The model year report shall be in writing, signed by the authorized representative of the manufacturer and shall be submitted no later than 90 days after the end of the model year.

(2) The Administrator may waive the requirement that the model year report be submitted no later than 90 days after the end of the model year. Based upon a request by the manufacturer, if the Administrator determines that 90 days is insufficient time for the manufacturer to provide all additional data required as determined in § 600.507, the Administrator shall establish an alternative date by which the model year report must be submitted.

(3) Separate reports shall be submitted for passenger automobiles and light trucks (as identified in § 600.510).

(c) The model year report must include the following information:

(1)(i) All fuel economy data used in the FTP/HFET-based model type calculations under § 600.208–12, and subsequently required by the Administrator in accordance with § 600.507;

(ii) All carbon-related exhaust emission data used in the FTP/HFET-based model type calculations under § 600.208–12, and subsequently required by the Administrator in accordance with § 600.507;

(2)(i) All fuel economy data for certification vehicles and for vehicles tested for running changes approved under § 86.1842–01 of this chapter;

(ii) All carbon-related exhaust emission data for certification vehicles and for vehicles tested for running changes approved under § 86.1842–01 of this chapter;

(3) Any additional fuel economy and carbon-related exhaust emission data submitted by the manufacturer under § 600.509;

(4)(i) A fuel economy value for each model type of the manufacturer's product line calculated according to § 600.510(b)(2);

(ii) A carbon-related exhaust emission value for each model type of the manufacturer's product line calculated according to § 600.510(b)(2);

(5)(i) The manufacturer's average fuel economy value calculated according to § 600.510(c);

(ii) The manufacturer's average carbon-related exhaust emission value calculated according to § 600.510(j);

(6) A listing of both domestically and nondomestically produced car lines as determined in § 600.511 and the cost information upon which the determination was made; and

(7) The authenticity and accuracy of production data must be attested to by the corporation, and shall bear the signature of an officer (a corporate executive of at least the rank of vice-president) designated by the corporation. Such attestation shall constitute a representation by the manufacturer that the manufacturer has established reasonable, prudent procedures to ascertain and provide production data that are accurate and authentic in all material respects and that these procedures have been followed by employees of the manufacturer involved in the reporting process. The signature of the designated officer shall constitute a representation by the required attestation.

(8) For 2008–2010 light truck model year reports, the average fuel economy standard or the "required fuel economy level" pursuant to 49 CFR part 533, as applicable. Model year reports for light trucks meeting required fuel economy levels pursuant to 49 CFR 533.5(g) and (h) shall include information in sufficient detail to verify the accuracy of the calculated required fuel economy level. Such information is expected to include but is not limited to, production information for each unique footprint within each model type contained in the model year report and the formula used to calculate the required fuel economy level. Model year reports for required fuel economy levels shall include a statement that the method of measuring vehicle track width, measuring vehicle wheelbase and calculating vehicle footprint is accurate and complies with applicable Department of Transportation requirements.

(9) For 2011 and later model year reports, the "required fuel economy level" pursuant to 49 CFR parts 531 or 533, as applicable. Model year reports shall include information in sufficient detail to verify the accuracy of the calculated required fuel economy level, including but is not limited to, production information for each unique footprint within each model type contained in the model year report and the formula used to calculate the required fuel economy level. Model year reports shall include a statement that the method of measuring vehicle track

width, measuring vehicle wheelbase and calculating vehicle footprint is accurate and complies with applicable Department of Transportation requirements.

(10) For 2012 and later model year reports, the "required fuel economy level" pursuant to 49 CFR parts 531 or 533 as applicable, and the applicable fleet average CO_2 emission standards. Model year reports shall include information in sufficient detail to verify the accuracy of the calculated required fuel economy level and fleet average CO_2 emission standards, including but is not limited to, production information for each unique footprint within each model type contained in the model year report and the formula used to calculate the required fuel economy level and fleet average CO_2 emission standards. Model year reports shall include a statement that the method of measuring vehicle track width, measuring vehicle wheelbase and calculating vehicle footprint is accurate and complies with applicable Department of Transportation and EPA requirements.

(11) For 2012 and later model year reports, a detailed (but easy to understand) list of vehicle models and the applicable in-use CREE emission standard. The list of models shall include the applicable carline/subconfiguration parameters (including carline, equivalent test weight, road-load horsepower, axle ratio, engine code, transmission class, transmission configuration and basic engine); the test parameters (ETW and a, b, c, dynamometer coefficients) and the associated CREE emission standard. The manufacturer shall provide the method of identifying EPA engine code for applicable in-use vehicles.

■ 56. A new § 600.514–12 is added to subpart F to read as follows:

§ 600.514–12 Reports to the Environmental Protection Agency.

This section establishes requirements for automobile manufacturers to submit reports to the Environmental Protection Agency regarding their efforts to reduce automotive greenhouse gas emissions.

(a) *General Requirements.* (1) For each model year, each manufacturer shall submit a pre-model year report.

(2) The pre-model year report required by this section for each model year must be submitted before the model year begins and before the certification of any test group, no later than December 31 of the calendar year two years before the model year. For example the pre-model year report for the 2012 model year must be submitted no later than December 31, 2010.

(3) Each report required by this section must:

(i) Identify the report as a pre-model year report;

(ii) Identify the manufacturer submitting the report;

(iii) State the full name, title, and address of the official responsible for preparing the report;

(iv) Be submitted to: Director, Compliance and Innovative Strategies Division, U.S. Environmental Protection Agency, 2000 Traverwood, Ann Arbor, Michigan 48105;

(v) Identify the current model year;

(vi) Be written in the English language; and

(vii) Be based upon all information and data available to the manufacturer approximately 30 days before the report is submitted to the Administrator.

(b) *Content of pre-model year reports.* (1) Each pre-model year report must include the following information for each compliance category for the applicable future model year and to the extent possible, two model years into the future:

(i) The manufacturer's estimate of its footprint-based fleet average CO_2 standards (including temporary lead time allowance alternative standards, if applicable);

(ii) Projected total and model-level production volumes for each applicable standard category;

(iii) Projected fleet average CO_2 compliance level for each applicable standard category; and the model-level CO_2 emission values which form the basis of the projection;

(iv) Projected fleet average CO_2 credit/debit status for each applicable standard category;

(v) A description of the various credit, transfer and trading options that will be used to comply with each applicable standard category, including the amount of credit the manufacturer intends to generate for air conditioning leakage, air conditioning efficiency, off-cycle technology, and various early credit programs;

(vi) A description of the method which will be used to calculate the carbon-related exhaust emissions for any electric vehicles, fuel cell vehicles and plug-in hybrid vehicles;

(vii) A summary by model year (beginning with the 2009 model year) of the number of electric vehicles, fuel cell vehicles and plug-in hybrid vehicles using (or projected to use) the advanced technology vehicle incentives program;

(viii) The methodology which will be used to comply with N_2O and CH_4 emission standards; and

(ix) Other information requested by the Administrator.

(2) Manufacturers must submit, in the pre-model year report for each model year in which a credit deficit is generated (or projected to be generated), a compliance plan demonstrating how the manufacturer will comply with the fleet average CO_2 standard by the end of the third year after the deficit occurred.

Department of Transportation

49 CFR Chapter V

In consideration of the foregoing, under the authority of 49 U.S.C. 32901, 32902, 32903, and 32907, and delegation of authority at 49 CFR 1.50, NHTSA amends 49 CFR Chapter V as follows:

PART 531—PASSENGER AUTOMOBILE AVERAGE FUEL ECONOMY STANDARDS

■ 1. The authority citation for part 531 continues to read as follows:

Authority: 49 U.S.C. 32902; delegation of authority at 49 CFR 1.50.

■ 2. Amend § 531.5 as follows:

■ a. By revising paragraph (a) introductory text.

■ b. By revising paragraph (c).

■ c. By redesignating paragraph (d) as paragraph (e).

■ d. By adding a new paragraph (d).

§ 531.5 Fuel economy standards.

(a) Except as provided in paragraph (e) of this section, each manufacturer of passenger automobiles shall comply with the average fuel economy standards in Table I, expressed in miles per gallon, in the model year specified as applicable:

* * * * *

(c) For model years 2012–2016, a manufacturer's passenger automobile fleet shall comply with the fuel economy level calculated for that model year according to Figure 2 and the appropriate values in Table III.

Figure 2 :

$$CAFE_{required} = \frac{\sum_i Production_i}{\sum_i \frac{Production_i}{TARGET_i}}$$

Where:

$CAFE_{required}$ is the required level for a given fleet (domestic passenger automobiles or import passenger automobiles),

Subscript i is a designation of multiple groups of automobiles, where each group's designation, *i.e.,* i = 1, 2, 3, etc., represents automobiles that share a unique model type and footprint within the applicable fleet, either domestic passenger automobiles or import passenger automobiles.

$Production_i$ is the number of passenger automobiles produced for sale in the United States within each ith designation, *i.e.,* which shares the same model type and footprint.

$TARGET_i$ is the fuel economy target in miles per gallon (mpg) applicable to the footprint of passenger automobiles within each ith designation, *i.e.,* which shares the same model type and footprint, calculated according to Figure 3 and rounded to the nearest hundredth of a mpg, *i.e.,* 35.455 = 35.46 mpg, and the summations in the numerator and denominator are both performed over all models in the fleet in question.

Figure 3 :

$$TARGET = \frac{1}{MIN\left[MAX\left(c \times FOOTPRINT + d, \frac{1}{a}\right), \frac{1}{b}\right]}$$

Where:

TARGET is the fuel economy target (in mpg) applicable to vehicles of a given footprint (*FOOTPRINT,* in square feet),

Parameters *a, b, c,* and *d* are defined in Table III, and

The *MIN* and *MAX* functions take the minimum and maximum, respectively, of the included values.

TABLE III—PARAMETERS FOR THE PASSENGER AUTOMOBILE FUEL ECONOMY TARGETS

Model year	Parameters			
	a	*b*	*c*	*d*
2012	35.95	27.95	0.0005308	0.006057
2013	36.80	28.46	0.0005308	0.005410
2014	37.75	29.03	0.0005308	0.004725
2015	39.24	29.90	0.0005308	0.003719
2016	41.09	30.96	0.0005308	0.002573

(d) In addition to the requirement of paragraphs (b) and (c) of this section, each manufacturer shall also meet the minimum standard for domestically manufactured passenger automobiles expressed in Table IV:

TABLE IV

Model year	Minimum standard
2011	27.8
2012	30.7
2013	31.4
2014	32.1
2015	33.3
2016	34.7

* * * * *

■ 3. Add Appendix A to Part 531 to read as follows:

Appendix A to Part 531—Example of Calculating Compliance Under § 531.5(c)

Assume a hypothetical manufacturer (Manufacturer X) produces a fleet of domestic passenger automobiles in MY 2012 as follows:

Appendix A, Table 1

Model type				Description	Actual measured fuel economy (mpg)	Volume
Group	Carline name	Basic engine (L)	Transmission class			
1	PC A FWD	1.8	A5	2-door sedan	34.0	1,500
2	PC A FWD	1.8	M6	2-door sedan	34.6	2,000
3	PC A FWD	2.5	A6	4-door wagon	33.8	2,000
4	PC A AWD	1.8	A6	4-door wagon	34.4	1,000
5	PC A AWD	2.5	M6	2-door hatchback	32.9	3,000
6	PC B RWD	2.5	A6	4-door wagon	32.2	8,000
7	PC B RWD	2.5	A7	4-door sedan	33.1	2,000
8	PC C AWD	3.2	A7	4-door sedan	30.6	5,000
9	PC C FWD	3.2	M6	2-door coupe	28.5	3,000
Total						27,500

Note to Appendix A, Table 1. Manufacturer X's required corporate average fuel economy level standard under § 531.5(c) would first be calculated by determining the fuel economy targets applicable to each unique model type and footprint combination for model type groups 1–9 as illustrated in Appendix A, Table 2:

Appendix A, Table 2

Manufacturer X calculates a fuel economy target standard for each unique model type and footprint combination.

Model type				Description	Base tire size	Wheel-base (inches)	Track width F&R average (inches)	Footprint (ft^2)	Volume	Fuel economy target standard (mpg)
Group	Carline name	Basic engine (L)	Trans-mission class							
1a	PC A FWD	1.8	A5	2-door sedan	205/75R14	99.8	61.2	42.4	900	35.01
1b	PC A FWD	1.8	A5	2-door sedan	215/70R15	99.8	60.9	42.2	600	35.14
2	PC A FWD	1.8	M6	2-door sedan	215/70R15	99.8	60.9	42.2	2,000	35.14
3	PC A FWD	2.5	A6	4-door wagon	215/70R15	100.0	60.9	42.3	2,000	35.08
4	PC A AWD	1.8	A6	4-door wagon	235/60R15	100.0	61.2	42.5	1,000	35.95
5	PC A AWD	2.5	M6	2-door hatchback.	225/65R16	99.6	59.5	41.2	3,000	35.81
6a	PC B RWD	2.5	A6	4-door wagon	235/65R16	109.2	67.2	51.0	4,000	30.19
6b	PC B RWD	2.5	A6	4-door wagon	265/55R18	109.2	66.8	50.7	4,000	30.33
7	PC B RWD	2.5	A7	4-door sedan	235/65R17	109.2	67.8	51.4	2,000	29.99
8	PC C AWD	3.2	A7	4-door sedan	265/55R18	111.3	67.8	52.4	5,000	29.52
9	PC C FWD	3.2	M6	2-door coupe	225/65R16	111.3	67.2	51.9	3,000	29.76
Total									27,500	

Note to Appendix A, Table 2. With the appropriate fuel economy targets determined for each unique model type and footprint combination, Manufacturer X's required fuel economy target standard would be calculated as illustrated in Appendix A, Figure 1.

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Appendix A, Figure 1

Calculation of Manufacturer X's target fuel economy standard

(Manufacturer's Domestic Passenger Automobile Production for Applicable Model Year)

/ ((Group 1a Volume / Group 1a Target) + ((Group 1b Volume / Group 1b Target) + … +

(Group 9 Volume / Group 9 Target)) =

27500 / (900/35.01 + 600/35.14 + 2000/35.14 + 2000/35.08 + 1000/34.95 + 3000/35.81 +

4000/30.19 + 4000/30.33 + 2000/29.99 + 5000/25.52 + 3000/29.76) = 31.6

$$\frac{\text{Manufacturer's Domestic Passenger Automobile Production for Applicable Model Year}}{\left[\frac{\text{Group1a Volume}}{\text{Group1a Target}}+\frac{\text{Group1b Volume}}{\text{Group1b Target}}+\frac{\text{Group2 Volume}}{\text{Group2 Target}}+\frac{\text{Group3 Volume}}{\text{Group3 Target}}+\cdots+\frac{\text{Group7 Volume}}{\text{Group7 Target}}+\frac{\text{Group8 Volume}}{\text{Group8 Target}}+\frac{\text{Group9 Volume}}{\text{Group9 Target}}\right]}$$

$$\frac{27{,}500}{\left[\frac{900}{35.27}+\frac{600}{35.40}+\frac{2000}{35.40}+\frac{2000}{35.35}+\frac{1000}{35.21}+\frac{3000}{36.12}+\frac{4000}{30.40}+\frac{4000}{30.55}+\frac{2000}{30.18}+\frac{5000}{29.71}+\frac{3000}{29.93}\right]}$$

Fleet's target fuel economy standard = 31.6 mpg

Appendix A, Figure 2

Calculation of Manufacturer X's actual fuel economy value.

(Manufacturer's Domestic Passenger Automobile Production for Applicable Model Year)

/ ((Group 1 Volume / Group 1 Fuel Economy) + ((Group 2 Volume / Group 2 Fuel

Economy) + … + (Group 9 Volume / Group 9 Fuel Economy)) =

27500 / (1500/34.0 + 2000/34.6 + 2000/33.8 + 1000/34.4 + 3000/32.9 + 8000/32.2 +

2000/33.1 + 5000/30.6 + 3000/28.5) = 32.0

$$\frac{\text{Manufacturer's Domestic Passenger Automobile Production for Applicable Model Year}}{\left[\frac{\text{Group1 Volume}}{\text{Group1 FuelEcon}}+\frac{\text{Group2 Volume}}{\text{Group2 FuelEcon}}+\frac{\text{Group3 Volume}}{\text{Group3 FuelEcon}}+\frac{\text{Group4 Volume}}{\text{Group4 FuelEcon}}+\frac{\text{Group5 Volume}}{\text{Group5 FuelEcon}}+\frac{\text{Group6 Volume}}{\text{Group6 FuelEcon}}+\frac{\text{Group7 Volume}}{\text{Group7 FuelEcon}}+\frac{\text{Group8 Volume}}{\text{Group8 FuelEcon}}+\frac{\text{Group9 Volume}}{\text{Group9 FuelEcon}}\right]}$$

$$\frac{27{,}500}{\left[\frac{1500}{34.0}+\frac{2000}{34.6}+\frac{2000}{33.8}+\frac{1000}{34.4}+\frac{3000}{32.9}+\frac{8000}{32.2}+\frac{2000}{33.1}+\frac{5000}{30.6}+\frac{3000}{28.5}\right]}$$

Fleet's actual fuel economy = 32.0 mpg

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Note to Appendix A, Figure 2. Since the actual average fuel economy of Manufacturer X's fleet is 32.0 mpg, as compared to its required fuel economy level of 31.8 mpg, Manufacturer X complied with the CAFE standard for MY 2012 as set forth in § 531.5(c).

PART 533—LIGHT TRUCK FUEL ECONOMY STANDARDS

■ 4. The authority citation for part 533 continues to read as follows:

Authority: 49 U.S.C. 32902; delegation of authority at 49 CFR 1.50.

■ 5. Amend § 533.5 by adding Figures 2 and 3 and Table VI at the end of paragraph (a), and adding paragraph (i), to read as follows:

§ 533.5 Requirements.

(a) * * *

* * * * *

Figure 2 : $$CAFE_{required} = \frac{\sum_i Production_i}{\sum_i \frac{Production_i}{TARGET_i}}$$

Where:

$CAFE_{required}$ is the required level for a given fleet,

Subscript i is a designation of multiple groups of light trucks, where each group's designation, *i.e.,* i = 1, 2, 3, etc., represents light trucks that share a unique model type and footprint within the applicable fleet.

Production$_i$ is the number of units of light trucks produced for sale in the United States within each ith designation, *i.e.,* which share the same model type and footprint.

TARGET$_i$ is the fuel economy target in miles per gallon (mpg) applicable to the footprint of light trucks within each ith designation, *i.e.,* which shares the same model type and footprint, calculated according to Figure 3 and rounded to the nearest hundredth of a mpg, *i.e.,* 35.455 = 35.46 mpg, and the summations in the numerator and denominator are both performed over all models in the fleet in question.

Figure 3 :

$$TARGET = \frac{1}{MIN\left[MAX\left(c \times FOOTPRINT + d, \frac{1}{a}\right), \frac{1}{b}\right]}$$

Where:

TARGET is the fuel economy target (in mpg) applicable to vehicles of a given footprint (*FOOTPRINT,* in square feet),

Parameters *a, b, c,* and *d* are defined in Table VI, and

The *MIN* and *MAX* functions take the minimum and maximum, respectively of the included values.

TABLE VI—PARAMETERS FOR THE LIGHT TRUCK FUEL ECONOMY TARGETS

Model year	Parameters			
	a	*b*	*c*	*d*
2012	29.82	22.27	0.0004546	0.014900
2013	30.67	22.74	0.0004546	0.013968
2014	31.38	23.13	0.0004546	0.013225
2015	32.72	23.85	0.0004546	0.011920
2016	34.42	24.74	0.0004546	0.010413

* * * * *

(i) For model years 2012–2016, a manufacturer's light truck fleet shall comply with the fuel economy level calculated for that model year according to Figures 2 and 3 and the appropriate values in Table VI.

■ 6. Amend Appendix A to Part 533 by revising Tables 1 and 2 and Figures 1 and 2 to read as follows:

Appendix A to Part 533—Example of Calculating Compliance Under § 533.5(i)

Assume a hypothetical manufacturer (Manufacturer X) produces a fleet of light trucks in MY 2012 as follows:

Appendix A, Table 1

Model type				Description	Actual measured fuel economy (mpg)	Volume
Group	Carline name	Basic engine (L)	Transmission class			
1	Pickup A 2WD	4	A5	Reg cab, MB	27.1	800
2	Pickup B 2WD	4	M5	Reg cab, MB	27.6	200
3	Pickup C 2WD	4.5	A5	Reg cab, LB	23.9	300
4	Pickup C 2WD	4	M5	Ext cab, MB	23.7	400
5	Pickup C 4WD	4.5	A5	Crew cab, SB	23.5	400
6	Pickup D 2WD	4.5	A6	Crew cab, SB	23.6	400
7	Pickup E 2WD	5	A6	Ext cab, LB	22.7	500
8	Pickup E 2WD	5	A6	Crew cab, MB	22.5	500
9	Pickup F 2WD	4.5	A5	Reg cab, LB	22.5	1,600
10	Pickup F 4WD	4.5	A5	Ext cab, MB	22.3	800
11	Pickup F 4WD	4.5	A5	Crew cab, SB	22.2	800
Total						6,700

Note to Appendix A, Table 1. Manufacturer X's required corporate average fuel economy level under § 533.5(i) would first be calculated by determining the fuel economy targets applicable to each unique model type and footprint combination for model type groups (1–11) illustrated in Appendix A, Table 2:

Appendix A, Table 2

Manufacturer X calculates a fuel economy target standard value for each unique model type and footprint combination.

Model type				Description	Base tire size	Wheel-base (inches)	Track width F&R average (inches)	Footprint (ft^2)	Volume	Fuel economy target standard (mpg)
Group	Carline name	Basic engine (L)	Transmission class							
1	Pickup A 2WD	4	A5	Reg cab, MB	235/75R15	100.0	68.8	47.8	800	27.30
2a	Pickup B 2WD	4	M5	Reg cab, MB	235/75R15	100.0	68.2	47.4	100	27.44
2b	Pickup B 2WD	4	M5	Reg cab, MB	235/70R16	100.0	68.4	47.5	100	27.40
3	Pickup C 2WD	4.5	A5	Reg cab, LB	255/70R17	125.0	68.8	59.7	300	23.79
4	Pickup C 2WD	4	M5	Ext cab, MB	255/70R17	125.0	68.8	59.7	400	23.79
5	Pickup C 4WD	4.5	A5	Crew cab, SB	275/70R17	150.0	69.0	71.9	400	22.27
6a	Pickup D 2WD	4.5	A6	Crew cab, SB	255/70R17	125.0	68.8	59.7	200	23.79
6b	Pickup D 2WD	4.5	A6	Crew cab, SB	285/70R17	125.0	69.2	60.1	200	23.68
7	Pickup E 2WD	5	A6	Ext cab, LB	255/70R17	125.0	68.8	59.7	500	23.79
8	Pickup E 2WD	5	A6	Crew cab, MB.	285/70R17	125.0	69.2	60.1	500	23.68
9	Pickup F 2WD	4.5	A5	Reg cab, LB	255/70R17	125.0	68.9	59.8	1,600	23.76
10	Pickup F 4WD	4.5	A5	Ext cab, MB	275/70R17	150.0	69.0	71.9	800	22.27
11	Pickup F 4WD	4.5	A5	Crew cab, SB	285/70R17	150.0	69.2	72.1	800	22.27
Total									6,700	

Note to Appendix A, Table 2. With the appropriate fuel economy targets determined for each unique model type and footprint combination, Manufacturer X's required fuel economy target standard would be calculated as illustrated in Appendix A, Figure 1.

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Appendix A, Figure 1

Calculation of Manufacturer X's target fuel economy standard value.

(Manufacturer's Light Truck Production for Applicable Model Year) / ((Group 1 Volume / Group 1 Target) + ((Group 2a Volume / Group 2a Target) + … + (Group 11 Volume / Group 11 Target)) =

6700/ (800/27.30 + 100/27.44 + 100/27.40 + 300/23.79 + 400/23.79 + 400/22.27 + 200/23.79 + 200/23.68 + 500/23.79 + 500/23.68 + 1600/23.76 + 800/22.27 + 800/22.27) = 23.7

$$\frac{\text{Manufacturer's Light Truck Production for Applicable Model Year}}{\left[\frac{\text{Group1 Volume}}{\text{Group1 Target}}+\frac{\text{Group2a Volume}}{\text{Group2a Target}}+\frac{\text{Group2b Volume}}{\text{Group2b Target}}+\frac{\text{Group3 Volume}}{\text{Group3 Target}}+\cdots+\frac{\text{Group9 Volume}}{\text{Group9 Target}}+\frac{\text{Group10 Volume}}{\text{Group10 Target}}+\frac{\text{Group11 Volume}}{\text{Group11 Target}}\right]}$$

$$\frac{6{,}700}{\left[\frac{800}{26.99}+\frac{100}{27.13}+\frac{100}{27.08}+\frac{300}{23.54}+\frac{400}{23.54}+\frac{400}{22.06}+\frac{200}{23.54}+\frac{200}{23.45}+\frac{500}{23.54}+\frac{500}{23.45}+\frac{1600}{23.52}+\frac{800}{22.06}+\frac{800}{22.06}\right]}$$

Fleet's target fuel economy standard = 23.7 mpg

Appendix A, Figure 2

Calculation of Manufacturer X's actual fuel economy value.

(Manufacturer's Light Truck Production for Applicable Model Year) / ((Group 1 Volume / Group 1 Fuel Economy) + ((Group 2 Volume / Group 2 Fuel Economy) + … + (Group 11 Volume / Group 11 Fuel Economy)) =

6700 / (800/27.1 + 200/27.6 + 300/23.9 + 400/23.7 + 400/23.5 + 400/23.6 + 500/22.7 + 500/22.5 + 1600/22.5 + 800/22.3 + 800/22.2) = 23.3

$$\frac{\text{Manufacturer's Light Truck Production for Applicable Model Year}}{\left[\frac{\text{Group1 Volume}}{\text{Group1 FuelEcon}}+\frac{\text{Group2 Volume}}{\text{Group2 FuelEcon}}+\frac{\text{Group3 Volume}}{\text{Group3 FuelEcon}}+\frac{\text{Group4 Volume}}{\text{Group4 FuelEcon}}+\frac{\text{Group5 Volume}}{\text{Group5 FuelEcon}}+\frac{\text{Group6 Volume}}{\text{Group6 FuelEcon}}+\frac{\text{Group7 Volume}}{\text{Group7 FuelEcon}}+\frac{\text{Group8 Volume}}{\text{Group8 FuelEcon}}+\frac{\text{Group9 Volume}}{\text{Group9 FuelEcon}}+\frac{\text{Group10 Volume}}{\text{Group10 FuelEcon}}+\frac{\text{Group11 Volume}}{\text{Group11 FuelEcon}}\right]}$$

$$\frac{6{,}700}{\left[\frac{800}{27.1}+\frac{200}{27.6}+\frac{300}{23.9}+\frac{400}{23.7}+\frac{400}{23.5}+\frac{400}{23.6}+\frac{500}{22.7}+\frac{500}{22.5}+\frac{1600}{22.5}+\frac{800}{22.3}+\frac{800}{22.2}\right]}$$

Fleet's actual fuel economy value = 23.3 mpg

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Note to Appendix A, Figure 2. Since the actual average fuel economy of Manufacturer X's fleet is 23.3 mpg, as compared to its required fuel economy level of 23.5 mpg, Manufacturer X did not comply with the CAFE standard for MY 2012 as set forth in section 533.5(i).

PART 536—TRANSFER AND TRADING OF FUEL ECONOMY CREDITS

■ 7. The authority citation for part 563 continues to read as follows:

Authority: Sec. 104, Pub. L. 110–140 (49 U.S.C. 32903); delegation of authority at 49 CFR 1.50.

■ 8. Amend § 536.3 by revising the definition of "Transfer" in paragraph (b) to read as follows:

§ 536.3 Definitions.

* * * * *

(b) * * *

Transfer means the application by a manufacturer of credits earned by that manufacturer in one compliance category or credits acquired be trade (and originally earned by another manufacturer in that category) to achieve compliance with fuel economy standards with respect to a different compliance category. For example, a manufacturer may purchase light truck credits from another manufacturer, and transfer them to achieve compliance in the manufacturer's domestically manufactured passenger car fleet. Subject to the credit transfer limitations of 49 U.S.C. 32903(g)(3), credits can also be transferred across compliance categories and banked or saved in that category to be carried forward or backwards later to address a credit shortfall.

* * * * *

■ 9. Amend § 536.4 by revising the values for the terms *VMTe* and *VMTu* in paragraph (c) to read as follows:

§ 536.4 Credits.

* * * * *

(c) * * *

VMTe = Lifetime vehicle miles traveled as provided in the following

table for the model year and compliance category in which the credit was earned.

VMTu = Lifetime vehicle miles traveled as provided in the following table for the model year and compliance category in which the credit is used for compliance.

Model year	Lifetime Vehicle Miles Traveled (VMT)				
	2012	2013	2014	2015	2016
Passenger Cars	177,238	177,366	178,652	180,497	182,134
Light Trucks	208,471	208,537	209,974	212,040	213,954

* * * * *

PART 537—AUTOMOTIVE FUEL ECONOMY REPORTS

■ 10. The authority citation for part 537 continues to read as follows:

Authority: 49 U.S.C. 32907, delegation of authority at 49 CFR 1.50.

■ 11. Amend § 537.5 by revising paragraph (c)(4) to read as follows:

§ 537.5 General requirements for reports.

* * * * *

(c) * * *

(4) Be submitted in 5 copies to: Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590, or submitted electronically to the following secure e-mail address: *cafe@dot.gov.* Electronic submissions should be provided in a pdf format.

* * * * *

§ 537.6 [Amended]

■ 12. Amend § 537.6 by removing paragraph (c)(1) and redesignating paragraph (c)(2) as paragraph (c).

■ 13. Amend § 537.7 by revising paragraphs (c)(4)(xvi)(A)(*4*) and (c)(4)(xvi)(B)(*4*) to read as follows:

§ 537.7 Pre-model year and mid-model year reports.

* * * * *

(c) * * *

(4) * * *

(xvi)(*A*) * * *

(*4*) Beginning model year 2010, front axle, rear axle and average track width as defined in 49 CFR 523.2,

* * * * *

(*B*) * * *

(*4*) Beginning model year 2010, front axle, rear axle and average track width as defined in 49 CFR 523.2,

* * * * *

■ 14. Amend § 537.8 by revising paragraph (c)(1) and removing and reserving paragraph (c)(2) to read as follows:

§ 537.8 Supplementary reports.

* * * * *

(c)(1) Each report required by paragraph (a)(1), (2), or (3) of this section must be submitted in accordance with § 537.5(c) not more than 45 days after the date on which the manufacturer determined, or could have determined with reasonable diligence, that a report is required under paragraph (a)(1), (2), or (3) of this section.

(2) [Reserved]

* * * * *

■ 15. Amend § 537.9 by revising paragraph (c) to read as follows:

§ 537.9 Determination of fuel economy values and average fuel economy.

* * * * *

(c) *Average fuel economy.* Average fuel economy must be based upon fuel economy values calculated under paragraph (b) of this section for each model type and must be calculated in accordance with subpart F of 40 CFR part 600, except that fuel economy values for running changes and for new base levels are required only for those changes made or base levels added before the average fuel economy is required to be submitted under this part.

* * * * *

PART 538—MANUFACTURING INCENTIVES FOR ALTERNATIVE FUEL VEHICLES

■ 16. The authority citation for part 538 continues to read as follows:

Authority: 49 U.S.C. 32901, 32905, and 32906; delegation of authority at 49 CFR 1.50.

■ 17. Revise § 538.1 to read as follows:

§ 538.1 Scope.

This part establishes minimum driving range criteria to aid in identifying passenger automobiles that are dual-fueled automobiles. It also establishes gallon equivalent measurements for gaseous fuels other than natural gas.

■ 18. Revise § 538.2 to read as follows:

§ 538.2 Purpose.

The purpose of this part is to specify one of the criteria in 49 U.S.C. chapter 329 "Automobile Fuel Economy" for identifying dual-fueled passenger automobiles that are manufactured in model years 1993 through 2019. The fuel economy of a qualifying vehicle is calculated in a special manner so as to encourage its production as a way of facilitating a manufacturer's compliance with the Corporate Average Fuel Economy standards set forth in part 531 of this chapter. The purpose is also to establish gallon equivalent measurements for gaseous fuels other than natural gas.

■ 19. Amend § 538.7 by revising paragraph (b)(1) to read as follows:

§ 538.7 Petitions for reduction of minimum driving range.

* * * * *

(b) * * *

(1) Be addressed to: Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590.

* * * * *

Dated: April 1, 2010.

Ray LaHood,

Secretary, Department of Transportation.

Dated: April 1, 2010.

Lisa P. Jackson,

Administrator, Environmental Protection Agency.

[FR Doc. 2010–8159 Filed 5–6–10; 8:45 am]

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Federal Register

Friday,
May 7, 2010

Part III

Department of Commerce

National Oceanic and Atmospheric Administration

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to an Exploration Drilling Program in the Chukchi Sea, AK; Notice

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XW14

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to an Exploration Drilling Program in the Chukchi Sea, AK

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS received an application from Shell Offshore Inc. (Shell) for an Incidental Harassment Authorization (IHA) to take marine mammals, by harassment, incidental to offshore exploration drilling on Outer Continental Shelf (OCS) leases in the Chukchi Sea, Alaska. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an IHA to Shell to take, by Level B harassment only, 12 species of marine mammals during the specified activity.

DATES: Comments and information must be received no later than June 7, 2010.

ADDRESSES: Comments on the application should be addressed to Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The mailbox address for providing e-mail comments is *PR1.0648-XW14@noaa.gov*. NMFS is not responsible for e-mail comments sent to addresses other than the one provided here. Comments sent via e-mail, including all attachments, must not exceed a 10-megabyte file size.

Instructions: All comments received are a part of the public record and will generally be posted to *http://www.nmfs.noaa.gov/pr/permits/incidental.htm* without change. All Personal Identifying Information (for example, name, address, *etc.*) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

A copy of the application may be obtained by writing to the address specified above, telephoning the contact listed below (*see* **FOR FURTHER INFORMATION CONTACT**), or visiting the Internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm.* The following associated documents are also available at the same Internet address: Shell's 2010 Exploration Drilling Communication Plan Chukchi Sea, Alaska, and Shell's 2010 Plan of Cooperation (POC) Camden Bay, Alaska. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Candace Nachman, Office of Protected Resources, NMFS, (301) 713–2289, ext 156.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "* * * an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

Except with respect to certain activities not pertinent here, the MMPA defines "harassment" as:

> any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild ["Level A harassment"]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering ["Level B harassment"].

Summary of Request

NMFS received an application on May 26, 2009, from Shell for the taking, by harassment, of marine mammals incidental to offshore exploration drilling on OCS leases in the Chukchi Sea, Alaska. NMFS reviewed Shell's application and identified a number of issues requiring further clarification. After addressing comments from NMFS, Shell modified its application and submitted a revised application on December 11, 2009. However, after some additional discussions regarding certain activities, NMFS determined that a second revision to the application was warranted. The latest revised application was submitted to NMFS on April 14, 2010. NMFS carefully evaluated Shell's application, including their analyses, and determined that the application is complete and that it is appropriate to make the necessary preliminary determinations pursuant to the MMPA. The April 14, 2010, application is the one available for public comment (*see* **ADDRESSES**) and considered by NMFS for this proposed IHA.

Shell intends to drill up to three exploration wells at five possible drill sites on seven leases at the prospects known as Burger, Crackerjack, and Southwest (SW) Shoebill on OCS leases offshore in the Chukchi Sea, Alaska, during the 2010 Arctic open-water season (July through October). Impacts to marine mammals may occur from noise produced by the drillship and supporting vessels and aircraft. Shell has requested an authorization to take 13 marine mammal species by Level B harassment. However, the narwhal (*Monodon monoceros*) is not expected to be found in the activity area. Therefore, NMFS is proposing to authorize take of 12 marine mammal species, by Level B harassment, incidental to Shell's offshore exploration drilling in the Chukchi Sea. These species include: beluga whale (*Delphinapterus leucas*); bowhead whale (*Balaena mysticetus*); gray whale (*Eschrichtius robustus*); killer whale (*Orcinus orca*); minke whale (*Balaenoptera acutorostrata*); fin whale (*Balaenoptera physalus*); humpback whale (*Megaptera novaeangliae*); harbor porpoise (*Phocoena phocoena*); bearded

seal (*Erignathus barbatus*); ringed seal (*Phoca hispida*); spotted seal (*P. largha*); and ribbon seal (*Histriophoca fasciata*).

Description of the Specified Activity

Shell plans to conduct an offshore exploration drilling program on U.S. Department of the Interior, Minerals Management Service (MMS) Alaska OCS leases located greater than 60 mi (97 km) from the Chukchi Sea coast during the 2010 open-water season. The leases were acquired during the Chukchi Sea Oil and Gas Lease Sale 193 held in February 2008. During the 2010 drilling program, Shell plans to drill up to three exploration wells at five possible drill sites on seven leases at the prospects known as Burger, Crackerjack, and SW Shoebill. See Figure 1–1 in Shell's application for the lease block and drill site locations (*see* **ADDRESSES**). All drilling is planned to be vertical.

All of the possible Chukchi Sea offshore drill sites are located between 64 and 124 mi (103 and 200 km) from the Chukchi coast in water depths between 142 and 149 ft (43.3 and 45.4 m). Table 2–1 in Shell's application provides the coordinates for the drill sites (*see* **ADDRESSES**). Shell plans to commence drilling at the Burger prospect as soon as ice, weather, and other conditions allow for safe drilling operations. In the event ice and weather conditions prevent the *Discoverer* from reaching the Burger prospect, Shell intends to mobilize its exploration operations to one of the alternative drill sites in the SW Shoebill or Crackerjack prospects.

The ice reinforced drillship *Discoverer* will be used to drill the wells. The *Discoverer* is 514 ft (156.7 m) long with a maximum height (above keel) of 274 ft (83.7 m). Additional rig specifications for the *Discoverer* can be found in Attachment A of Shell's application (*see* **ADDRESSES**). While on location at the drill sites, the *Discoverer* will be affixed to the seafloor using eight 7-ton Stevpris anchors arranged in a radial array.

During the 2010 drilling season, the *Discoverer* will be attended by a minimum of seven vessels that will be used for ice-management, anchor handling, oil spill response (OSR), refueling, resupply, and servicing of the drilling operations. The ice-management vessels will consist of an icebreaker and an anchor handler. Table 1–2 in Shell's application provides a list of the support vessels that will be used during the drilling program, as well as information about trip frequency and duration for each vessel.

Primary resupply between the drill sites and logistics facilities at Dutch Harbor will use a coastwise qualified offshore supply vessel. Some minor resupply is also planned to be conducted between the drill sites and Wainwright with a shallow water landing craft. An ice-capable OSR vessel will be dedicated to Chukchi Sea operations and remain in the vicinity of the drillship when drilling into liquid hydrocarbon zones. An OSR barge, with an associated tug, will be staged in the nearshore zone, and an OSR tanker will be staged to respond to a discharge and provide storage capability for recovered liquids, if necessary.

Shell's base plan is for the ice-management vessel, the *M/V Vladimir Ignatjuk,* and the anchor handler, the *M/V Nordica,* or similar vessels, to accompany the *Discoverer* traveling north from Dutch Harbor through the Bering Strait, on or about July 1, 2010, then into the Chukchi Sea, before arriving on location approximately July 4. Exploration drilling is expected to be complete by October 31. At the completion of the drilling season, one or two ice-management vessels, along with various support vessels, such as the OSR fleet, will accompany the *Discoverer* as it travels south out of the Chukchi Sea and through the Bering Strait to Dutch Harbor. Subject to ice conditions, alternate exit routes may be considered.

Shell plans to cease drilling on or before October 31, after which the *Discoverer* will exit the Alaskan Chukchi Sea. Shell anticipates that the exploration drilling program will require approximately 37 days per well, including mudline cellar construction. Therefore, if Shell is able to drill three exploration wells during the 2010 open-water season, it would require a total of 111 days. These estimates do not include any downtime for weather or other operational delays. Shell also assumes approximately 10 additional days will be needed for transit, drillship mobilization and mooring, drillship moves between locations, and drillship demobilization.

Activities associated with the 2010 Chukchi Sea exploration drilling program include operation of the *Discoverer,* associated support vessels, crew change support, and resupply. The *Discoverer* will remain at the location of the designated exploration drill sites except when mobilizing and demobilizing to and from the Chukchi Sea, transiting between drill sites, and temporarily moving off location if it is determined ice conditions require such a move to ensure the safety of personnel and/or the environment in accordance with Shell's Ice-management Plan (IMP). The anchor handler and OSR vessels will remain in close proximity to the drillship during drilling operations. The ice-management vessel will generally be working upwind of the drillship from 3–25 mi (4.8–40.2 km) away. Helicopters would be used to provide support for crew change, provision resupply, and any search-and-rescue operations during the drilling season.

Shell recognizes that the drilling program is located in an area that is characterized by active sea ice movement, ice scouring, and storm surges. In anticipation of potential ice hazards that may be encountered, Shell has developed and will implement an IMP to ensure real-time ice and weather forecasting is conducted in order to identify conditions that might put operations at risk and will modify its activities accordingly. The IMP also contains ice threat classification levels depending on the time available to suspend drilling operations, secure the well, and escape from advancing hazardous ice. Real-time ice and weather forecasting will be available to operations personnel for planning purposes and to alert the fleet of impending hazardous ice and weather conditions. Ice and weather forecasting is provided by Shell's Ice and Weather Advisory Center. The center is continuously manned by experienced personnel, who rely on a number of data sources for ice forecasting and tracking, including:

- *Radarsat and Envisat data*—satellites with Synthetic Aperture Radar, providing all-weather imagery of ice conditions with very high resolution;
- *Moderate Resolution Imaging Spectroradiometer*—a satellite providing lower resolution visual and near infrared imagery;
- *Aerial reconnaissance*—provided by specially deployed fixed wing or rotary wing aircraft for confirmation of ice conditions and position;
- Reports from ice specialists on the ice-management and anchor handling vessels and from the ice observer on the drillship;
- Incidental ice data provided by commercial ships transiting the area; and
- Information from NOAA ice centers and the University of Colorado.

The ice-management/anchor handling vessels would manage the ice by deflecting any ice floes that could affect the *Discoverer* when it is drilling and would also handle the *Discoverer's* anchors during connection to and separation from the seafloor. The ice floe frequency and intensity are unpredictable and could range from no

ice to ice sufficiently dense that the fleet has insufficient capacity to continue operating, and the *Discoverer* would need to disconnect from its anchors and move off site. If ice is present, ice-management activities may be necessary in early July and towards the end of operations in late October, but it is not expected to be needed throughout the proposed drilling season. Shell has indicated that when ice is present at the drill site, ice disturbance will be limited to the minimum needed to allow drilling to continue. First-year ice will be the type most likely to be encountered. The ice-management vessels will be tasked with managing the ice so that it will flow easily around and past the *Discoverer* without building up in front of it. This type of ice is managed by the ice-management vessel continually moving back and forth across the drift line, directly up-drift of the *Discoverer* and making turns at both ends. During ice-management, the vessel's propeller is rotating at approximately 15–20 percent of the vessel's propeller rotation capacity. Ice-management occurs with slow movements of the vessel using lower power and therefore slower propeller rotation speed (*i.e.,* lower cavitation), allowing for fewer repositions of the vessel, thereby reducing cavitation effects in the water. Occasionally, there may be multi-year ice ridges that would be managed at a much slower speed than that used to manage first-year ice. Shell has indicated that they do not have any intention of breaking ice with the ice-management vessels but, rather, intend to push it out of the area as described here. Should ice become so prevalent in the drilling area that it is difficult to continue operations without the breaking of ice, Shell has indicated that they would stop operations and move off site instead of breaking ice (S. Childs, Shell, 2010, pers. comm.). Shell has indicated that ice breaking would only be conducted if the ice poses an immediate safety hazard at the drill sites.

Potential impacts to marine mammals could occur from the noise produced by the drillship and its support vessels and aircraft. The drillship produces continuous noise into the marine environment. NMFS currently uses a threshold of 120 dB re 1 μPa (rms) for the onset of Level B harassment from continuous sound sources. Sound measurements from the *Discoverer* have not previously been conducted in the Arctic or elsewhere; however, sounds from a similar drillship, the *Northern Explorer II,* were measured at two different times and locations in the Beaufort Sea (Miles *et al.,* 1987; Greene, 1987a,b). In both cases, a support vessel was present in the vicinity of the drillship, thus providing an aggregate source level for modeling the combined drilling activities. The underwater received sound pressure level (SPL) in the 20–1,000 Hz band for drilling activity by the *Northern Explorer II,* including a nearby support vessel, was 134 dB re 1 μPa (rms) at 0.1 mi (0.2 km; Greene, 1987b). The back-propagated source levels (175 dB re 1 μPa at 1 m) from these measurements were used as a proxy for modeling the sounds likely to be produced by drilling activities from the *Discoverer.* NMFS has determined that the sound measurements for the *Northern Explorer II* constitute a good proxy for estimating sound radii for the *Discoverer.* Sound propagation measurements will be performed on the *Discoverer* in 2010 once on location near the Chukchi Sea drill sites. The results of those measurements will be used during the drilling season to implement proposed mitigation measures described later in this document (*see* the "Proposed Mitigation" section).

Although there will be several support vessels in the drilling operations area, NMFS considers the possibility of collisions with marine mammals highly unlikely. Once on location, the majority of the support vessels will remain in the area of the drillship throughout the 2010 drilling season and will not be making trips between the shorebase and the offshore vessels. Aircraft travel would be controlled by Federal Aviation Administration approved flight paths. Shell has agreed to a flight altitude of 1,500 ft (457 m; except during takeoffs and landings or during emergencies) to minimize impacts on marine mammals. As the crew change/resupply activities are considered part of normal vessel traffic and are not anticipated to impact marine mammals in a manner that would rise to the level of taking, those activities are not considered further in this document. Additionally, ice-management activities are not anticipated to impact marine mammals in a manner that would rise to the level of taking. This is based on the fact that the propeller rotation (*i.e.,* cavitation) will be similar to that of vessels under normal operations and will not be used at 100 percent power as is the case in other situations rising to the level of taking (*e.g.,* thruster use for dynamic positioning at terminals).

Description of Marine Mammals in the Area of the Specified Activity

The Chukchi Sea supports a diverse assemblage of marine mammals, including: bowhead, gray, beluga, killer, minke, humpback, and fin whales; harbor porpoise; ringed, ribbon, spotted, and bearded seals; narwhals; polar bears (*Ursus maritimus*); and walruses (*Odobenus rosmarus divergens; see* Table 3–1 in Shell's application). The bowhead, humpback, and fin whales are listed as "endangered" under the Endangered Species Act (ESA) and as depleted under the MMPA. Certain stocks or populations of gray, beluga, and killer whales and spotted seals are listed as endangered or are proposed for listing under the ESA; however, none of those stocks or populations occur in the proposed activity area. Additionally, the ribbon seal is considered a "species of concern" under the ESA, and the bearded and ringed seals are "candidate species" under the ESA, meaning they are currently being considered for listing. Both the walrus and the polar bear are managed by the U.S. Fish and Wildlife Service (USFWS) and are not considered further in this proposed IHA notice.

Of these species, 12 are expected to occur in the area of Shell's proposed operations. These species include: the bowhead, gray, humpback, minke, fin, killer, and beluga whales; harbor porpoise; and the ringed, spotted, bearded, and ribbon seals. Beluga, bowhead, and gray whales, harbor porpoise, and ringed, bearded, and spotted seals are anticipated to be encountered more than the other marine mammal species mentioned here. The marine mammal species that is likely to be encountered most widely (in space and time) throughout the period of the proposed drilling program is the ringed seal. Encounters with bowhead and gray whales are expected to be limited to particular seasons, as discussed later in this document. Where available, Shell used density estimates from peer-reviewed literature in the application. In cases where density estimates were not readily available in the peer-reviewed literature, Shell used other methods to derive the estimates. NMFS reviewed the density estimate descriptions and articles from which estimates were derived and requested additional information to better explain the density estimates presented by Shell in its application. This additional information was included in the revised IHA application. The explanation for those derivations and the actual density estimates are described later in this

document (*see* the "Estimated Take by Incidental Harassment" section).

The narwhal occurs in Canadian waters and occasionally in the Alaskan Beaufort Sea and the Chukchi Sea, but it is considered extralimital in U.S. waters and is not expected to be encountered. There are scattered records of narwhal in Alaskan waters, including reports by subsistence hunters, where the species is considered extralimital (Reeves *et al.,* 2002). Due to the rarity of this species in the proposed project area and the remote chance it would be affected by Shell's proposed Chukchi Sea drilling activities, this species is not discussed further in this proposed IHA notice.

Shell's application contains information on the status, distribution, seasonal distribution, and abundance of each of the species under NMFS jurisdiction mentioned in this document. When reviewing the application, NMFS determined that the species descriptions provided by Shell correctly characterized the status, distribution, seasonal distribution, and abundance of each species. Please refer to the application for that information (*see* **ADDRESSES**). Additional information can also be found in the NMFS Stock Assessment Reports (SAR). The Alaska 2009 SAR is available at: *http://www.nmfs.noaa.gov/pr/pdfs/sars/ak2009.pdf*.

Brief Background on Marine Mammal Hearing

When considering the influence of various kinds of sound on the marine environment, it is necessary to understand that different kinds of marine life are sensitive to different frequencies of sound. Based on available behavioral data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data, Southall *et al.* (2007) designate "functional hearing groups" for marine mammals and estimate the lower and upper frequencies of functional hearing of the groups. The functional groups and the associated frequencies are indicated below (though, animals are less sensitive to sounds at the outer edge of their functional range and most sensitive to sounds of frequencies within a smaller range somewhere in the middle of their functional hearing range):

- *Low frequency cetaceans (13 species of mysticetes):* functional hearing is estimated to occur between approximately 7 Hz and 22 kHz;
- *Mid-frequency cetaceans (32 species of dolphins, six species of larger toothed whales, and 19 species of beaked and bottlenose whales):* functional hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- *High frequency cetaceans (eight species of true porpoises, six species of river dolphins, Kogia, the franciscana, and four species of cephalorhynchids):* functional hearing is estimated to occur between approximately 200 Hz and 180 kHz; and
- *Pinnipeds in Water:* functional hearing is estimated to occur between approximately 75 Hz and 75 kHz, with the greatest sensitivity between approximately 700 Hz and 20 kHz.

As mentioned previously in this document, 12 marine mammal species (four pinniped and eight cetacean species) are likely to occur in the proposed drilling area. Of the eight cetacean species likely to occur in Shell's project area, five are classified as low frequency cetaceans (*i.e.,* bowhead, gray, humpback, minke, and fin whales), two are classified as mid-frequency cetaceans (*i.e.,* beluga and killer whales), and one is classified as a high-frequency cetacean (*i.e.,* harbor porpoise) (Southall *et al.,* 2007).

Potential Effects of the Specified Activity on Marine Mammals

Potential effects of Shell's proposed drilling program in the Chukchi Sea on marine mammals would most likely be acoustic in nature. Petroleum development and associated activities introduce sound into the marine environment. Potential acoustic effects on marine mammals relate to sound produced by drilling activity, vessels, and aircraft. The potential effects of sound from the proposed exploratory drilling program might include one or more of the following: tolerance; masking of natural sounds; behavioral disturbance; non-auditory physical effects; and, at least in theory, temporary or permanent hearing impairment (Richardson *et al.,* 1995a). However, for reasons discussed later in this document, it is unlikely that there would be any cases of temporary, or especially permanent, hearing impairment resulting from these activities. As outlined in previous NMFS documents, the effects of noise on marine mammals are highly variable, and can be categorized as follows (based on Richardson *et al.,* 1995a):

(1) The noise may be too weak to be heard at the location of the animal (*i.e.,* lower than the prevailing ambient noise level, the hearing threshold of the animal at relevant frequencies, or both);

(2) The noise may be audible but not strong enough to elicit any overt behavioral response;

(3) The noise may elicit reactions of variable conspicuousness and variable relevance to the well being of the marine mammal; these can range from temporary alert responses to active avoidance reactions such as vacating an area at least until the noise event ceases but potentially for longer periods of time;

(4) Upon repeated exposure, a marine mammal may exhibit diminishing responsiveness (habituation), or disturbance effects may persist; the latter is most likely with sounds that are highly variable in characteristics, infrequent, and unpredictable in occurrence, and associated with situations that a marine mammal perceives as a threat;

(5) Any anthropogenic noise that is strong enough to be heard has the potential to reduce (mask) the ability of a marine mammal to hear natural sounds at similar frequencies, including calls from conspecifics, and underwater environmental sounds such as surf noise;

(6) If mammals remain in an area because it is important for feeding, breeding, or some other biologically important purpose even though there is chronic exposure to noise, it is possible that there could be noise-induced physiological stress; this might in turn have negative effects on the well-being or reproduction of the animals involved; and

(7) Very strong sounds have the potential to cause a temporary or permanent reduction in hearing sensitivity. In terrestrial mammals, and presumably marine mammals, received sound levels must far exceed the animal's hearing threshold for there to be any temporary threshold shift (TTS) in its hearing ability. For transient sounds, the sound level necessary to cause TTS is inversely related to the duration of the sound. Received sound levels must be even higher for there to be risk of permanent hearing impairment. In addition, intense acoustic or explosive events may cause trauma to tissues associated with organs vital for hearing, sound production, respiration and other functions. This trauma may include minor to severe hemorrhage.

Drilling Sounds

Exploratory drilling will be conducted from a vessel specifically designed for such operations in the Arctic. Underwater sound propagation results from the use of generators, drilling machinery, and the rig itself. Received sound levels during vessel-based operations may fluctuate depending on the specific type of activity at a given

time and aspect from the vessel. Underwater sound levels may also depend on the specific equipment in operation. Lower sound levels have been reported during well logging than during drilling operations (Greene, 1987b), and underwater sound appeared to be lower at the bow and stern aspects than at the beam (Greene, 1987a).

Most drilling sounds generated from vessel-based operations occur at relatively low frequencies below 600 Hz although tones up to 1,850 Hz were recorded by Greene (1987a) during drilling operations in the Beaufort Sea. At a range of 558 ft (170 m) the 20–1000 Hz band level was 122–125 dB for the drillship *Explorer I.* Underwater sound levels were slightly higher (134 dB) during drilling activity from the *Northern Explorer II* at a range of 656 ft (200 m), although tones were only recorded below 600 Hz. Underwater sound measurements from the *Kulluk* at 0.62 mi (1 km) were higher (143 dB) than from the other two vessels. Shell used the measurements from the *Northern Explorer II* to model the various sound radii (which are discussed later in this document) for the *Discoverer.* Once on location at the drill sites in the Chukchi Sea, Shell plans to take measurements of the *Discoverer* to quantify the absolute sound levels produced by drilling and to monitor their variations with time, distance, and direction from the drillship. Based on the similarities of the two drillships, NMFS has preliminarily determined that the radii produced by the *Discoverer* would be similar to those recorded for the *Northern Explorer II.*

Vessel Sounds

In addition to the drillship, various types of vessels will be used in support of the operations, including ice-management vessels, anchor handlers, and oil-spill response vessels. Sounds from boats and vessels have been reported extensively (Greene and Moore, 1995; Blackwell and Greene, 2002, 2005, 2006). Numerous measurements of underwater vessel sound have been performed in support of recent industry activity in the Chukchi and Beaufort seas. Results of these measurements were reported in various 90-day and comprehensive reports since 2007 (*e.g.,* Aerts *et al.,* 2008; Hauser *et al.,* 2008; Brueggeman, 2009; Ireland *et al.,* 2009). For example, Garner and Hannay (2009) estimated sound pressure levels of 100 dB at distances ranging from approximately 1.5 to 2.3 mi (2.4 to 3.7 km) from various types of barges. MacDonald *et al.* (2008) estimated higher underwater SPLs from the seismic vessel *Gilavar* of 120 dB at approximately 13 mi (21 km) from the source, although the sound level was only 150 dB at 85 ft (26 m) from the vessel. Like other industry-generated sound, underwater sound from vessels is generally at relatively low frequencies.

The primary sources of sounds from all vessel classes are propeller cavitation, propeller singing, and propulsion or other machinery. Propeller cavitation is usually the dominant noise source for vessels (Ross, 1976). Propeller cavitation and singing are produced outside the hull, whereas propulsion or other machinery noise originates inside the hull. There are additional sounds produced by vessel activity, such as pumps, generators, flow noise from water passing over the hull, and bubbles breaking in the wake. Icebreakers contribute greater sound levels during ice-breaking activities than ships of similar size during normal operation in open water (Richardson *et al.,* 1995a). This higher sound production results from the greater amount of power and propeller cavitation required when operating in thick ice.

Sound levels during ice-management activities would not be as intense as during icebreaking, and the resulting effects to marine species would be less significant in comparison. During ice-management, the vessel's propeller is rotating at approximately 15–20 percent of the vessel's propeller rotation capacity. Instead of actually breaking ice, during ice-management, the vessel redirects and repositions the ice by pushing it away from the direction of the drillship at slow speeds so that the ice floe does not slip past the vessel bow. Basically, ice-management occurs at slower speed, lower power, and slower propeller rotation speed (*i.e.,* lower cavitation), allowing for fewer repositions of the vessel, thereby reducing cavitation effects in the water compared to those that would occur during icebreaking. Once on location at the drill sites in the Chukchi Sea, Shell plans to measure the sound levels produced by vessels operating in support of drilling operations. These vessels will include crew change vessels, tugs, ice-management vessels, and spill response vessels.

Aircraft Sound

Helicopters may be used for personnel and equipment transport to and from the drillship, as well as any search-and-rescue operations that may be necessary. Under calm conditions, rotor and engine sounds are coupled into the water within a 26° cone beneath the aircraft. Some of the sound will transmit beyond the immediate area, and some sound will enter the water outside the 26° area when the sea surface is rough. However, scattering and absorption will limit lateral propagation in the shallow water.

Dominant tones in noise spectra from helicopters are generally below 500 Hz (Greene and Moore, 1995). Harmonics of the main rotor and tail rotor usually dominate the sound from helicopters; however, many additional tones associated with the engines and other rotating parts are sometimes present.

Because of doppler shift effects, the frequencies of tones received at a stationary site diminish when an aircraft passes overhead. The apparent frequency is increased while the aircraft approaches and is reduced while it moves away.

Aircraft flyovers are not heard underwater for very long, especially when compared to how long they are heard in air as the aircraft approaches an observer. Helicopters flying to and from the drillship will generally maintain straight-line routes at altitudes of at least 1,000 ft (305 m), thereby limiting the received levels at and below the surface.

Tolerance

Numerous studies have shown that underwater sounds from industry activities are often readily detectable by marine mammals in the water at distances of many kilometers. Numerous studies have also shown that marine mammals at distances more than a few kilometers away often show no apparent response to industry activities of various types (Miller *et al.,* 2005). This is often true even in cases when the sounds must be readily audible to the animals based on measured received levels and the hearing sensitivity of that mammal group. Although various baleen whales, toothed whales, and (less frequently) pinnipeds have been shown to react behaviorally to underwater sound such as airgun pulses or vessels under some conditions, at other times mammals of all three types have shown no overt reactions (*e.g.,* Malme *et al.,* 1986; Richardson *et al.,* 1995; Madsen and Mohl, 2000; Croll *et al.,* 2001; Jacobs and Terhune, 2002; Madsen *et al.,* 2002; Miller *et al.,* 2005). In general, pinnipeds and small odontocetes seem to be more tolerant of exposure to some types of underwater sound than are baleen whales. Richardson *et al.* (1995a) found that vessel noise does not seem to strongly affect pinnipeds that are already in the water. Richardson *et al.* (1995a) went on to explain that seals on haul-outs sometimes respond strongly to the presence of vessels and at other times appear to show considerable

tolerance of vessels, and (Brueggeman *et al.,* 1992; cited in Richardson *et al.,* 1995a) observed ringed seals hauled out on ice pans displaying short-term escape reactions when a ship approached within 0.25–0.5 mi (0.4–0.8 km).

Masking

The term "masking" refers to the obscuring of sounds of interest by interfering sounds, generally at similar frequencies. Masking effects of underwater sounds on marine mammal calls and other natural sounds are expected to be limited. For example, beluga whales primarily use high-frequency sounds to communicate and locate prey; therefore, masking by low-frequency sounds associated with drilling activities is not expected to occur (Gales, 1982, as cited in Shell, 2009). If the distance between communicating whales does not exceed their distance from the drilling activity, the likelihood of potential impacts from masking would be low (Gales, 1982, as cited in Shell, 2009). At distances greater than 660–1,300 ft (200–400 m), recorded sounds from drilling activities did not affect behavior of beluga whales, even though the sound energy level and frequency were such that it could be heard several kilometers away (Richardson *et al.,* 1995b). This exposure resulted in whales being deflected from the sound energy and changing behavior. These minor changes are not expected to affect the beluga whale population (Richardson *et al.,* 1991; Richard *et al.,* 1998). Brewer *et al.* (1993) observed belugas within 2.3 mi (3.7 km) of the drilling unit *Kulluk* during drilling; however, the authors do not describe any behaviors that may have been exhibited by those animals. Please refer to the Arctic Multiple-Sale Draft Environmental Impact Statement (USDOI MMS, 2008), available on the Internet at: *http://www.mms.gov/alaska/ref/EIS%20EA/ArcticMultiSale_209/_DEIS.htm,* for more detailed information.

There is evidence of other marine mammal species continuing to call in the presence of industrial activity. For example, bowhead whale calls are frequently detected in the presence of seismic pulses, although the number of calls detected may sometimes be reduced (Richardson *et al.,* 1986; Greene *et al.,* 1999; Blackwell *et al.,* 2009). Additionally, annual acoustical monitoring near BP's Northstar production facility during the fall bowhead migration westward through the Beaufort Sea has recorded thousands of calls each year (for examples, *see* Richardson *et al.,* 2007; Aerts and Richardson, 2008). Construction, maintenance, and operational activities have been occurring from this facility for nearly 10 years. To compensate and reduce masking, some mysticetes may alter the frequencies of their communication sounds (Richardson *et al.,* 1995a; Parks *et al.,* 2007). Masking processes in baleen whales are not amenable to laboratory study, and no direct measurements on hearing sensitivity are available for these species. It is not currently possible to determine with precision the potential consequences of temporary or local background noise levels. However, Parks *et al.* (2007) found that right whales altered their vocalizations, possibly in response to background noise levels. For species that can hear over a relatively broad frequency range, as is presumed to be the case for mysticetes, a narrow band source may only cause partial masking. Richardson *et al.* (1995a) note that a bowhead whale 12.4 mi (20 km) from a human sound source, such as that produced during oil and gas industry activities, might hear strong calls from other whales within approximately 12.4 mi (20 km), and a whale 3.1 mi (5 km) from the source might hear strong calls from whales within approximately 3.1 mi (5 km). Additionally, masking is more likely to occur closer to a sound source, and distant anthropogenic sound is less likely to mask short-distance acoustic communication (Richardson *et al.,* 1995a).

Cummings *et al.* (1984) subjected breeding ringed seals to recordings of industrial sounds. The authors did not document any impacts to ringed seal vocalizations as a result of exposure to the recordings.

Although some masking by marine mammal species in the area may occur, the extent of the masking interference will depend on the spatial relationship of the animal and Shell's activity. If, as described later in this document, certain species avoid the proposed drilling locations, impacts from masking will be low.

Behavioral Disturbance Reactions

Behavioral responses to sound are highly variable and context-specific. Many different variables can influence an animal's perception of and response to (in both nature and magnitude) an acoustic event. An animal's prior experience with a sound or sound source affects whether it is less likely (habituation) or more likely (sensitization) to respond to certain sounds in the future (animals can also be innately pre-disposed to respond to certain sounds in certain ways; Southall *et al.,* 2007). Related to the sound itself, the perceived nearness of the sound, bearing of the sound (*approaching* vs. *retreating),* similarity of a sound to biologically relevant sounds in the animal's environment (*i.e.,* calls of predators, prey, or conspecifics), and familiarity of the sound may affect the way an animal responds to the sound (Southall *et al.,* 2007). Individuals (of different age, gender, reproductive status, *etc.*) among most populations will have variable hearing capabilities and differing behavioral sensitivities to sounds that will be affected by prior conditioning, experience, and current activities of those individuals. Often, specific acoustic features of the sound and contextual variables (*i.e.,* proximity, duration, or recurrence of the sound or the current behavior that the marine mammal is engaged in or its prior experience), as well as entirely separate factors such as the physical presence of a nearby vessel, may be more relevant to the animal's response than the received level alone.

Exposure of marine mammals to sound sources can result in (but is not limited to) no response or any of the following observable responses: increased alertness; orientation or attraction to a sound source; vocal modifications; cessation of feeding; cessation of social interaction; alteration of movement or diving behavior; avoidance; habitat abandonment (temporary or permanent); and, in severe cases, panic, flight, stampede, or stranding, potentially resulting in death (Southall *et al.,* 2007). On a related note, many animals perform vital functions, such as feeding, resting, traveling, and socializing, on a diel cycle (24-hr cycle). Behavioral reactions to noise exposure (such as disruption of critical life functions, displacement, or avoidance of important habitat) are more likely to be significant if they last more than one diel cycle or recur on subsequent days (Southall *et al.,* 2007). Consequently, a behavioral response lasting less than one day and not recurring on subsequent days is not considered particularly severe unless it could directly affect reproduction or survival (Southall *et al.,* 2007).

Detailed studies regarding responses to anthropogenic sound have been conducted on humpback, gray, and bowhead whales and ringed seals. Less detailed data are available for some other species of baleen whales, sperm whales, small toothed whales, and sea otters. The following sub-sections provide examples of behavioral responses that provide an idea of the variability that would be expected given the different sensitivities of marine

mammal species to sound and the wide range of potential acoustic sources to which a marine mammal may be exposed.

Baleen Whales—Baleen whale responses to pulsed sound (*e.g.,* seismic airguns) have been studied more thoroughly than responses to continuous sound (*e.g.,* drillships). Baleen whales generally tend to avoid operating airguns, but avoidance radii are quite variable. Whales are often reported to show no overt reactions to pulses from large arrays of airguns at distances beyond a few kilometers, even though the airgun pulses remain well above ambient noise levels out to much greater distances (Miller *et al.,* 2005). However, baleen whales exposed to strong noise pulses often react by deviating from their normal migration route (Richardson *et al.,* 1999). Migrating gray and bowhead whales were observed avoiding the sound source by displacing their migration route to varying degrees but within the natural boundaries of the migration corridors (Schick and Urban, 2000; Richardson *et al.,* 1999; Malme *et al.,* 1983).

Richardson *et al.* (1995b) reported changes in surfacing and respiration behavior and the occurrence of turns during surfacing in bowhead whales exposed to playback of underwater sound from drilling activities. These behavioral effects were localized and occurred at distances up to 1.2–2.5 mi (2–4 km). Some bowheads appeared to divert from their migratory path after exposure to projected icebreaker sounds. Other bowheads, however, tolerated projected icebreaker sound at levels 20 dB and more above ambient sound levels. The source level of the projected sound, however, was much less than that of an actual icebreaker, and reaction distances to actual ice breaking may be much greater than those reported here for projected sounds.

Brewer *et al.* (1993) and Hall *et al.* (1994) reported numerous sightings of marine mammals including bowhead whales in the vicinity of offshore drilling operations in the Beaufort Sea. One bowhead whale sighting was reported within approximately 1,312 ft (400 m) of a drilling vessel although other sightings were at much greater distances. Few bowheads were recorded near industrial activities by aerial observers, but observations by surface observers suggested that bowheads may have been closer to industrial activities than was suggested by results of aerial observations.

Richardson *et al.* (2008) reported a slight change in the distribution of bowhead whale calls in response to operational sounds on BP's Northstar Island. The southern edge of the call distribution ranged from 0.47 to 1.46 mi (0.76 to 2.35 km) farther offshore, apparently in response to industrial sound levels. This result, however, was only achieved after intensive statistical analyses, and it is not clear that this represented a biologically significant effect.

Patenaude *et al.* (2002) reported fewer behavioral responses to aircraft overflights by bowhead compared to beluga whales. Behaviors classified as reactions consisted of short surfacings, immediate dives or turns, changes in behavior state, vigorous swimming, and breaching. Most bowhead whale reactions resulted from exposure to helicopter activity and little response to fixed-wing aircraft was observed. Most reactions occurred when the helicopter was at altitudes ≤492 ft (150 m) and lateral distances ≤820 ft (250 m; Nowacek *et al.,* 2007). Restriction on aircraft altitude will be part of the proposed mitigation measures (described in the "Proposed Mitigation" section later in this document) during the proposed drilling activities, and overflights are likely to have little or no disturbance effects on baleen whales. Any disturbance that may occur would likely be temporary and localized.

Southall *et al.* (2007, Appendix C) reviewed a number of papers describing the responses of marine mammals to non-pulsed sound, such as that produced during exploratory drilling operations. In general, little or no response was observed in animals exposed at received levels from 90–120 dB re 1 μPa (rms). Probability of avoidance and other behavioral effects increased when received levels were from 120–160 dB re 1 μPa (rms). Some of the relevant reviews contained in Southall *et al.* (2007) are summarized next.

Baker *et al.* (1982) reported some avoidance by humpback whales to vessel noise when received levels were 110–120 dB (rms) and clear avoidance at 120–140 dB (sound measurements were not provided by Baker but were based on measurements of identical vessels by Miles and Malme, 1983).

Malme *et al.* (1983, 1984) used playbacks of sounds from helicopter overflight and drilling rigs and platforms to study behavioral effects on migrating gray whales. Received levels exceeding 120 dB induced avoidance reactions. Malme *et al.* (1984) calculated 10 percent, 50 percent, and 90 percent probabilities of gray whale avoidance reactions at received levels of 110, 120, and 130 dB, respectively. Malme *et al.* (1986) observed the behavior of feeding gray whales during four experimental playbacks of drilling sounds (50 to 315 Hz; 21-min overall duration and 10 percent duty cycle; source levels of 156–162 dB). In two cases for received levels of 100–110 dB, no behavioral reaction was observed. However, avoidance behavior was observed in two cases where received levels were 110–120 dB.

Richardson *et al.* (1990) performed 12 playback experiments in which bowhead whales in the Alaskan Arctic were exposed to drilling sounds. Whales generally did not respond to exposures in the 100 to 130 dB range, although there was some indication of minor behavioral changes in several instances.

McCauley *et al.* (1996) reported several cases of humpback whales responding to vessels in Hervey Bay, Australia. Results indicated clear avoidance at received levels between 118 to 124 dB in three cases for which response and received levels were observed/measured.

Palka and Hammond (2001) analyzed line transect census data in which the orientation and distance off transect line were reported for large numbers of minke whales. The authors developed a method to account for effects of animal movement in response to sighting platforms. Minor changes in locomotion speed, direction, and/or diving profile were reported at ranges from 1,847 to 2,352 ft (563 to 717 m) at received levels of 110 to 120 dB.

Biassoni *et al.* (2000) and Miller *et al.* (2000) reported behavioral observations for humpback whales exposed to a low-frequency sonar stimulus (160- to 330-Hz frequency band; 42-s tonal signal repeated every 6 min; source levels 170 to 200 dB) during playback experiments. Exposure to measured received levels ranging from 120 to 150 dB resulted in variability in humpback singing behavior. Croll *et al.* (2001) investigated responses of foraging fin and blue whales to the same low frequency active sonar stimulus off southern California. Playbacks and control intervals with no transmission were used to investigate behavior and distribution on time scales of several weeks and spatial scales of tens of kilometers. The general conclusion was that whales remained feeding within a region for which 12 to 30 percent of exposures exceeded 140 dB.

Frankel and Clark (1998) conducted playback experiments with wintering humpback whales using a single speaker producing a low-frequency "M-sequence" (sine wave with multiple-phase reversals) signal in the 60 to 90 Hz band with output of 172 dB at 1 m. For 11 playbacks, exposures were

between 120 and 130 dB re 1 μPa (rms) and included sufficient information regarding individual responses. During eight of the trials, there were no measurable differences in tracks or bearings relative to control conditions, whereas on three occasions, whales either moved slightly away from (n = 1) or towards (n = 2) the playback speaker during exposure. The presence of the source vessel itself had a greater effect than did the M-sequence playback.

Finally, Nowacek *et al.* (2004) used controlled exposures to demonstrate behavioral reactions of northern right whales to various non-pulse sounds. Playback stimuli included ship noise, social sounds of conspecifics, and a complex, 18-min "alert" sound consisting of repetitions of three different artificial signals. Ten whales were tagged with calibrated instruments that measured received sound characteristics and concurrent animal movements in three dimensions. Five out of six exposed whales reacted strongly to alert signals at measured received levels between 130 and 150 dB (*i.e.,* ceased foraging and swam rapidly to the surface). Two of these individuals were not exposed to ship noise, and the other four were exposed to both stimuli. These whales reacted mildly to conspecific signals. Seven whales, including the four exposed to the alert stimulus, had no measurable response to either ship sounds or actual vessel noise.

Toothed Whales—Most toothed whales have the greatest hearing sensitivity at frequencies much higher than that of baleen whales and may be less responsive to low-frequency sound commonly associated with oil and gas industry exploratory drilling activities. Richardson *et al.* (1995b) reported that beluga whales did not show any apparent reaction to playback of underwater drilling sounds at distances greater than 656–1,312 ft (200–400 m). Reactions included slowing down, milling, or reversal of course after which the whales continued past the projector, sometimes within 164–328 ft (50–100 m). The authors concluded (based on a small sample size) that the playback of drilling sounds had no biologically significant effects on migration routes of beluga whales migrating through pack ice and along the seaward side of the nearshore lead east of Pt. Barrow in spring.

At least six of 17 groups of beluga whales appeared to alter their migration path in response to underwater playbacks of icebreaker sound (Richardson *et al.,* 1995b). Received levels from the icebreaker playback were estimated at 78–84 dB in the ⅓-octave band centered at 5,000 Hz, or 8–14 dB above ambient. If beluga whales reacted to an actual icebreaker at received levels of 80 dB, reactions would be expected to occur at distances on the order of 6.2 mi (10 km). Finley *et al.* (1990) also reported beluga avoidance of icebreaker activities in the Canadian High Arctic at distances of 22–31 mi (35–50 km). In addition to avoidance, changes in dive behavior and pod integrity were also noted. However, while the *Vladimir Ignatjuk* (an icebreaker) is anticipated to be one of the vessels attending the *Discoverer,* it will only be conducting ice-management activities (which were described in the "Description of the Specified Activity" section earlier in this document) and not physical breaking of ice. Thus, NMFS does not anticipate that marine mammals would exhibit the types of behavioral reactions as those noted in the aforementioned studies.

Patenaude *et al.* (2002) reported that beluga whales appeared to be more responsive to aircraft overflights than bowhead whales. Changes were observed in diving and respiration behavior, and some whales veered away when a helicopter passed at ≤820 ft (250 m) lateral distance at altitudes up to 492 ft (150 m). However, some belugas showed no reaction to the helicopter. Belugas appeared to show less response to fixed-wing aircraft than to helicopter overflights.

In reviewing responses of cetaceans with best hearing in mid-frequency ranges, which includes toothed whales, Southall *et al.* (2007) reported that combined field and laboratory data for mid-frequency cetaceans exposed to non-pulse sounds did not lead to a clear conclusion about received levels coincident with various behavioral responses. In some settings, individuals in the field showed profound (significant) behavioral responses to exposures from 90 to 120 dB, while others failed to exhibit such responses for exposure to received levels from 120 to 150 dB. Contextual variables other than exposure received level, and probable species differences, are the likely reasons for this variability. Context, including the fact that captive subjects were often directly reinforced with food for tolerating noise exposure, may also explain why there was great disparity in results from field and laboratory conditions—exposures in captive settings generally exceeded 170 dB before inducing behavioral responses. A summary of some of the relevant material reviewed by Southall *et al.* (2007) is next.

LGL and Greeneridge (1986) and Finley *et al.* (1990) documented belugas and narwhals congregated near ice edges reacting to the approach and passage of ice-breaking ships. Beluga whales responded to oncoming vessels by (1) fleeing at speeds of up to 12.4 mi/hr (20 km/hr) from distances of 12.4–50 mi (20–80 km), (2) abandoning normal pod structure, and (3) modifying vocal behavior and/or emitting alarm calls. Narwhals, in contrast, generally demonstrated a "freeze" response, lying motionless or swimming slowly away (as far as 23 mi [37 km] down the ice edge), huddling in groups, and ceasing sound production. There was some evidence of habituation and reduced avoidance 2 to 3 days after onset.

The 1982 season observations by LGL and Greeneridge (1986) involved a single passage of an icebreaker with both ice-based and aerial measurements on June 28, 1982. Four groups of narwhals (n = 9 to 10, 7, 7, and 6) responded when the ship was 4 mi (6.4 km) away (received levels of approximately 100 dB in the 150- to 1,150-Hz band). At a later point, observers sighted belugas moving away from the source at more than 12.4 mi (20 km; received levels of approximately 90 dB in the 150- to 1,150-Hz band). The total number of animals observed fleeing was about 300, suggesting approximately 100 independent groups (of three individuals each). No whales were sighted the following day, but some were sighted on June 30, with ship noise audible at spectrum levels of approximately 55 dB/Hz (up to 4 kHz).

Observations during 1983 (LGL and Greeneridge, 1986) involved two ice-breaking ships with aerial survey and ice-based observations during seven sampling periods. Narwhals and belugas generally reacted at received levels ranging from 101 to 121 dB in the 20- to 1,000-Hz band and at a distance of up to 40.4 mi (65 km). Large numbers (100s) of beluga whales moved out of the area at higher received levels. As noise levels from icebreaking operations diminished, a total of 45 narwhals returned to the area and engaged in diving and foraging behavior. During the final sampling period, following an 8-h quiet interval, no reactions were seen from 28 narwhals and 17 belugas (at received levels ranging up to 115 dB).

The final season (1984) reported in LGL and Greeneridge (1986) involved aerial surveys before, during, and after the passage of two ice-breaking ships. During operations, no belugas and few narwhals were observed in an area approximately 16.8 mi (27 km) ahead of the vessels, and all whales sighted over 12.4–50 mi (20–80 km) from the ships

were swimming strongly away. Additional observations confirmed the spatial extent of avoidance reactions to this sound source in this context.

Buckstaff (2004) reported elevated dolphin whistle rates with received levels from oncoming vessels in the 110 to 120 dB range in Sarasota Bay, Florida. These hearing thresholds were apparently lower than those reported by a researcher listening with towed hydrophones. Morisaka *et al.* (2005) compared whistles from three populations of Indo-Pacific bottlenose dolphins. One population was exposed to vessel noise with spectrum levels of approximately 85 dB/Hz in the 1- to 22-kHz band (broadband received levels approximately 128 dB) as opposed to approximately 65 dB/Hz in the same band (broadband received levels approximately 108 dB) for the other two sites. Dolphin whistles in the noisier environment had lower fundamental frequencies and less frequency modulation, suggesting a shift in sound parameters as a result of increased ambient noise.

Morton and Symonds (2002) used census data on killer whales in British Columbia to evaluate avoidance of non-pulse acoustic harassment devices (AHDs). Avoidance ranges were about 2.5 mi (4 km). Also, there was a dramatic reduction in the number of days "resident" killer whales were sighted during AHD-active periods compared to pre- and post-exposure periods and a nearby control site.

Awbrey and Stewart (1983) played back semi-submersible drillship sounds (source level: 163 dB) to belugas in Alaska. They reported avoidance reactions at 984 and 4,921 ft (300 and 1,500 m) and approach by groups at a distance of 2.2 mi (3.5 km; received levels approximately 110 to 145 dB over these ranges assuming a 15 log R transmission loss). Similarly, Richardson *et al.* (1990) played back drilling platform sounds (source level: 163 dB) to belugas in Alaska. They conducted aerial observations of eight individuals among approximately 100 spread over an area several hundred meters to several kilometers from the sound source and found no obvious reactions. Moderate changes in movement were noted for three groups swimming within 656 ft (200 m) of the sound projector.

Two studies deal with issues related to changes in marine mammal vocal behavior as a function of variable background noise levels. Foote *et al.* (2004) found increases in the duration of killer whale calls over the period 1977 to 2003, during which time vessel traffic in Puget Sound, and particularly whale-watching boats around the animals, increased dramatically. Scheifele *et al.* (2005) demonstrated that belugas in the St. Lawrence River increased the levels of their vocalizations as a function of the background noise level (the "Lombard Effect").

Harbor porpoise off Vancouver Island, British Columbia, were found to be sensitive to the simulated sound of a 2-megawatt offshore wind turbine (Koschinski *et al.,* 2003). The porpoises remained significantly further away from the sound source when it was active, and this effect was seen out to a distance of 60 m (197 ft). The device used in that study produced sounds in the frequency range of 30 to 800 Hz, with peak source levels of 128 dB re 1 μPa at 1 m at the 80- and 160-Hz frequencies.

Kastelein *et al.* (2005) exposed two captive harbor porpoise (a high-frequency cetacean) to various non-pulse sounds in an approximately 111.5 × 65.6 ft (34 × 20 m) enclosure. The frequency range of the four test sounds fell into the ⅓-octave bands 8, 10, 12.5, and 16 kHz, with a source level range of 116 to 130 [plus or minus 3] dB, depending on the sound source. Each session lasted for 30 minutes (15-min period of baseline [no sound emission] followed immediately by 15-min test period [sound emission]). The researchers measured the distance between the underwater transducer and the surfacing area of the porpoises to determine the deterrent effect and the number of respirations during the session to determine the level of agitation of the animals. Kastelein *et al.* (2005) found that one porpoise was displaced between 29.5 and 42.7 ft (9 and 13 m), and the other one was displaced between 16.4 and 32.8 ft (5 and 10 m). Additionally, the researchers found that both animals surfaced more during test periods than during baseline periods. The porpoises were not reinforced with food for remaining in the sound field. It should be noted, however, that the sounds used in this study produce frequencies much higher than those that will be produced by the drillship proposed to be used by Shell for this program.

Several researchers conducting laboratory experiments on hearing and the effects of non-pulse sounds on hearing in mid-frequency cetaceans have reported concurrent behavioral responses. Nachtigall *et al.* (2003) reported that noise exposures up to 179 dB and 55-min duration affected the trained behaviors of a bottlenose dolphin participating in a TTS experiment. Finneran and Schlundt (2004) provided a detailed, comprehensive analysis of the behavioral responses of belugas and bottlenose dolphins to 1-s tones (received levels 160 to 202 dB) in the context of TTS experiments. Romano *et al.* (2004) investigated the physiological responses of a bottlenose dolphin and a beluga exposed to these tonal exposures and demonstrated a decrease in blood cortisol levels during a series of exposures between 130 and 201 dB. Collectively, the laboratory observations suggested the onset of a behavioral response at higher received levels than did field studies. The differences were likely related to the very different conditions and contextual variables between untrained, free-ranging individuals vs. laboratory subjects that were rewarded with food for tolerating noise exposure.

Pinnipeds—Pinnipeds generally seem to be less responsive to exposure to industrial sound than most cetaceans. Pinniped responses to underwater sound from some types of industrial activities such as seismic exploration appear to be temporary and localized (Harris *et al.,* 2001; Reiser *et al.,* 2009).

Responses of pinnipeds to drilling noise have not been well studied. Richardson *et al.* (1995) summarizes the few available studies, which showed ringed and bearded seals in the Arctic to be rather tolerant of drilling noise. Seals were often seen near active drillships and approached, to within 50 m (164 ft), a sound projector broadcasting low-frequency drilling sound.

Blackwell *et al.* (2004) reported little or no reaction of ringed seals in response to pile-driving activities during construction of a man-made island in the Beaufort Sea. Ringed seals were observed swimming as close as 151 ft (46 m) from the island and may have been habituated to the sounds which were likely audible at distances <1.9 mi (3 km) underwater and 0.3 mi (0.5 km) in air. Moulton *et al.* (2003) reported that ringed seal densities on ice in the vicinity of a man-made island in the Beaufort Sea did not change significantly before and after construction and drilling activities.

Southall *et al.* (2007) reviewed literature describing responses of pinnipeds to non-pulsed sound and reported that the limited data suggest exposures between approximately 90 and 140 dB generally do not appear to induce strong behavioral responses in pinnipeds exposed to non-pulse sounds in water; no data exist regarding exposures at higher levels. It is important to note that among these studies, there are some apparent

differences in responses between field and laboratory conditions. In contrast to the mid-frequency odontocetes, captive pinnipeds responded more strongly at lower levels than did animals in the field. Again, contextual issues are the likely cause of this difference.

Jacobs and Terhune (2002) observed harbor seal reactions to AHDs (source level in this study was 172 dB) deployed around aquaculture sites. Seals were generally unresponsive to sounds from the AHDs. During two specific events, individuals came within 141 and 144 ft (43 and 44 m) of active AHDs and failed to demonstrate any measurable behavioral response; estimated received levels based on the measures given were approximately 120 to 130 dB.

Costa *et al.* (2003) measured received noise levels from an Acoustic Thermometry of Ocean Climate (ATOC) program sound source off northern California using acoustic data loggers placed on translocated elephant seals. Subjects were captured on land, transported to sea, instrumented with archival acoustic tags, and released such that their transit would lead them near an active ATOC source (at 939-m depth; 75-Hz signal with 37.5-Hz bandwidth; 195 dB maximum source level, ramped up from 165 dB over 20 min) on their return to a haul-out site. Received exposure levels of the ATOC source for experimental subjects averaged 128 dB (range 118 to 137) in the 60- to 90-Hz band. None of the instrumented animals terminated dives or radically altered behavior upon exposure, but some statistically significant changes in diving parameters were documented in nine individuals. Translocated northern elephant seals exposed to this particular non-pulse source began to demonstrate subtle behavioral changes at exposure to received levels of approximately 120 to 140 dB.

Kastelein *et al.* (2006) exposed nine captive harbor seals in an approximately 82 × 98 ft (25 × 30 m) enclosure to non-pulse sounds used in underwater data communication systems (similar to acoustic modems). Test signals were frequency modulated tones, sweeps, and bands of noise with fundamental frequencies between 8 and 16 kHz; 128 to 130 [± 3] dB source levels; 1- to 2-s duration [60–80 percent duty cycle]; or 100 percent duty cycle. They recorded seal positions and the mean number of individual surfacing behaviors during control periods (no exposure), before exposure, and in 15-min experimental sessions (n = 7 exposures for each sound type). Seals generally swam away from each source at received levels of approximately 107 dB, avoiding it by approximately 16 ft (5 m), although they did not haul out of the water or change surfacing behavior. Seal reactions did not appear to wane over repeated exposure (*i.e.,* there was no obvious habituation), and the colony of seals generally returned to baseline conditions following exposure. The seals were not reinforced with food for remaining in the sound field.

Reactions of harbor seals to the simulated noise of a 2-megawatt wind power generator were measured by Koschinski *et al.* (2003). Harbor seals surfaced significantly further away from the sound source when it was active and did not approach the sound source as closely. The device used in that study produced sounds in the frequency range of 30 to 800 Hz, with peak source levels of 128 dB re 1 μPa at 1 m at the 80- and 160-Hz frequencies.

Hearing Impairment and Other Physiological Effects

Temporary or permanent hearing impairment is a possibility when marine mammals are exposed to very strong sounds. Non-auditory physiological effects might also occur in marine mammals exposed to strong underwater sound. Possible types of non-auditory physiological effects or injuries that theoretically might occur in mammals close to a strong sound source include stress, neurological effects, bubble formation, and other types of organ or tissue damage. It is possible that some marine mammal species (*i.e.,* beaked whales) may be especially susceptible to injury and/or stranding when exposed to strong pulsed sounds. However, as discussed later in this document, there is no definitive evidence that any of these effects occur even for marine mammals in close proximity to industrial sound sources, and beaked whales do not occur in the proposed activity area. The following subsections discuss in somewhat more detail the possibilities of TTS, permanent threshold shift (PTS), and non-auditory physiological effects.

TTS—TTS is the mildest form of hearing impairment that can occur during exposure to a strong sound (Kryter, 1985). While experiencing TTS, the hearing threshold rises and a sound must be stronger in order to be heard. At least in terrestrial mammals, TTS can last from minutes or hours to (in cases of strong TTS) days. For sound exposures at or somewhat above the TTS threshold, hearing sensitivity in both terrestrial and marine mammals recovers rapidly after exposure to the noise ends. Few data on sound levels and durations necessary to elicit mild TTS have been obtained for marine mammals, and none of the published data concern TTS elicited by exposure to multiple pulses of sound.

Human non-impulsive noise exposure guidelines are based on exposures of equal energy (the same sound exposure level [SEL]) producing equal amounts of hearing impairment regardless of how the sound energy is distributed in time (NIOSH, 1998). Until recently, previous marine mammal TTS studies have also generally supported this equal energy relationship (Southall *et al.,* 2007). Three newer studies, two by Mooney *et al.* (2009a,b) on a single bottlenose dolphin either exposed to playbacks of U.S. Navy mid-frequency active sonar or octave-band noise (4–8 kHz) and one by Kastak *et al.* (2007) on a single California sea lion exposed to airborne octave-band noise (centered at 2.5 kHz), concluded that for all noise exposure situations the equal energy relationship may not be the best indicator to predict TTS onset levels. Generally, with sound exposures of equal energy, those that were quieter (lower SPL) with longer duration were found to induce TTS onset more than those of louder (higher SPL) and shorter duration. Given the available data, the received level of a single seismic pulse (with no frequency weighting) might need to be approximately 186 dB re 1 $\mu Pa^2 \cdot s$ (*i.e.,* 186 dB SEL) in order to produce brief, mild TTS. Exposure to several strong seismic pulses that each have received levels near 175–180 dB SEL might result in slight TTS in a small odontocete, assuming the TTS threshold is (to a first approximation) a function of the total received pulse energy. Given that the SPL is approximately 10–15 dB higher than the SEL value for the same pulse, an odontocete would need to be exposed to a sound level of 190 dB re 1 μPa (rms) in order to incur TTS.

For baleen whales, there are no data, direct or indirect, on levels or properties of sound that are required to induce TTS. The frequencies to which baleen whales are most sensitive are lower than those to which odontocetes are most sensitive, and natural background noise levels at those low frequencies tend to be higher. Marine mammals can hear sounds at varying frequency levels. However, sounds that are produced in the frequency range at which an animal hears the best do not need to be as loud as sounds in less functional frequencies to be detected by the animal. As a result, auditory thresholds of baleen whales within their frequency band of best hearing are believed to be higher (less sensitive) than are those of odontocetes at their best frequencies (Clark and Ellison, 2004), meaning that baleen whales require sounds to be louder (*i.e.,*

higher dB levels) than odontocetes in the frequency ranges at which each group hears the best. From this, it is suspected that received levels causing TTS onset may also be higher in baleen whales. Since current NMFS practice assumes the same thresholds for the onset of hearing impairment in both odontocetes and mysticetes, the threshold is likely conservative for mysticetes.

In free-ranging pinnipeds, TTS thresholds associated with exposure to brief pulses (single or multiple) of underwater sound have not been measured. However, systematic TTS studies on captive pinnipeds have been conducted (Bowles *et al.,* 1999; Kastak *et al.,* 1999, 2005, 2007; Schusterman *et al.,* 2000; Finneran *et al.,* 2003; Southall *et al.,* 2007). Kastak *et al.* (1999) reported TTS of approximately 4–5 dB in three species of pinnipeds (harbor seal, Californian sea lion, and northern elephant seal) after underwater exposure for approximately 20 minutes to noise with frequencies ranging from 100 Hz to 2,000 Hz at received levels 60–75 dB above hearing threshold. This approach allowed similar effective exposure conditions to each of the subjects, but resulted in variable absolute exposure values depending on subject and test frequency. Recovery to near baseline levels was reported within 24 hours of noise exposure (Kastak *et al.,* 1999). Kastak *et al.* (2005) followed up on their previous work using higher sensitive levels and longer exposure times (up to 50-min) and corroborated their previous findings. The sound exposures necessary to cause slight threshold shifts were also determined for two California sea lions and a juvenile elephant seal exposed to underwater sound for similar duration. The sound level necessary to cause TTS in pinnipeds depends on exposure duration, as in other mammals; with longer exposure, the level necessary to elicit TTS is reduced (Schusterman *et al.,* 2000; Kastak *et al.,* 2005, 2007). For very short exposures (*e.g.,* to a single sound pulse), the level necessary to cause TTS is very high (Finneran *et al.,* 2003). For pinnipeds exposed to in-air sounds, auditory fatigue has been measured in response to single pulses and to non-pulse noise (Southall *et al.,* 2007), although high exposure levels were required to induce TTS-onset (SEL: 129 dB re: 20 $\mu Pa^2 \cdot s$; Bowles *et al.,* unpub. data).

NMFS (1995, 2000) concluded that cetaceans and pinnipeds should not be exposed to pulsed underwater noise at received levels exceeding, respectively, 180 and 190 dB re 1 μPa (rms). The established 180- and 190-dB re 1 μPa (rms) criteria are not considered to be the levels above which TTS might occur. Rather, they are the received levels above which, in the view of a panel of bioacoustics specialists convened by NMFS before TTS measurements for marine mammals started to become available, one could not be certain that there would be no injurious effects, auditory or otherwise, to marine mammals. Based on the summary provided here and the fact that modeling indicates the back-propagated source level for the drillship to be 175 dB re 1 μPa at 1 m, TTS is not expected to occur in any marine mammal species that may occur in the proposed drilling area since the source level will not reach levels thought to induce even mild TTS.

PTS—When PTS occurs, there is physical damage to the sound receptors in the ear. In some cases, there can be total or partial deafness, whereas in other cases, the animal has an impaired ability to hear sounds in specific frequency ranges.

There is no specific evidence that exposure to underwater industrial sound associated with oil exploration can cause PTS in any marine mammal (*see* Southall *et al.,* 2007). However, given the possibility that mammals might incur TTS, there has been further speculation about the possibility that some individuals occurring very close to such activities might incur PTS. Single or occasional occurrences of mild TTS are not indicative of permanent auditory damage in terrestrial mammals. Relationships between TTS and PTS thresholds have not been studied in marine mammals but are assumed to be similar to those in humans and other terrestrial mammals. PTS might occur at a received sound level at least several decibels above that inducing mild TTS.

It is highly unlikely that marine mammals could receive sounds strong enough (and over a sufficient duration) to cause PTS during the proposed exploratory drilling program. As mentioned previously in this document, the source levels of the drillship are not considered strong enough to cause even slight TTS. Given the higher level of sound necessary to cause PTS, it is even less likely that PTS could occur. In fact, based on the modeled source levels for the drillship, the levels immediately adjacent to the drillship may not be sufficient to induce PTS, even if the animals remain in the immediate vicinity of the activity. The modeled source level from a similar drillship (*i.e.,* the *Northern Explorer II*) suggests that marine mammals located immediately adjacent to a drillship such as the *Discoverer* would likely not be exposed to received sound levels of a magnitude strong enough to induce PTS, even if the animals remain in the immediate vicinity of the proposed activity location for a prolonged period of time.

Non-auditory Physiological Effects—Non-auditory physiological effects or injuries that theoretically might occur in marine mammals exposed to strong underwater sound include stress, neurological effects, bubble formation, and other types of organ or tissue damage. If any such effects do occur, they probably would be limited to unusual situations when animals might be exposed at close range for unusually long periods. It is doubtful that any single marine mammal would be exposed to strong sounds for sufficiently long that significant physiological stress would develop.

Until recently, it was assumed that diving marine mammals are not subject to the bends or air embolism. This possibility was first explored at a workshop (Gentry [ed.], 2002) held to discuss whether the stranding of beaked whales in the Bahamas in 2000 (Balcomb and Claridge, 2001; NOAA and USN, 2001) might have been related to bubble formation in tissues caused by exposure to noise from naval sonar. However, the opinions were inconclusive. Jepson *et al.* (2003) first suggested a possible link between mid-frequency sonar activity and acute and chronic tissue damage that results from the formation in vivo of gas bubbles, based on the beaked whale stranding in the Canary Islands in 2002 during naval exercises. Fernandez *et al.* (2005a) showed those beaked whales did indeed have gas bubble-associated lesions as well as fat embolisms. Fernandez *et al.* (2005b) also found evidence of fat embolism in three beaked whales that stranded 62 mi (100 km) north of the Canaries in 2004 during naval exercises. Examinations of several other stranded species have also revealed evidence of gas and fat embolisms (Arbelo *et al.,* 2005; Jepson *et al.,* 2005a; Mendez *et al.,* 2005). Most of the afflicted species were deep divers. There is speculation that gas and fat embolisms may occur if cetaceans ascend unusually quickly when exposed to aversive sounds or if sound in the environment causes the destabilization of existing bubble nuclei (Potter, 2004; Arbelo *et al.,* 2005; Fernandez *et al.,* 2005a; Jepson *et al.,* 2005b). Even if gas and fat embolisms can occur during exposure to mid-frequency sonar, there is no evidence that that type of effect occurs in response to the types of sound produced during the proposed exploratory activities. Also, most evidence for such

effects has been in beaked whales, which do not occur in the proposed survey area.

The low levels of continuous sound that will be produced by the drillship are not expected to cause such effects. Additionally, marine mammals that show behavioral avoidance of the proposed activities, including most baleen whales, some odontocetes (including belugas), and some pinnipeds, are especially unlikely to incur auditory impairment or other physical effects.

Stranding and Mortality

Marine mammals close to underwater detonations of high explosives can be killed or severely injured, and the auditory organs are especially susceptible to injury (Ketten *et al.,* 1993; Ketten, 1995). Underwater sound from drilling and support activities is less energetic and has slower rise times, and there is no proof that they can cause serious injury, death, or stranding. However, the association of mass strandings of beaked whales with naval exercises and, in one case, a Lamont-Doherty Earth Observatory seismic survey, has raised the possibility that beaked whales exposed to strong pulsed sounds may be especially susceptible to injury and/or behavioral reactions that can lead to stranding. The potential for stranding to result from exposure to strong pulsed sound suggests that caution be used when exposing marine mammals to pulsed or other underwater sound. Most of the stranding events associated with exposure of marine mammals to pulsed sound however, have involved beaked whales which do not occur in the proposed area. Additionally, the sound produced from the proposed activities will be at much lower levels than those reported during stranding events, as the source levels of the drillship are much lower than those other sources. Pulsed sounds, such as those produced by seismic airgun arrays, are transient and have rapid rise times, whereas the non-impulsive, continuous sounds produced by the drillship to be used by Shell do not have a rapid rise time. Rise time is the fluctuation in sound levels of the source. The type of sound that would be produced during the proposed drilling program will be constant and will not exhibit any sudden fluctuations or changes.

The potential effects to marine mammals described in this section of the document do not take into consideration the proposed monitoring and mitigation measures described later in this document (*see* the "Proposed Mitigation" and "Proposed Monitoring and Reporting" sections).

Anticipated Effects on Habitat

The primary potential impacts to marine mammals and other marine species are associated with elevated sound levels produced by the exploratory drilling program. However, other potential impacts to the surrounding habitat from physical disturbance are also possible.

Potential Impacts From Seafloor Disturbance

There is a possibility of some seafloor disturbance or temporary increased turbidity in the seabed sediments during anchoring and excavation of the mudline cellars (MLCs). The amount and duration of disturbed or turbid conditions will depend on sediment material and consolidation of specific activity.

Both the anchor and anchor chain will disturb sediments and create an "anchor scar," which is a depression in the seafloor caused by the anchor embedding. The anchor scar is a depression with ridges of displaced sediment, and the area of disturbance will often be greater than the size of the anchor itself because the anchor is dragged along the seafloor until it takes hold and sets. The drilling units will be stabilized and held in place with a system of eight 15,432 lbs (7,000 kg) anchors during operations, which are designed to embed into the seafloor. The area of seafloor that would be impacted by the setting of an anchor varies, but, on average, each anchor may impact an area of 2,124 ft^2 (197 m^2) of the seafloor, including the scar made when the anchor chain is dragged across the seafloor. Assuming eight anchors will be set for each well, mooring the *Discoverer* at three drill sites would disturb approximately 1.2 acres (4,736 m^2) of seafloor. This estimate assumes that the anchors are set only once and not moved by outside forces such as sea current. However, based on the vast size of the Chukchi Sea, the area of disturbance is not anticipated to adversely affect marine mammal use of the area.

Once the drillship ends operation, the anchors will be retrieved. Over time, the anchor scars will be filled through natural movement of sediment. The duration of the scars depends upon the energy of the system, water depth, ice scour, and sediment type. Anchor scars were visible under low energy conditions in the North Sea for 5–10 years after retrieval. Centaur Associates, Inc. (1984) reported that anchoring in sand or muddy sand sediments may not result in anchor scars or may result in scars that do not persist. Shallow hazards and geotechnical surveys conducted at the historic Burger, Crackerjack, and Tourmaline prospects indicate the surficial sediments in Shell's Burger, Crackerjack, and SW Shoebill prospects consist of fine materials (clays and silts), which are reworked by currents, storms, and ice gouging. The physical effects of MLCs and anchor scars are expected to be obscured within 5–10 years.

Vessel mooring and MLC construction would result in increased suspended sediment in the water column that could result in lethal effects on some zooplankton (food source for baleen whales). However, compared to the overall population of zooplankton and the localized nature of effects, any mortality that may occur would not be considered significant. Due to fast regeneration periods of zooplankton, populations are expected to recover quickly.

Impacts on fish resulting from suspended sediments would be dependent upon the life stage of the fish (*e.g.,* eggs, larvae, juveniles, or adults), the concentration of the suspended sediments, the type of sediment, and the duration of exposure (IMG Golder, 2004). Eggs and larvae have been found to exhibit greater sensitivity to suspended sediments (Wilber and Clarke, 2001) and other stresses, which is thought to be related to their relative lack of motility (Auld and Schubel, 1978). Sedimentation could affect fish by causing egg morbidity of demersal fish feeding near or on the ocean floor (Wilber and Clarke, 2001). Surficial membranes are especially susceptible to abrasion (Cairns and Scheier, 1968). Adhesive demersal eggs could be exposed to the sediments as long as the excavation activity continues, while exposure of pelagic eggs would be much shorter as they move with ocean currents (Wilber and Clarke, 2001). Most of the offshore demersal marine fish species in the northeastern Chukchi Sea (Shell's proposed project area) spawn under the ice during the winter and therefore would not be affected by redeposition of sediments on the seafloor due to MLC construction since Shell has not scheduled any exploration drilling activities during the winter months.

Most diadromous fish species expected to be present in the area of Shell's drilling operations lay their eggs in freshwater or coastal estuaries. Therefore, only those eggs carried into the marine environment by winds and current would be affected by these operations. Because Shell's proposed

drill sites occur 64 and 124 mi (103 and 200 km) from the Chukchi coast, the statistical probability of diadromous fish eggs being present in the vicinity of Shell's proposed operations is infinitesimally small. Thus, impacts on diadromous fish eggs due to abrasion, puncture, burial, or other effects associated with anchoring or MLC construction would be slight. Further, since most diadromous fish species produce eggs prolifically, even if a small number of eggs were impacted by these activities, the total species population would not be expected to be impacted.

Suspended sediments, resulting from vessel mooring and MLC excavation, are not expected to result in permanent damage to habitats used by the marine mammal species in the proposed project area or on the food sources that they utilize. Rather, NMFS considers that such impacts will be temporary in nature and concentrated in the areas directly surrounding vessel mooring and MLC excavation activities—areas which are very small relative to the overall Chukchi Sea region. Less than 0.0000001 percent of the fish habitat in the LS 193 area would be directly affected by the mooring and excavation activity.

Potential Impacts From Sound Generation

With regard to fish as a prey source for odontocetes and seals, fish are known to hear and react to sounds and to use sound to communicate (Tavolga *et al.,* 1981) and possibly avoid predators (Wilson and Dill, 2002). Experiments have shown that fish can sense both the strength and direction of sound (Hawkins, 1981). Primary factors determining whether a fish can sense a sound signal, and potentially react to it, are the frequency of the signal and the strength of the signal in relation to the natural background noise level.

The level of sound at which a fish will react or alter its behavior is usually well above the detection level. Fish have been found to react to sounds when the sound level increased to about 20 dB above the detection level of 120 dB (Ona, 1988); however, the response threshold can depend on the time of year and the fish's physiological condition (Engas *et al.,* 1993). In general, fish react more strongly to pulses of sound rather than a continuous signal (Blaxter *et al.,* 1981), such as the type of sound that will be produced by the drillship, and a quicker alarm response is elicited when the sound signal intensity rises rapidly compared to sound rising more slowly to the same level.

Investigations of fish behavior in relation to vessel noise (Olsen *et al.,* 1983; Ona, 1988; Ona and Godo, 1990) have shown that fish react when the sound from the engines and propeller exceeds a certain level. Avoidance reactions have been observed in fish such as cod and herring when vessels approached close enough that received sound levels are 110 dB to 130 dB (Nakken, 1992; Olsen, 1979; Ona and Godo, 1990; Ona and Toresen, 1988). However, other researchers have found that fish such as polar cod, herring, and capeline are often attracted to vessels (apparently by the noise) and swim toward the vessel (Rostad *et al.,* 2006). Typical sound source levels of vessel noise in the audible range for fish are 150 dB to 170 dB (Richardson *et al.,* 1995a). (Based on measurements from the *Northern Explorer II,* the 160 dB radius for the *Discoverer* was modeled by JASCO to be approximately 115 ft [35 m]; therefore, fish would need to be in close proximity to the drillship for the noise to be audible). In calm weather, ambient noise levels in audible parts of the spectrum lie between 60 dB to 100 dB.

Sound will also occur in the marine environment from the various support vessels. Reported source levels for vessels during ice-management have ranged from 175 dB to 185 dB (Brewer *et al.,* 1993, Hall *et al.,* 1994). However, ice-management activities are not expected to be necessary throughout the entire drilling season, so impacts from that activity would occur less frequently than sound from the drillship. Sound pressures generated while drilling have been measured during past exploration in the Beaufort and Chukchi seas. Sounds generated by drilling and ice-management are generally low frequency and within the frequency range detectable by most fish.

Based on a sound level of approximately 140 dB, there may be some avoidance by fish of the area near the drillship while drilling, around ice-management vessels in transit and during ice-management, and around other support and supply vessels when underway. Any reactions by fish to these sounds will last only minutes (Mitson and Knudsen, 2003; Ona *et al.,* 2007) longer than the vessel is operating at that location or the drillship is drilling. Any potential reactions by fish would be limited to a relatively small area within about 0.9 mi (1.4 km) of the drillship during drilling based on the modeled 120-dB isopleth. Avoidance by some fish or fish species could occur within portions of this area. No important spawning habitats are known to occur at or near the drilling locations. Additionally, impacts to fish as a prey species for odontocetes and seals are expected to be minor.

Some mysticetes, including bowhead whales, feed on concentrations of zooplankton. Bowhead whales primarily feed off Point Barrow in September and October. Reactions of zooplankton to sound are, for the most part, not known. Their ability to move significant distances is limited or nil, depending on the type of zooplankton. A reaction by zooplankton to sounds produced by the exploratory drilling program would only be relevant to whales if it caused concentrations of zooplankton to scatter. Pressure changes of sufficient magnitude to cause that type of reaction would probably occur only very close to the sound source, if any would occur at all due to the low energy sounds produced by the drillship. However, Barrow is located 140 mi (225 km) east of Shell's prospect areas. Impacts on zooplankton behavior are predicted to be inconsequential. Thus, bowhead whales feeding off Point Barrow would not be adversely affected.

Gray whales are bottom feeders and suck sediment and the benthic amphipods that are their prey from the seafloor. The species primary feeding habitats are in the northern Bering Sea and Chukchi Sea (Nerini, 1984; Moore *et al.,* 1986; Weller *et al.,* 1999). In the northeastern Chukchi Sea, gray whales can be found feeding in the shallow offshore water area known as Hanna Shoals, which is located approximately 25 mi (40 km) northeast from the proposed drill sites. This area lies outside of the 120-dB ensonified zone for all of Shell's proposed Chukchi Sea drill sites. While some gray whales may migrate past or through Shell's proposed drill sites, no impacts to gray whales feeding at Hanna Shoal are anticipated based on the distance from the proposed activity and the area of the ensonified zone. Additionally, Yazvenko *et al.* (2007) studied the impacts of seismic surveys off Sakhalin Island, Russia, on feeding gray whales and found that the seismic activity had no measurable effect on bottom feeding gray whales in the area.

Potential Impacts From Drillship Presence

The *Discoverer* is 514 ft (156.7 m) long. If an animal's swim path is directly perpendicular to the drillship, the animal will need to swim around the ship in order to pass through the area. The length of the drillship (approximately one and a half football fields) is not significant enough to cause a large-scale diversion from the animals' normal swim and migratory paths.

Additionally, the eastward spring bowhead whale migration will occur prior to the beginning of Shell's proposed exploratory drilling program. Moreover, any deflection of bowhead whales or other marine mammal species due to the physical presence of the drillship or its support vessels would be very minor. The drillship's physical footprint is small relative to the size of the geographic region it will occupy and will likely not cause marine mammals to deflect greatly from their typical migratory route. Also, even if animals may deflect because of the presence of the drillship, the Chukchi Sea is much larger in size than the length of the drillship (many dozens to hundreds of miles vs. less than two football fields), and animals would have other means of passage around the drillship. In sum, the physical presence of the drillship is not likely to cause a significant deflection to migrating marine mammals.

Potential Impacts From Ice-management

Ice-management activities include the physical pushing or moving of ice to create more open-water in the proposed drilling area and to prevent ice floes from striking the drillship. Ringed, bearded, spotted, and ribbon seals (along with the walrus) are dependent on sea ice for at least part of their life history. Sea ice is important for life functions such as resting, breeding, and molting. These species are dependent on two different types of ice: Pack ice and landfast ice. Should ice-management activities be necessary during the proposed drilling program, Shell would only manage pack ice in either early to mid-July or mid- to late October. Landfast ice would not be present during Shell's proposed operations.

The ringed seal is the most common pinniped species in the proposed project area. While ringed seals use ice year-round, they do not construct lairs for pupping until late winter/early spring on the landfast ice. Therefore, since Shell plans to conclude drilling on October 31, Shell's activities would not impact ringed seal lairs or habitat needed for breeding and pupping in the Chukchi Sea. Aerial surveys in the eastern Chukchi Sea conducted in late May–early June 1999–2000 found that ringed seals were four to ten times more abundant in nearshore fast and pack ice environments than in offshore pack ice (Bengtson *et al.,* 2005). Ringed seals can be found on the pack ice surface in the late spring and early summer in the northern Chukchi Sea, the latter part of which may overlap with the start of Shell's proposed drilling activities. If an ice floe is pushed into one that contains hauled out seals, the animals may become startled and enter the water when the two ice floes collide. Bearded seals breed in the Bering and Chukchi Seas from mid-March through early May (several months prior to the start of Shell's operations). Bearded seals require sea ice for molting during the late spring and summer period. Because this species feeds on benthic prey, bearded seals occur over the pack ice front over the Chukchi Sea shelf in summer (Burns and Frost, 1979) but were not associated with the ice front when it receded over deep water (Kingsley *et al.,* 1985). The spotted seal does not breed in the Chukchi Sea. Spotted seals molt most intensely during May and June and then move to the coast after the sea ice has melted. Ribbon seals are not known to breed in the Chukchi Sea. From July–October, when sea ice is absent, the ribbon seal is entirely pelagic, and its distribution is not well known (Burns, 1981; Popov, 1982). Therefore, ice used by bearded, spotted, and ribbon seals needed for life functions such as breeding and molting would not be impacted as a result of Shell's drilling program since these life functions do not occur in the proposed project area or occur prior to the start of Shell's operations. For ringed seals, ice-management would occur during a time when life functions such as breeding, pupping, and molting do not occur in the proposed activity area. Additionally, these life functions normally occur on landfast ice, which will not be impacted by Shell's activity.

In conclusion, NMFS has preliminarily determined that Shell's proposed exploration drilling program in the Chukchi Sea, Alaska, is not expected to have any habitat-related effects that could cause significant or long-term consequences for individual marine mammals or on the food sources that they utilize.

Proposed Mitigation

In order to issue an incidental take authorization (ITA) under Sections 101(a)(5)(A) and (D) of the MMPA, NMFS must, where applicable, set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (where relevant).

Mitigation Measures Proposed in Shell's IHA Application

Shell submitted a Marine Mammal Monitoring and Mitigation Plan (4MP) as part of its application (Attachment B; *see* **ADDRESSES**). Shell's planned offshore drilling program incorporates both design features and operational procedures for minimizing potential impacts on marine mammals and on subsistence hunts. The design features and operational procedures have been described in the IHA and LOA applications submitted to NMFS and USFWS, respectively, and are summarized here. Survey design features include:

- Timing and locating drilling and support activities to avoid interference with the annual subsistence hunts by the peoples of the Chukchi villages;
- Identifying transit routes and timing to avoid other subsistence use areas and communicating with coastal communities before operating in or passing through these areas; and
- Conducting pre-season sound propagation modeling to establish the appropriate safety and behavioral radii.

Shell indicates that the potential disturbance of marine mammals during operations will be minimized further through the implementation of several ship-based mitigation measures, which include establishing and monitoring safety and disturbance zones.

Safety radii for marine mammals around sound sources are customarily defined as the distances within which received sound levels are greater than or equal to 180 dB re 1 μPa (rms) for cetaceans and greater than or equal to 190 dB re 1 μPa (rms) for pinnipeds. These safety criteria are based on an assumption that sounds at lower received levels will not injure these animals or impair their hearing abilities, but that higher received levels might have such effects. It should be understood that marine mammals inside these safety zones will not necessarily be injured, seriously injured, or killed, as the received sound thresholds which determine these zones were established prior to the current understanding that significantly higher levels of sound would be required before injury, serious injury, or mortality could occur (*see* Southall *et al.,* 2007). With respect to Level B harassment, NMFS' practice has been to apply the 120 dB re 1 μPa (rms) received level threshold for underwater continuous sound levels.

Initial safety and behavioral radii for the sound levels produced by the drilling activities have been modeled. These radii will be used for mitigation purposes, should they be necessary,

until direct measurements are available early during the exploration activities. However, it is not anticipated that source levels from the *Discoverer* will reach the 180- or 190-dB (rms) levels.

Sounds from the *Discoverer* have not previously been measured in the Arctic or elsewhere, but sounds from a similar drillship, *Explorer II,* were measured in the Beaufort Sea (Greene, 1987; Miles *et al.,* 1987). The underwater received SPL in the 20 to 1,000 Hz band for drilling activity by the *Explorer II,* including a nearby support vessel, was 134 dB re 1 μPa (rms) at 0.1 mi (0.2 km; Greene 1987). The back-propagated source levels (175 dB re 1 μPa at 1 m) from these measurements were used as a proxy for modeling the sounds likely to be produced by drilling activities from the *Discoverer.* Based on the models, source levels from drilling are not expected to reach the 180-dB (rms) level and are expected to fall below 160 dB rms at 328 ft (100 m) from the drillship. The 120-dB (rms) radius is expected to be 0.85 mi (1.36 km) from the drillship at the Burger prospect, 0.35 mi (0.57 km) at the SW Shoebill prospect, and 0.37 mi (0.59 km) at the Crackerjack prospect. These estimated source measurements were used to model the expected sounds produced at the exploratory well sites by the *Discoverer.*

Based on the best available scientific literature, the source levels noted above for exploration drilling are not high enough to cause a temporary reduction in hearing sensitivity or permanent hearing damage to marine mammals. Consequently, Shell believes that mitigation as described for seismic activities including ramp ups, power downs, and shutdowns should not be necessary for drilling activities. NMFS has also preliminarily determined that these types of mitigation measures, traditionally required for seismic survey operations, are not practical or necessary for this proposed drilling activity. Seismic airgun arrays can be turned on slowly (*i.e.,* only turning on one or some guns at a time) and powered down quickly. The types of sound sources used for exploratory drilling have different properties and are unable to be "powered down" like airgun arrays or shutdown instantaneously without posing other risks. However, Shell plans to use marine mammal observers (MMOs) onboard the drillship and the various support vessels to monitor marine mammals and their responses to industry activities and to initiate mitigation measures should in-field measurements of the operations indicate that such measures are necessary. Additional details on the MMO program are described in the "Proposed Monitoring and Reporting" section found later in this document.

Drilling sounds are expected to vary significantly with time due to variations in the level of operations and the different types of equipment used at different times onboard the drillship. Once on location in the Chukchi Sea, Shell will conduct sound source verification (SSV) tests to establish safety zones for the previously mentioned sound level criteria. The objectives of the SSV tests are: (1) To quantify the absolute sound levels produced by drilling and to monitor their variations with time, distance, and direction from the drillship; and (2) to measure the sound levels produced by vessels operating in support of drilling operations, which include crew change vessels, tugs, ice-management vessels, and spill response vessels. The methodology for conducting the SSV tests is fully described in Shell's 4MP (*see* **ADDRESSES**). Please refer to that document for further details. Upon completion of the SSV tests, the new radii will be established and monitored, and mitigation measures will be implemented in accordance with Shell's 4MP.

Additional mitigation measures proposed by Shell include: (1) Reducing speed and/or changing course if a marine mammal is sighted from a vessel in transit (NMFS has proposed a specific distance in the next subsection); (2) resuming full activity (*e.g.,* full support vessel speed) only after marine mammals are confirmed to be outside the safety zone; (3) implementing flight restrictions prohibiting aircraft from flying below 1,500 ft (457 m) altitude (except during takeoffs and landings or in emergency situations); and (4) keeping vessels anchored when approached by marine mammals to avoid the potential for avoidance reactions by such animals.

Shell has also proposed additional mitigation measures to ensure no unmitigable adverse impact on the availability of affected species or stocks for taking for subsistence uses. Those measures are described in the "Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses" section found later in this document.

Additional Mitigation Measures Proposed by NMFS

In addition to the mitigation measures proposed in Shell's IHA application, NMFS proposes the following measures be included in the IHA, if issued, in order to ensure the least practicable impact on the affected species or stocks:

(1) All vessels should reduce speed when within 300 yards (274 m) of whales. The reduction in speed will vary based on the situation but must be sufficient to avoid interfering with the whales. Those vessels capable of steering around such groups should do so. Vessels may not be operated in such a way as to separate members of a group of whales from other members of the group;

(2) Avoid multiple changes in direction and speed when within 300 yards (274 m) of whales; and

(3) When weather conditions require, such as when visibility drops, support vessels must reduce speed and change direction, as necessary (and as operationally practicable), to avoid the likelihood of injury to whales.

Mitigation Conclusions

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and
- The practicability of the measure for applicant implementation.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an ITA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must, where applicable, set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on

populations of marine mammals that are expected to be present in the proposed action area.

Monitoring Measures Proposed in Shell's IHA Application

The monitoring plan proposed by Shell can be found in the 4MP (Attachment B of Shell's application; *see* **ADDRESSES**). The plan may be modified or supplemented based on comments or new information received from the public during the public comment period or from the peer review panel (*see* the "*Monitoring Plan Peer Review*" section later in this document). A summary of the primary components of the plan follows.

(1) Vessel-Based MMOs

Vessel-based monitoring for marine mammals will be done by trained MMOs throughout the period of drilling operations. MMOs will monitor the occurrence and behavior of marine mammals near the drillship during all daylight periods during operation and during most daylight periods when drilling operations are not occurring. MMO duties will include watching for and identifying marine mammals, recording their numbers, distances, and reactions to the drilling operations. A sufficient number of MMOs will be required onboard each vessel to meeting the following criteria: (1) 100 percent monitoring coverage during all periods of drilling operations in daylight; (2) maximum of 4 consecutive hours on watch per MMO; and (3) maximum of 12 hours of watch time per day per MMO. Shell anticipates that there will be provision for crew rotation at least every 3–6 weeks to avoid observer fatigue.

Biologist-observers will have previous marine mammal observation experience, and field crew leaders will be highly experienced with previous vessel-based marine mammal monitoring projects. Resumes for those individuals will be provided to NMFS so that NMFS can review and accept their qualifications. Inupiat observers will be experienced in the region, familiar with the marine mammals of the area, and complete a NMFS approved observer training course designed to familiarize individuals with monitoring and data collection procedures. A MMO handbook, adapted for the specifics of the planned Shell drilling program, will be prepared and distributed beforehand to all MMOs.

MMOs will watch for marine mammals from the best available vantage point on the drillship and support vessels. MMOs will scan systematically with the unaided eye and 7 x 50 reticle binoculars, supplemented with "Big-eye" binoculars and night-vision equipment when needed. Personnel on the bridge will assist the MMOs in watching for marine mammals.

Information to be recorded by MMOs will include the same types of information that were recorded during recent monitoring programs associated with industry activity in the Arctic (*e.g.,* Ireland *et al.,* 2009). When a mammal sighting is made, the following information about the sighting will be recorded:

(A) Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from the MMO, apparent reaction to activities (*e.g.,* none, avoidance, approach, paralleling, *etc.*), closest point of approach, and behavioral pace;

(B) Time, location, speed, activity of the vessel, sea state, ice cover, visibility, and sun glare; and

(C) The positions of other vessel(s) in the vicinity of the MMO location.

The ship's position, speed, and water temperature, water depth, sea state, ice cover, visibility, and sun glare will also be recorded at the start and end of each observation watch, every 30 minutes during a watch, and whenever there is a change in any of those variables.

Distances to nearby marine mammals will be estimated with binoculars (Fujinon 7 x 50 binoculars) containing a reticle to measure the vertical angle of the line of sight to the animal relative to the horizon. MMOs may use a laser rangefinder to test and improve their abilities for visually estimating distances to objects in the water. However, previous experience showed that a Class 1 eye-safe device was not able to measure distances to seals more than about 230 ft (70 m) away. The device was very useful in improving the distance estimation abilities of the observers at distances up to about 1,968 ft (600 m)—the maximum range at which the device could measure distances to highly reflective objects such as other vessels. Humans observing objects of more-or-less known size via a standard observation protocol, in this case from a standard height above water, quickly become able to estimate distances within about ±20 percent when given immediate feedback about actual distances during training.

(2) Aerial Survey Program

Recent aerial surveys of marine mammals in the Chukchi Sea were conducted over coastal areas to approximately 23 mi (37 km) offshore in 2006–2008 in support of Shell's summer seismic exploration activities. These surveys were designed to provide data on the distribution and abundance of marine mammals in nearshore waters of the Chukchi Sea. Shell proposes to conduct an aerial survey program in the Chukchi Sea in 2010 that would be similar to the 2006–2008 program.

The current aerial survey program will be designed to collect distribution data on cetaceans but will be limited in its ability to collect similar data on pinnipeds. Shell's objectives for this program include:

(A) To address data deficiencies in the distribution and abundance of marine mammals in coastal areas of the eastern Chukchi Sea; and

(B) To collect and report data on the distribution, numbers, orientation and behavior of marine mammals, particularly beluga whales, near traditional hunting areas in the eastern Chukchi Sea.

With agreement from hunters in the coastal villages, aerial surveys of coastal areas to approximately 23 mi (37 km) offshore between Point Hope and Point Barrow will begin in early to mid-July and will continue until drilling operations in the Chukchi Sea are completed. Weather and equipment permitting, surveys will be conducted twice per week during this time period. In addition, during the 2010 drilling season, aerial surveys will be coordinated in cooperation with the aerial surveys funded by MMS and conducted by NMFS and any other groups conducting surveys in the region. A full description of Shell's survey procedures can be found in the 4MP of Shell's application (*see* **ADDRESSES**). A summary follows next.

Transects will be flown in a saw-toothed pattern between the shore and 23 mi (37 km) offshore, as well as along the coast from Point Barrow to Point Hope (*see* Figure 6 of Shell's 4MP). This design will permit completion of the survey in one to two days and will provide representative coverage of the nearshore region. The surveyed area will include waters where belugas are normally available to subsistence hunters. Survey altitude will be at least 1,000 ft (305 m) with an average survey speed of 110–120 knots. As with past surveys of the Chukchi Sea coast, coordination with coastal villages to avoid disturbance of the beluga whale subsistence hunt will be extremely important. "No-fly" zones around coastal villages or other hunting areas established during communications with village representatives will be in place until the end of the hunting season.

Aerial surveys at an altitude of 1,000 ft (305 m) do not provide much information about seals but are suitable for bowhead, beluga, and gray whales. The need for a 1,000+ ft (305+ m) cloud ceiling will limit the dates and times when surveys can be flown. Selection of a higher altitude for surveys would result in a significant reduction in the number of days during which surveys would be possible, impairing the ability of the aerial program to meet its objectives. If large concentrations of belugas are encountered during the survey, the survey may be interrupted to photograph the groups to obtain better counts of the number of animals present. If whales are photographed in lagoons or other shallow-water concentration areas, the aircraft will climb to approximately 10,000 ft (3,050 m) altitude to avoid disturbing the whales and causing them to leave the area. If whales are in offshore areas, the aircraft will climb high enough to include all whales within a single photograph; typically about 3,000 ft (914 m) altitude.

Three MMOs will be aboard the aircraft during surveys. Two observers will be looking for marine mammals within 1.6 mi (2.5 km) of the survey track line; one each at bubble windows on either side of the aircraft. The third person will record data. When sightings are made, observers will notify the data recorder of the species or species class of the animal(s) sighted, the number of animals present, and the lateral distance (inclinometer angle) of the animals from the flight path of the aircraft. Data on location and conditions will also be recorded.

(3) Acoustic Monitoring

As discussed earlier in this document, Shell will conduct SSV tests to establish the isopleths for the applicable safety radii. In addition, Shell proposes to use an acoustic "net" array to accomplish two main objectives:

(A) To collect information on the occurrence and distribution of marine mammals that may be available to subsistence hunters near villages located on the Chukchi Sea coast and to document their relative abundance, habitat use, and migratory patterns; and

(B) To measure the ambient soundscape throughout the eastern Chukchi Sea and to record received levels of sound from industry and other activities further offshore in the Chukchi Sea.

The net array configuration used in 2007–2009 is again proposed for 2010. The basic components of this effort consist of 30 hydrophone systems placed widely across the U.S. Chukchi Sea and a prospect specific array of 12 hydrophones capable of localization of marine mammal calls. The net array configuration will include hydrophone systems distributed at each of the four primary transect locations: Cape Lisburne; Point Hope; Wainwright; and Barrow. The systems comprising the regional array will be placed at locations shown in Figure 7 of the 4MP in Shell's application (*see* **ADDRESSES**). These offshore systems will capture exploration drilling sounds, if present, over large distances to help characterize the sound transmission properties in the Chukchi Sea and will also provide a large amount of information related to marine mammals in the Chukchi Sea.

The regional acoustic monitoring program will be augmented in 2010 by an array of 12 additional acoustic recorders to be deployed on a grid pattern over a 7.2 mi (12 km) by 10.8 mi (18 km) area extending over several of Shell's lease blocks near locations of highest interest for drilling in 2010. The cluster array will operate at a sampling frequency of 16 kHz, which is sufficient to capture vocalizations from bowhead, beluga, gray, fin, humpback, and killer whales, walrus, and most other marine mammals known to be present in the Chukchi Sea. The cluster deployment configuration was defined to allow tracking of vocalizing animals that pass through the immediate area of these lease blocks. Maximum separation between adjacent recorders is 3.6 mi (5.8 km). At this spacing, Shell expects that individual whale calls will be detected on at least three different recorders when the calling animals are within the boundary of the deployment pattern. Bowhead and other mysticete calls should be detectable simultaneously on more than three recorders due to their relatively higher sound source levels compared to other marine mammals. In calm weather conditions, when ambient underwater sound levels are low, Shell expects to detect most other marine mammal calls on more than three recorders. The goal of simultaneous detection on multiple recorders is to allow for triangulation of the call positions, which also requires accurate time synchronization of the recorders. When small numbers of whales are vocalizing, Shell hopes to be able to identify and track the movements of specific individuals within the deployment area. It will not be possible to track individual whales if many whales are calling due to abundant overlapping calls. In this case, analyses will show the general distribution of calls in the vicinity of the recorders.

Additional details on data analysis for the types of monitoring described here (*i.e.,* vessel-based, aerial, and acoustic) can be found in the 4MP in Shell's application (*see* **ADDRESSES**).

Monitoring Plan Peer Review

The MMPA requires that monitoring plans be independently peer reviewed "where the proposed activity may affect the availability of a species or stock for taking for subsistence uses" (16 U.S.C. 1371(a)(5)(D)(ii)(III)). Regarding this requirement, NMFS' implementing regulations state, "Upon receipt of a complete monitoring plan, and at its discretion, [NMFS] will either submit the plan to members of a peer review panel for review or within 60 days of receipt of the proposed monitoring plan, schedule a workshop to review the plan" (50 CFR 216.108(d)).

NMFS convened an independent peer review panel to review Shell's 4MP for Exploration Drilling of Selected Lease Areas in the Alaskan Chukchi Sea in 2010. The panel met in late March 2010, and provided comments to NMFS in late April 2010. NMFS will consider all recommendations made by the panel, incorporate appropriate changes into the monitoring requirements of the IHA (if issued), and publish the panel's findings and recommendations in the final IHA notice of issuance or denial document.

Reporting Measures

(1) SSV Report

A report on the preliminary results of the acoustic verification measurements, including as a minimum the measured 190-, 180-, 160-, and 120-dB (rms) radii, if source levels are high enough for all of these radii to be reached, of the drillship and the support vessels, will be submitted within 120 hr after collection and analysis of those measurements at the start of the field season. This report will specify the distances of the safety zones that were adopted for the exploratory drilling program.

(2) Technical Reports

The results of Shell's 2010 offshore Chukchi Sea exploratory drilling monitoring program (*i.e.,* vessel-based, aerial, and acoustic) will be presented in the "90-day" and Final Technical reports, as required by NMFS under IHAs. Shell proposes that the Technical Reports will include: (1) Summaries of monitoring effort (*e.g.,* total hours, total distances, and marine mammal distribution through study period, accounting for sea state and other factors affecting visibility and detectability of marine mammals); (2)

analyses of the effects of various factors influencing detectability of marine mammals (*e.g.,* sea state, number of observers, and fog/glare); (3) species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover; (4) sighting rates of marine mammals during periods with and without drilling activities (and other variables that could affect detectability); (5) initial sighting distances versus drilling state; (6) closest point of approach versus drilling state; (7) observed behaviors and types of movements versus drilling state; (8) numbers of sightings/individuals seen versus drilling state; (9) distribution around the drillship and support vessels versus drilling state; and (10) estimates of take by harassment. This information will be reported for both the vessel-based and aerial monitoring.

Analysis of all acoustic data will be prioritized to address the primary questions, which are to: (a) Determine when, where, and what species of animals are acoustically detected on each recorder; (b) analyze data as a whole to determine offshore distributions as a function of time; (c) quantify spatial and temporal variability in the ambient noise; and (d) measure received levels of drillship activities. The detection data will be used to develop spatial and temporal animal distributions. Statistical analyses will be used to test for changes in animal detections and distributions as a function of different variables (*e.g.,* time of day, time of season, environmental conditions, ambient noise, vessel type, operation conditions).

The initial technical report is due to NMFS within 90 days of the completion of Shell's Chukchi Sea exploratory drilling program. The "90-day" report will be subject to review and comment by NMFS. Any recommendations made by NMFS must be addressed in the final report prior to acceptance by NMFS.

(3) Comprehensive Report

In November, 2007, Shell (in coordination and cooperation with other Arctic seismic IHA holders) released a final, peer-reviewed edition of the 2006 Joint Monitoring Program in the Chukchi and Beaufort Seas, July–November 2006 (LGL, 2007). This report is available on the NMFS Protected Resources Web site (*see* **ADDRESSES**). In March, 2009, Shell released a final, peer-reviewed edition of the Joint Monitoring Program in the Chukchi and Beaufort Seas, Open Water Seasons, 2006–2007 (Ireland *et al.,* 2009). This report is also available on the NMFS Protected Resources Web site (*see* **ADDRESSES**). A draft of the final comprehensive report for 2008 (Funk *et al.,* 2009), which incorporated comments from several agencies, was provided to NMFS and other government agencies in March 2010. The 2008 report provides data and analyses from a number of industry monitoring and research studies carried out in the Chukchi and Beaufort Seas during the 2008 open-water season with comparison to data collected in 2006 and 2007. Once Shell is able to incorporate reviewer comments, the final 2008 report will be made available to the public. The 2009 draft comprehensive report is due to NMFS by mid-April 2010. NMFS will make this report available to the public upon receipt.

Following the 2010 drilling season a comprehensive report describing the vessel-based, aerial, and acoustic monitoring programs will be prepared. The comprehensive report will describe the methods, results, conclusions and limitations of each of the individual data sets in detail. The report will also integrate (to the extent possible) the studies into a broad based assessment of industry activities, and other activities that occur in the Beaufort and/or Chukchi seas, and their impacts on marine mammals during 2010. The report will help to establish long-term data sets that can assist with the evaluation of changes in the Chukchi and Beaufort Sea ecosystems. The report will attempt to provide a regional synthesis of available data on industry activity in offshore areas of northern Alaska that may influence marine mammal density, distribution and behavior. The comprehensive report will be due to NMFS within 240 days of the date of issuance of the IHA (if issued).

(4) Notification of Injured or Dead Marine Mammals

Shell will notify NMFS' Office of Protected Resources and NMFS' Stranding Network within 48 hours of sighting an injured or dead marine mammal in the vicinity of drilling operations. Shell will provide NMFS with the species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

In the event that an injured or dead marine mammal is found by Shell that is not in the vicinity of the proposed drilling program, Shell will report the same information listed above to NMFS as soon as operationally feasible.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, the MMPA defines "harassment" as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment]. Only take by Level B behavioral harassment is anticipated as a result of the proposed drilling program. Anticipated impacts to marine mammals are associated with noise propagation from the drillship and associated support vessels. Additional disturbance to marine mammals may result from aircraft overflights and visual disturbance of the drillship or support vessels. However, based on the flight paths and altitude, impacts from aircraft operations are anticipated to be localized and minimal in nature.

The full suite of potential impacts to marine mammals from various industrial activities was described in detail in the "Potential Effects of the Specified Activity on Marine Mammals" section found earlier in this document. The potential effects of sound from the proposed exploratory drilling program might include one or more of the following: tolerance; masking of natural sounds; behavioral disturbance; non-auditory physical effects; and, at least in theory, temporary or permanent hearing impairment (Richardson *et al.,* 1995a). As discussed earlier in this document, the most common impact will likely be from behavioral disturbance, including avoidance of the ensonified area or changes in speed, direction, and/or diving profile of the animal. For reasons discussed previously in this document, hearing impairment (TTS and PTS) are highly unlikely to occur based on the fact that most of the equipment to be used during Shell's proposed drilling program does not have source levels high enough to elicit even mild TTS. Additionally, non-auditory physiological effects are anticipated to be minor, if any would occur at all. Finally, based on the proposed mitigation and monitoring measures described earlier in this document and the fact that the back-propagated source level for the drillship is estimated to be 175 dB re 1 μPa (rms), no injury or mortality of marine mammals is

anticipated as a result of Shell's proposed exploratory drilling program.

For continuous sounds, such as those produced by drilling operations, NMFS uses a received level of 120-dB (rms) to indicate the onset of Level B harassment. Shell provided calculations for the 120-dB isopleths produced by the *Discoverer* and then used those isopleths to estimate takes by harassment. Shell also included modeling results of the 160-dB isopleths for the *Discoverer* and associated estimated takes by harassment. However, NMFS has used the 120-dB calculations to make the necessary MMPA preliminary findings. Shell provides a full description of the methodology used to estimate takes by harassment in its IHA application (*see* **ADDRESSES**), which is also provided in the following sections. However, this document only discusses the take estimates at the 120 dB level. Please refer to Shell's application for the full explanation and estimates at the 160 dB level.

Shell has requested authorization for bowhead, gray, fin, humpback, minke, killer, and beluga whales, harbor porpoise, and ringed, spotted, bearded, and ribbon seals. Additionally, Shell provided exposure estimates and requested takes of narwhal. However, as stated previously in this document, sightings of this species are rare, and the likelihood of occurrence of narwhals in the proposed drilling area is minimal. Therefore, NMFS is not proposing to authorize take of this species.

Basis for Estimating "Take by Harassment"

"Take by Harassment" is described in this section and was calculated in Shell's application by multiplying the expected densities of marine mammals that may occur near the exploratory drilling operations by the area of water likely to be exposed to continuous sound levels of ≥120 dB. NMFS evaluated and critiqued the methods provided in Shell's application and determined that they were appropriate in order to make the necessary preliminary MMPA findings. This section describes the estimated densities of marine mammals that may occur in the project area. The area of water that may be ensonified to the above sound levels is described further in the "*Potential Number of Takes by Harassment*" subsection.

Marine mammal densities near the operation are likely to vary by season and habitat. Marine mammal density estimates in the Chukchi Sea have been derived for two time periods, the summer period covering July and August, and the fall period including September and October. Animal densities encountered in the Chukchi Sea during both of these time periods will further depend on the habitat zone within which the operations are occurring: Open water or ice margin. More ice is likely to be present in the area of operations during the summer period, so summer ice-margin densities have been applied to 50 percent of the area that may be exposed to sounds from drilling. Open water densities in the summer were applied to the remaining 50 percent of the area. Less ice is likely to be present during the fall season, so fall ice-margin densities have been applied to only 20 percent of the area that may be exposed to sounds from drilling. Fall open-water densities were applied to the remaining 80 percent of the area.

Shell notes that there is some uncertainty about the representativeness of the data and assumptions used in the calculations. To provide some allowance for the uncertainties, "maximum estimates" as well as "average estimates" of the numbers of marine mammals potentially affected have been derived. For a few marine mammal species, several density estimates were available, and in those cases the mean and maximum estimates were determined from the survey data. In other cases, no applicable estimate (or perhaps a single estimate) was available, so correction factors were used to arrive at "average" and "maximum" estimates. These are described in detail in the following subsections. Table 6–6 in Shell's application indicates that the "average estimate" for every species but one, the ringed seal, is zero. Therefore, to account for the fact that the 12 species listed as being potentially taken by harassment in this document may occur in Shell's proposed drilling sites during active operations, NMFS either used the "maximum estimates" or made an estimate based on typical group size for a particular species.

Detectability bias, quantified in part by $f(0)$, is associated with diminishing sightability with increasing lateral distance from the trackline. Availability bias [$g(0)$] refers to the fact that there is <100 percent probability of sighting an animal that is present along the survey trackline. Some sources of densities used below included these correction factors in their reported densities (*e.g.,* ringed seals in Bengtson *et al.,* 2005). In other cases the best available correction factors were applied to reported results when they had not been included in the reported data (*e.g.,* Moore *et al.,* 2000).

Estimated densities of marine mammals in the Chukchi Sea project area during the summer period (July–August) are presented in Table 6–1 in Shell's application and Table 1 here, and estimated fall densities (September–October) are presented in Table 6–2 in Shell's application and Table 2 here. Descriptions of the individual density estimates shown in the tables are presented next.

TABLE 1—EXPECTED DENSITIES OF CETACEANS AND SEALS IN AREAS OF THE CHUKCHI SEA, ALASKA, FOR THE PLANNED SUMMER (JULY–AUGUST) PERIOD. SPECIES LISTED UNDER THE ESA ARE IN ITALICS

Species	Open water		Ice margin	
	Average density (#/km^2)	Maximum density (#/km^2)	Average density (#/km^2)	Maximum density (#/km^2)
Odontocetes:				
Monodontidae:				
Beluga	0.0033	0.0066	0.0162	0.0324
Narwhal	0.0000	0.0000	0.0000	0.0001
Delphinidae:				
Killer whale	0.0001	0.0004	0.0001	0.0004
Phocoenidae:				
Harbor porpoise	0.0011	0.0016	0.0011	0.0016
Mysticetes:				
Bowhead whale	*0.0018*	*0.0036*	*0.0018*	*0.0036*
Fin whale	*0.0001*	*0.0004*	*0.0001*	*0.0004*

TABLE 1—EXPECTED DENSITIES OF CETACEANS AND SEALS IN AREAS OF THE CHUKCHI SEA, ALASKA, FOR THE PLANNED SUMMER (JULY–AUGUST) PERIOD. SPECIES LISTED UNDER THE ESA ARE IN ITALICS—Continued

Species	Open water		Ice margin	
	Average density (#/km^2)	Maximum density (#/km^2)	Average density (#/km^2)	Maximum density (#/km^2)
Gray whale	0.0081	0.0162	0.0081	0.0162
Humpback whale	*0.0001*	*0.0004*	*0.0001*	*0.0004*
Minke whale	0.0001	0.0004	0.0001	0.0004
Pinnipeds:				
Bearded seal	0.0107	0.0203	0.0142	0.0270
Ribbon seal	0.0003	0.0012	0.0003	0.0012
Ringed seal	0.3668	0.6075	0.4891	0.8100
Spotted seal	0.0073	0.0122	0.0098	0.0162

TABLE 2—EXPECTED DENSITIES OF CETACEANS AND SEALS IN AREAS OF THE CHUKCHI SEA, ALASKA, FOR THE PLANNED FALL (SEPTEMBER–OCTOBER) PERIOD. SPECIES LISTED UNDER THE ESA ARE IN ITALICS

Species	Open water		Ice margin	
	Average density (#/km^2)	Maximum density (#/km^2)	Average density (#/km^2)	Maximum density (#/km^2)
Odontocetes:				
Monodontidae:				
Beluga	0.0162	0.0324	0.0324	0.0648
Narwhal	0.0000	0.0000	0.0000	0.0001
Delphinidae:				
Killer whale	0.0001	0.0004	0.0001	0.0004
Phocoenidae:				
Harbor porpoise	0.0010	0.0013	0.0010	0.0013
Mysticetes:				
Bowhead whale	*0.0174*	*0.0348*	*0.0348*	*0.0696*
Fin whale	*0.0001*	*0.0004*	*0.0001*	*0.0004*
Gray whale	0.0062	0.0124	0.0062	0.0124
Humpback whale	*0.0001*	*0.0004*	*0.0001*	*0.0004*
Minke whale	0.0001	0.0004	0.0001	0.0004
Pinnipeds:				
Bearded seal	0.0107	0.0203	0.0142	0.0270
Ribbon seal	0.0003	0.0012	0.0003	0.0012
Ringed seal	0.2458	0.4070	0.3277	0.5427
Spotted seal	0.0049	0.0081	0.0065	0.0108

(1) Cetaceans

Beluga Whales—Summer densities of belugas in offshore waters are expected to be low. Aerial surveys have recorded few belugas in the offshore Chukchi Sea during the summer months (Moore *et al.,* 2000). Aerial surveys of the Chukchi Sea in 2008–2009 flown by NMFS' National Marine Mammal Laboratory (NMML) as part of the Chukchi Offshore Monitoring in Drilling Area project (COMIDA) have only reported five beluga sightings during more than 8,700 mi (14,001 km) of on-transect effort, only two of which were offshore (NMML, 2009). Additionally, only one beluga sighting was recorded during more than 37,900 mi (60,994 km) of visual effort during good visibility conditions from industry vessels operating in the Chukchi Sea in September-October of 2006–2008 (Haley *et al.,* 2009b). If belugas are present during the summer, they are more likely to occur in or near the ice edge or close to shore during their northward migration. Expected densities were calculated from data in Moore *et al.* (2000). Data from Moore *et al.* (2000; Figure 6 and Table 6) used in the average open-water density estimate included two on-transect beluga sightings during 6,640 mi (10,686 km) of on-transect effort in the Chukchi Sea during summer. A mean group size of 7.1 (Coefficient of Variation [CV]=1.7) was calculated from 10 Chukchi Sea summer sightings present in the Bowhead Whale Aerial Survey Program (BWASP) database. A $f(0)$ value of 2.841 and $g(0)$ value of 0.58 from Harwood *et al.* (1996) were also used in the calculation. The CV associated with group size was used to select an inflation factor of 2 to estimate the maximum density that may occur in both open-water and ice-margin habitats. Specific data on the relative abundance of beluga in open-water versus ice-margin habitat during the summer in the Chukchi Sea is not available. However, Moore *et al.* (2000) reported higher than expected beluga sighting rates in open-water during fall surveys in the Beaufort and Chukchi seas. This would suggest that densities near ice may actually be lower than open water, but belugas are commonly associated with ice, so an inflation factor of only 2 (instead of 4) was used to estimate the average ice-margin density from the open-water density.

In the fall, beluga whale densities in the Chukchi Sea are expected to be somewhat higher than in the summer because individuals of the eastern Chukchi Sea stock and the Beaufort Sea stock will be migrating south to their wintering grounds in the Bering Sea (Angliss and Allen, 2009). Consistent with this, the number of on-effort beluga

sightings reported during COMIDA flights in September–October of 2008–2009 was over three times more (n=17) than during July–August with a very similar amount of on-transect effort (NMML, 2009). However, there were no beluga sightings reported during more than 11,200 mi (18,025 km) of vessel based effort in good visibility conditions during 2006–2008 industry operations in the Chukchi Sea. Densities derived from survey results in the northern Chukchi Sea in Moore *et al.* (2000) were used as the average density for open-water and ice-margin fall season estimates (*see* Table 6–2 in Shell's application and Table 2 here). Data from Moore *et al.* (2000; Table 8) used in the average open-water density estimate included 123 beluga sightings and 27,560 mi (44,354 km) of on-transect effort in water depths 118–164 ft (36–50 m). A mean group size of 2.39 (CV=0.92) came from the average group size of 82 Chukchi Sea fall sightings in waters 115–164 ft (35–50 m) deep present in the BWASP database. A $f(0)$ value of 2.841 and $g(0)$ value of 0.58 from Harwood *et al.* (1996) were used in the calculation. The CV associated with group size was used to select an inflation factor of 2 to estimate the maximum density that may occur in both open-water and ice-margin habitats. Moore *et al.* (2000) reported higher than expected beluga sighting rates in open-water during fall surveys in the Beaufort and Chukchi seas, so an inflation value of only 2 was used to estimate the average ice-margin density from the open-water density.

Bowhead Whales—By July, most bowhead whales are northeast of the Chukchi Sea, within or migrating toward their summer feeding grounds in the eastern Beaufort Sea. No bowheads were reported during 6,640 mi (10,686 km) of on-transect effort in the Chukchi Sea by Moore *et al.* (2000). Aerial surveys in 2008–2009 by NMML as part of the COMIDA project reported only four sightings during more than 8,700 mi (14,001 km) of on-transect effort. Two of the four sightings were offshore, both of which occurred near the end of August. Bowhead whales were also rarely reported in July–August of 2006–2008 during aerial surveys of the Chukchi Sea coast (Thomas *et al.,* 2009). This is consistent with movements of tagged whales (*see* ADFG, 2009; Quakenbush *et al.,* 2009), all of which moved through the Chukchi Sea by early May 2009, and tended to travel relatively close to shore, especially in the northern Chukchi Sea. The estimate of bowhead whale density in the Chukchi Sea was calculated by assuming there was one bowhead sighting during the 6,640 mi (10,686 km) of survey effort in the Chukchi Sea during the summer months reported in Moore *et al.* (2000) although no bowheads were actually observed during those surveys. The more recent COMIDA data were not used as NMML has not released a report summarizing the data so they are not considered final. Only two sightings are present in the BWASP database during July and August in the Chukchi Sea, both of which were of individual whales. The mean group size from combined July–August sightings in the BWASP, COMIDA, and 2006–2008 industry database is 1.33 (CV=0.58). This value, along with a $f(0)$ value of 2 and a $g(0)$ value of 0.07, both from Thomas *et al.* (2002) were used to estimate a summer density of bowhead whales. The CV of group size and standard errors reported in Thomas *et al.* (2002) for $f(0)$ and $g(0)$ correction factors suggest that an inflation factor of 2 is appropriate for estimating the maximum density from the average density. Bowheads are not expected to be encountered in higher densities near ice in the summer (Moore *et al.,* 2000), so the same density estimates are used for open-water and ice-margin habitats. Densities from vessel based surveys in the Chukchi Sea during non-seismic periods and locations in July–August of 2006–2008 (Haley *et al.,* 2009b) ranged from 0.0003–0.0013/mi^2 (0.0001–0.0005/km^2) with a maximum 95 percent confidence interval (CI) of 0.0049/mi^2 (0.0019 km^2).

During the fall, bowhead whales that summered in the Beaufort Sea and Amundsen Gulf migrate west and south to their wintering grounds in the Bering Sea, making it more likely that bowheads will be encountered in the Chukchi Sea at this time of year. Moore *et al.* (2002; Table 8) reported 34 bowhead sightings during 27,560 mi (44,354 km) of on-transect survey effort in the Chukchi Sea during September–October. Thomas *et al.* (2009) also reported increased sightings on coastal surveys of the Chukchi Sea during September and October of 2006–2008. Aerial surveys in 2008–2009 (NMML, 2009) reported 20 bowhead sightings during 8,803 mi (14,167 km) of on-transect effort, eight of which were offshore. GPS tagging of bowheads appear to show that migration routes through the Chukchi Sea are more variable than through the Beaufort Sea (ADFG, 2009; Quakenbush *et al.,* 2009). Some of the routes taken by bowheads remain well north of the planned drilling activities while others have passed near to or through the area. Kernel densities estimated from GPS locations of whales suggest that bowheads do not spend much time (*e.g.,* feeding or resting) in the north-central Chukchi Sea near the area of planned activities (Quakenbush *et al.,* 2009). Most spent no more than 1 week in the general LS 193 area. The mean group size from September–October Chukchi Sea bowhead sightings in the BWASP database is 1.59 (CV=1.08). This is slightly below the mean group size of 1.85 from all the preliminary COMIDA sightings during the same months, but above the value of 1.13 from only on-effort COMIDA sightings (NMML, 2009). The same $f(0)$ and $g(0)$ values that were used for the summer estimates above were used for the fall estimates. As with the summer estimates, an inflation factor of 2 was used to estimate the maximum density from the average density in both habitat types. Moore *et al.* (2000) found that bowheads were detected more often than expected in association with ice in the Chukchi Sea in September–October, so a density of twice the average open-water density was used as the average ice-margin density. Densities from vessel based surveys in the Chukchi Sea during non-seismic periods and locations in July–August of 2006–2008 (Haley *et al.,* 2009b) ranged from 0.0003 to 0.0129/mi^2 (0.0001–0.0050/km^2) with a maximum 95 percent CI of 0.1243/mi^2 (0.0480 km^2).

Gray Whales—Gray whales densities are expected to be much higher in the summer months than during the fall. Moore *et al.* (2000) found the distribution of gray whales in the planned operational area was scattered and limited to nearshore areas where most whales were observed in water less than 115 ft (35 m) deep. With similar amounts of on-transect effort between the two seasons in the preliminary COMIDA data from aerial surveys in 2008–2009, there were 3 times as many gray whale sightings in July–August than September–October, five times as many if you consider all effort and sightings. Thomas *et al.* (2009) also reported substantial declines in the sighting rates of gray whales in the fall. The average open-water summer density was calculated from effort and sightings in Moore *et al.* (2000; Table 6) for water depths 118–164 ft (36–50 m), including 4 sightings during 3,901 mi (6,278 km) of on-transect effort. An average group size of 3.11 (CV=0.97) was calculated from all July–August Chukchi Sea gray whale sightings in the BWASP database and used in the summer density estimate. This value was higher than the average group size in the preliminary

COMIDA data (1.71; NMML, 2009) and from coastal aerial surveys in 2006–2008 (1.27; Thomas *et al.,* 2009). Correction factors $f(0) = 2.49$ (Forney and Barlow, 1998) and $g(0) = 0.30$ (Forney and Barlow, 1998; Mallonee, 1991) were also used in the density calculation because the group size used in the average density estimate was relatively high compared to other data sources and the CV near one, an inflation factor of 2 was used to estimate the maximum densities from average densities in both habitat types. Gray whales are not commonly associated with sea ice, but may be present near it, so the same densities were used for ice-margin habitat as were derived for open-water habitat during both seasons. Densities from vessel based surveys in the Chukchi Sea during non-seismic periods and locations in July–August of 2006–2008 (Haley *et al.,* 2009b) ranged from 0.0023/mi^2 to 0.0088/mi^2 (0.0009/km^2 to 0.0034/km^2) with a maximum 95 percent CI of 0.0378 mi^2 (0.0146 km^2).

In the fall, gray whales may be dispersed more widely through the northern Chukchi Sea (Moore *et al.,* 2000), but overall densities are likely to be decreasing as the whales begin migrating south. A density calculated from effort and sightings (27 sightings during 27,559 mi [44,352 km] of on-transect effort) in water 118–164 ft (36–50 m) deep during autumn in Moore *et al.* (2000; Table 12) was used as the average estimate for the Chukchi Sea during the fall period. A group size value of 2.49 (CV=1.37) calculated from the BWASP database was used in the density calculation, along with the same $f(0)$ and $g(0)$ values described above. The group size value of 2.49 was again higher than the average group size calculated from preliminary COMIDA data (1.24; NMML, 2009) and reported from coastal aerial surveys in 2006–2008 (1.12; Thomas *et al.,* 2009). Densities from vessel based surveys in the Chukchi Sea during non-seismic periods and locations in July–August of 2006–2008 (Haley *et al.,* 2009b) ranged from 0.0028/mi^2 to 0.0062/mi^2 (0.0011/km^2 to 0.0024/km^2) with a maximum 95 percent CI of 0.0474 mi^2 (0.0183 km^2).

Harbor Porpoise—Harbor porpoise densities were estimated from industry data collected during 2006–2008 activities in the Chukchi Sea. Prior to 2006, no reliable estimates were available for the Chukchi Sea, and harbor porpoise presence was expected to be very low and limited to nearshore regions. Observers on industry vessels in 2006–2008, however, recorded sightings throughout the Chukchi Sea during the summer and early fall months. Density estimates from 2006–2008 observations during non-seismic periods and locations in July–August ranged from 0.0023/mi^2 to 0.0041/mi^2 (0.0009/km^2 to 0.0016/km^2) with a maximum 95 percent CI of 0.0016/mi^2 (0.0041/km^2) (Haley *et al.,* 2009b). The median value from the summer season of those three years (0.0028/mi^2/0.0011/km^2) was used as the average open-water density estimate while the high value (0.0041/mi^2/0.0016/km^2) was used as the maximum estimate (*see* Table 6–1 in Shell's application and Table 1 here). Harbor porpoise are not expected to be present in higher numbers near ice, so the open-water densities were used for ice-margin habitat in both seasons. Harbor porpoise densities recorded during industry operations in the fall months of 2006–2008 were slightly lower and ranged from 0.0005/mi^2 to 0.0034/km^2 (0.0002/km^2 to 0.0013/km^2) with a maximum 95 percent CI of 0.0114/mi^2 (0.0044/km^2). The median value 0.0026/mi^2 (0.0010/km^2) was again used as the average density estimate and the high value 0.0034/mi^2 (0.0013/km^2) was used as the maximum estimate (*see* Table 6–2 in Shell's application and Table 2 here).

Other Cetaceans—The remaining four cetacean species that could be encountered in the Chukchi Sea during Shell's planned exploration drilling program include the humpback, killer, minke, and fin whales. Although there is evidence of the occasional occurrence of these animals in the Chukchi Sea, it is unlikely that more than a few individuals will be encountered during the planned drilling program. George and Suydam (1998) reported killer whales, Brueggeman *et al.* (1990) and Haley *et al.* (2009b) reported minke whale, Suydam and George (1992) and Haley *et al.* (2009b) reported harbor porpoise, and NMML (2009) and Haley *et al.* (2009b) reported fin whales off of Ledyard Bay in the Chukchi Sea.

(2) Pinnipeds

Four species of pinnipeds may be encountered in the Chukchi Sea area of Shell's proposed drilling program: Ringed, bearded, spotted, and ribbon seals. Each of these species, except the spotted seal, is associated with both the ice margin and the nearshore area. The ice margin is considered preferred habitat (as compared to the nearshore areas) during most seasons. Spotted seals are often considered to be predominantly a coastal species except in the spring when they may be found in the southern margin of the retreating sea ice, before they move to shore. However, satellite tagging has shown that they sometimes undertake long excursions into offshore waters, as far as 74.6 mi (120 km) off the Alaskan coast in the eastern Chukchi Sea, during summer (Lowry *et al.,* 1994, 1998). Ribbon seals have been reported in very small numbers within the Chukchi Sea by observers on industry vessels (Patterson *et al.,* 2007; Haley *et al.,* 2009b).

Ringed and Bearded Seals—Ringed and bearded seals "average" and "maximum" summer ice-margin densities (*see* Table 6–1 in Shell's application and Table 1 here) were available in Bengtson *et al.* (2005) from spring surveys in the offshore pack ice zone of the northern Chukchi Sea. However, corrections for bearded seal availability, $g(0)$, based on haul-out and diving patterns were not available. Densities of ringed and bearded seals in open-water are expected to be somewhat lower in the summer when preferred pack ice habitat may still be present in the Chukchi Sea. Average and maximum open-water densities have been estimated as ¾ of the ice margin densities during both seasons for both species. The fall density of ringed seals in the offshore Chukchi Sea has been estimated as ⅔ the summer densities because ringed seals begin to reoccupy nearshore fast ice areas as the ice forms in the fall. Bearded seals may also begin to leave the Chukchi Sea in the fall, but less is known about their movement patterns, so fall densities were left unchanged from summer densities. For comparison, the ringed seal density estimates calculated from data collected during summer 2006–2008 industry operations ranged from 0.0212/mi^2 to 0.0572/mi^2 (0.0082/km^2 to 0.0221/km^2) with a maximum 95 percent CI of 0.1494/mi^2 (0.0577/km^2) (Haley *et al.,* 2009b). These estimates are lower than those made by Bengtson *et al.* (2005), which is not surprising given the different survey methods and timing. Little information on spotted seal densities in offshore areas of the Chukchi Sea is available.

Spotted Seals—Spotted seal densities in the summer were estimated by multiplying the ringed seal densities by 0.02. This was based on the ratio of the estimated Chukchi populations of the two species. Chukchi Sea spotted seal abundance was estimated by assuming that 8 percent of the Alaskan population of spotted seals is present in the Chukchi Sea during the summer and fall (Rugh *et al.,* 1997), the Alaskan population of spotted seals is 59,214 (Allen and Angliss, 2010), and that the population of ringed seals in the Alaskan Chukchi Sea is greater than 208,000 animals (Bengtson *et al.,* 2005). In the fall, spotted seals show increased use of coastal haul-outs so densities

were estimated to be ⅔ of the summer densities.

Ribbon Seals—Two ribbon seal sightings were reported during industry vessel operations in the Chukchi Sea in 2006–2008 (Haley *et al.* 2009b). The resulting density estimate of 0.0008/mi² (0.0003/km²) was used as the average density and 4 times that was used as the maximum for both seasons and habitat zones.

As described earlier in this document, Shell's proposed start date for the exploration drilling program in the Chukchi Sea is July 4. Up to three wells may be drilled, with an average of 37 days at each drill site, including five days of MLC excavation. Shell's preferred order in which the wells will be drilled, ice permitting, will likely be Burger, SW Shoebill, and Crackerjack. Drilling operations are expected to be completed on or before October 31.

Expected sound propagation from the drillship *Discoverer* was modeled at the three possible drill sites. Changes in the water column of the Chukchi Sea through the course of the drilling season will likely affect the propagation of sounds produced by drilling activities, so models were run for expected oceanographic conditions in July and October to bracket the seasonal variability. As stated previously in this document, sounds from the *Discoverer* have not previously been measured in the Arctic or elsewhere, but sounds from a similar drillship, *Explorer II,* were measured twice in the Beaufort Sea (Greene, 1987a,b; Miles *et al.,* 1987). The back-propagated source levels from these measurements (175 dB re 1 μPa rms), which included sounds from a support vessel operating nearby, were used as a proxy for modeling the sounds likely to be produced by drilling activities from the *Discoverer.* Results of sound propagation modeling that were used in the calculations of areas exposed to various levels of received sounds are summarized in Table 6–3 of Shell's application and Table 3 here.

TABLE 3—THE 120 dB re 1 μPA (rms) SOUND PROPAGATION MODELING RESULTS OF DRILLING ACTIVITIES AT THREE LOCATIONS IN THE CHUKCHI SEA. THE VALUES USED IN CALCULATIONS INCLUDE A 50 PERCENT INFLATION FACTOR.

Location	Modeling results (km)	Used in calculations (km)
Burger (Summer)	1.36	2.04
SW Shoebill (Summer)	0.51	0.77
SW Shoebill (Fall)	0.57	0.86
Crackerjack (Fall)	0.59	0.89

Potential Number of Takes by Harassment

(1) Estimates of the Number of Individuals That may be Exposed to Sounds ≥120 dB

Just because a marine mammal is exposed to drilling sounds ≥120 dB (rms), this does not mean that it will *actually* exhibit a disruption of behavioral patterns in response to the sound source. Rather, the estimates provided here are simply the best estimates of the number of animals that potentially could have a behavioral modification due to the noise. However, not all animals react to sounds at this low level, and many will not show strong reactions (and in some cases any reaction) until sounds are much stronger. There are several variables that determine whether or not an individual animal will exhibit a response to the sound, such as the age of the animal, previous exposure to this type of anthropogenic sound, habituation, *etc.*

Numbers of marine mammals that might be present and potentially disturbed (*i.e.,* Level B harassment) are estimated below based on available data about mammal distribution and densities at different locations and times of the year as described previously. Exposure estimates are based on a single drillship (*Discoverer*) drilling up to three wells in the Chukchi Sea from July 4–October 31. Actual drilling may occur on approximately 11 days while the *Discoverer* is in the Chukchi Sea.

The number of different individuals of each species potentially exposed to received levels ≥120 dB re 1 μPa within each season and habitat zone was estimated by multiplying:

- The anticipated area to be ensonified to the specified level in the time period and habitat zone to which a density applies, by
- the expected species density.

The numbers of exposures were then summed for each species across the seasons and habitat zones.

(2) Estimated Area Exposed to Sounds ≥120 dB

Distances shown in Table 6–3 in Shell's application and Table 3 here were used to estimate the area ensonified to ≥120 dB (rms) around the drillship in summer and fall seasons. As noted earlier in this document, drilling activities at the SW Shoebill location may occur in both seasons, so the entire area that may be exposed to sounds by operations at the SW Shoebill location have been included in calculations for both seasons. The area of water potentially exposed to received sound levels ≥120 dB (rms) by exploration drilling operations was estimated to be 5.8 mi² (14.9 km²) in the summer for the Burger and SW Shoebill prospects combined and 1.9 mi² (4.8 km²) in the fall at the SW Shoebill and Crackerjack prospects combined.

Cetaceans—Cetacean species estimates of the average and maximum number of individual cetaceans that would be exposed to received sound levels ≥120 dB are shown in Table 6–6 in Shell's application. Based on the calculations, all species have an estimated average number of individuals exposed to ≥120 dB of less than one. However, chance encounters with individuals of any species are possible. To account for chance encounters with the cetacean species that possibly may occur in the proposed drilling area (*i.e.,* beluga, killer, bowhead, fin, gray, humpback, and minke whales and harbor porpoise), Shell provided minimal estimates for the number of each marine mammal species or stock that may experience Level B harassment (*see* Table 6–6 in Shell's application). Shell proposed five exposures to sounds ≥120 dB for each of the cetacean species. The estimates show that three endangered cetacean species (the bowhead, fin, and humpback whales) are expected to be exposed to sounds ≥120 dB unless they avoid the area around the drill sites. Migrating bowheads are likely to do so to some extent, though many of the bowheads engaged in other activities, particularly feeding and socializing, probably will not (Richardson, 2004). Some of the other cetacean species are likely to avoid the immediate area around the drilling vessel due to the

vessel traffic; however, not all cetaceans will change their behavior when exposed to these sound levels.

Pinnipeds—The ringed seal is the most widespread and abundant pinniped in ice-covered arctic waters, and there appears to be a great deal of year-to-year variation in abundance and distribution of these marine mammals. Ringed seals account for a large number of marine mammals expected to be encountered during the exploration drilling program, and hence exposed to sounds with received levels ≥120 dB. The average (and maximum) estimate is that 8 (13) ringed seals might be exposed to sounds with received levels ≥120 dB from the exploration drilling program.

Two additional seal species are expected to be encountered: Bearded and spotted seals. Additionally, there is a slight possibility that ribbon seals may occur in the project area. Based on the calculations, all species have an estimated average number of individuals exposed to ≥120 dB of less than one. However, chance encounters with individuals of any species are possible. To account for chance encounters with these three pinniped species, Shell provided minimal estimates for the number of each marine mammal species or stock that may experience Level B harassment (*see* Table 6–6 in Shell's application). Shell proposed five exposures each to sounds ≥120 dB for bearded, spotted, and ribbon seals.

Estimated Take Conclusions

As stated previously, NMFS' practice has been to apply the 120 dB re 1 μPa (rms) received level threshold for underwater continuous sound levels to determine whether take by Level B harassment occurs. However, not all animals react to sounds at this low level, and many will not show strong reactions (and in some cases any reaction) until sounds are much stronger. Southall *et al.* (2007) provide a severity scale for ranking observed behavioral responses of both free-ranging marine mammals and laboratory subjects to various types of anthropogenic sound (*see* Table 4 in Southall *et al.* (2007)). Tables 15, 17, 19 and 21 in Southall *et al.* (2007) outline the numbers of low-frequency, mid-frequency, and high-frequency cetaceans and pinnipeds in water, respectively, reported as having behavioral responses to non-pulses in 10-dB received level increments. These tables illustrate, especially for low- and mid-frequency cetaceans, that more intense observed behavioral responses did not occur until sounds were higher than 120 dB (rms). Many of the animals had no observable response at all when exposed to anthropogenic sound at levels of 120 dB (rms) or even higher.

Although the 120-dB isopleth for the drillship may seem slightly expansive (*i.e.,* 1.27 mi [2.04 km], which includes the 50 percent inflation factor), the zone of ensonification begins to shrink dramatically with each 10–dB increase in received sound level to where the 160-dB isopleth is only about 328 ft (100 m) from the drillship. As stated previously, source levels are expected to be 175 dB (rms). For an animal to receive a sound at this level, it would have to be within several meters of the vessel, which is unlikely, especially given the fact that certain species are likely to avoid the area (as described earlier in this document).

NMFS is proposing to authorize the maximum take estimates provided in Table 6–6 of Shell's application. The only exception to this is for the beluga whale to account for group size, as belugas typically occur in groups of 10 to several hundred individuals. Therefore, NMFS proposes to authorize the take of 20 beluga whales, 13 ringed seals, and 5 individuals each of killer, bowhead, fin, gray, humpback, and minke whales, harbor porpoise, and bearded, ribbon, and spotted seals. Table 4 outlines the abundance, proposed take, and percentage of each stock or population for the 12 species that may be exposed to sounds ≥120 dB in Shell's proposed Chukchi Sea drilling area. Less than 1 percent of each species or stock would potentially be exposed to sounds above the Level B harassment threshold.

TABLE 4—ABUNDANCE ESTIMATES, TOTAL PROPOSED TAKE ESTIMATES, AND PERCENTAGE OF STOCK OR POPULATION THAT MAY BE TAKEN FOR SPECIES THAT MAY OCCUR IN SHELL'S PROPOSED CHUKCHI SEA DRILLING AREA

Species	Abundance[1]	Total proposed take	Percentage of stock or population
Beluga Whale	39,258	20	0.05
Killer Whale	656	5	0.76
Harbor Porpoise	48,215	5	0.01
Bowhead Whale	[2] 14,247	5	0.04
Fin Whale	5,700	5	0.09
Gray Whale	17,752	5	0.03
Humpback Whale	2,256	5	0.22
Minke Whale	810–1,003	5	0.62
Bearded Seal	[3] 4,863	5	0.1
Ribbon Seal	49,000	5	0.01
Ringed Seal	208,000–252,000	13	0.01
Spotted Seal	59,214	5	0.01

[1] Unless stated otherwise, abundance estimates are taken from the 2009 Alaska SAR.
[2] Assumes 3.4 percent annual growth from the 2001 estimate of 10,545 individuals (Zeh and Punt, 2005).
[3] Eastern Chukchi Sea population (NMML, unpublished data).

Lastly, even though Shell has indicated that the Chukchi Sea drilling program will occur for approximately 111 days between July 4 and October 31, 2010, Shell has requested that the IHA (if issued) be valid for a full year. NMFS is proposing to grant this request in the event that Shell is unable to conduct active operations for the full 111 days. Therefore, depending on the expiration date of the IHA (if issued), Shell could potentially work early in the 2011 open-water season. The take numbers presented here (and in Shell's application) are based on 111 days of active operations. Therefore, these numbers account for this situation. In fact, these numbers may then be an overestimate, as fewer animals, especially bowhead and beluga whales, would be expected at the drill sites in early July 2011.

Negligible Impact and Small Numbers Analysis and Preliminary Determination

NMFS has defined "negligible impact" in 50 CFR 216.103 as "* * * an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival." In making a negligible impact determination, NMFS considers a variety of factors, including but not limited to: (1) The number of anticipated mortalities; (2) the number and nature of anticipated injuries; (3) the number, nature, intensity, and duration of Level B harassment; and (4) the context in which the takes occur.

No injuries or mortalities are anticipated to occur as a result of Shell's proposed Chukchi Sea exploratory drilling program, and none are proposed to be authorized. Additionally, animals in the area are not expected to incur hearing impairment (*i.e.,* TTS or PTS) or non-auditory physiological effects. Takes will be limited to Level B behavioral harassment. Although it is possible that some individuals may be exposed to sounds from drilling operations more than once, during the migratory periods it is less likely that this will occur since animals will continue to move across the Chukchi Sea towards their wintering grounds.

Bowhead and beluga whales are less likely to occur in the proposed project area in July and August, as they are found mostly in the Canadian Beaufort Sea at this time. The animals are more likely to occur later in the season (mid-September through October), as they head west towards Russia or south towards the Bering Sea. Additionally, while bowhead whale tagging studies revealed that animals occurred in the LS 193 area, a higher percentage of animals were found outside of the LS 193 area in the fall (ADF&G, 2009). Gray whales occur in the northeastern Chukchi Sea during the summer and early fall to feed. Hanna Shoals, an area northeast of Shell's proposed drill sites, is a common gray whale feeding ground. This feeding ground lies outside of the 120-dB ensonified area from Shell's activities. While some individuals may swim through the area of active drilling, it is not anticipated to interfere with their feeding at Hanna Shoals or other Chukchi Sea feeding grounds. Other cetacean species are much rarer in the proposed project area. The exposure of cetaceans to sounds produced by exploratory drilling operations is not expected to result in more than Level B harassment and is anticipated to have no more than a negligible impact on the affected species or stock.

Few seals are expected to occur in the proposed project area, as several of the species prefer more nearshore waters. NMFS has preliminarily determined that the exposure of pinnipeds to sounds produced by exploratory drilling operations is not expected to result in more than Level B harassment and is anticipated to have no more than a negligible impact on the animals.

Of the 12 marine mammal species likely to occur in the proposed drilling area, three are listed as endangered under the ESA: the bowhead, humpback, and fin whales. All three species are also designated as "depleted" under the MMPA. Despite these designations, the Bering-Chukchi-Beaufort stock of bowheads has been increasing at a rate of 3.4 percent annually for nearly a decade (Allen and Angliss, 2010). Additionally, during the 2001 census, 121 calves were counted, which was the highest yet recorded. The calf count provides corroborating evidence for a healthy and increasing population (Allen and Angliss, 2010). An annual increase of 4.8 percent was estimated for the period 1987–2003 for North Pacific fin whales. While this estimate is consistent with growth estimates for other large whale populations, it should be used with caution due to uncertainties in the initial population estimate and about population stock structure in the area (Allen and Angliss, 2010). Zeribini *et al.* (2006, cited in Allen and Angliss, 2010) noted an increase of 6.6 percent for the Central North Pacific stock of humpback whales in Alaska waters. There is no critical habitat designated in the U.S. Arctic for any of these three whale species. The ribbon seal is a "species of concern," and bearded and ringed seals are "candidate species" under the ESA, meaning they are currently being considered for listing but are not designated as depleted under the MMPA. None of the other three species that may occur in the project area are listed as threatened or endangered under the ESA or designated as depleted under the MMPA.

Potential impacts to marine mammal habitat were discussed previously in this document (*see* the "Anticipated Effects on Habitat" section). Although some disturbance is possible to food sources of marine mammals, the impacts are anticipated to be minor enough as to not affect rates of recruitment or survival of marine mammals in the area. Based on the vast size of the Arctic Ocean where feeding by marine mammals occurs versus the localized area of the drilling program, any missed feeding opportunities in the direct project area would be minor based on the fact that other feeding grounds exist elsewhere.

The estimated takes proposed to be authorized represent less than 1 percent of the affected population or stock for all 12 species. These estimates represent the percentage of each species or stock that could be taken by Level B behavioral harassment if each animal is taken only once. Additionally, these numbers are likely an overestimate, as these take numbers were calculated using a 50 percent inflation factor of the 120-dB radius, which is a conservative approach recommended by some acousticians when modeling a new sound source in a new location. This is fairly conservative given the fact that the radii were based on results from a similar drillship (*i.e.,* the *Northern Explorer II*). SSV tests may reveal that the Level B harassment zone may in fact be smaller than that used to estimate take. If the SSV tests reveal that the Level B harassment zone is slightly larger than that of the *Northern Explorer II,* the 50 percent inflation factor should cover the discrepancy. Moreover, the mitigation and monitoring measures (described previously in this document) proposed for inclusion in the IHA (if issued) are expected to reduce even further any potential disturbance to marine mammals.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, NMFS preliminarily finds that Shell's proposed Chukchi Sea exploratory drilling program may result in the incidental take of small numbers of marine mammals, by Level B harassment only, and that the total taking from the exploratory drilling program will have a negligible impact on the affected species or stocks.

Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses

Relevant Subsistence Uses

The disturbance and potential displacement of marine mammals by sounds from drilling activities are the principal concerns related to subsistence use of the area. Subsistence remains the basis for Alaska Native culture and community. Marine mammals are legally hunted in Alaskan waters by coastal Alaska Natives. In rural Alaska, subsistence activities are often central to many aspects of human existence, including patterns of family

life, artistic expression, and community religious and celebratory activities. Additionally, the animals taken for subsistence provide a significant portion of the food that will last the community throughout the year. The main species that are hunted include bowhead and beluga whales, ringed, spotted, and bearded seals, walruses, and polar bears. (As mentioned previously in this document, both the walrus and the polar bear are under the USFWS' jurisdiction.) The importance of each of these species varies among the communities and is largely based on availability.

The subsistence communities in the Chukchi Sea that have the potential to be impacted by Shell's offshore drilling program include Point Hope, Point Lay, Wainwright, Barrow, and possibly Kotzebue (however, this community is much farther to the south of the proposed project area). Wainwright is the coastal village closest to the proposed drill sites. It is located 78 mi (125.5 km) from Shell's prospects. Point Lay, Barrow, and Point Hope are 92, 140, and 180 mi (148, 225.3, and 290 km), respectively, from Shell's prospects.

Point Hope residents subsistence hunt for bowhead and beluga whales, polar bears, and walrus. Bowhead and beluga whales are hunted in the spring and early summer along the ice edge. Beluga whales may also be hunted later in the summer along the shore. Walrus are harvested in late spring and early summer, and polar bears are hunted from October to April (MMS, 2007). Seals are available from October through June, but are harvested primarily during the winter months, from November through March, due to the availability of other resources during the other periods of the year (MMS, 2007).

With Point Lay situated near Kasegaluk Lagoon, the community's main subsistence focus is on beluga whales. Each year, hunters from Point Lay drive belugas into the lagoon to a traditional hunting location. The belugas have been predictably sighted near the lagoon from late June through mid- to late July (Suydam *et al.,* 2001). Seals are available year-round, and polar bears and walruses are normally hunted in the winter. Hunters typically travel to Barrow, Wainwright, or Point Hope to participate in bowhead whale harvest, but there is interest in reestablishing a local Point Lay harvest.

Wainwright residents subsist on both beluga and bowhead whales in the spring and early summer. During these two seasons the chances of landing a whale are higher than during other seasons. Seals are hunted by this community year-round, and polar bears are hunted in the winter.

Barrow residents' main subsistence focus is concentrated on biannual bowhead whale hunts. They hunt these whales during the spring and fall. Westbound bowheads typically reach the Barrow area in mid-September and are in that area until late October (Brower, 1996). Autumn bowhead whaling near Barrow normally begins in mid-September to early October but may begin as early as late-August if whales are observed and ice conditions are favorable (USDI/BLM, 2005). Whaling near Barrow can continue into October, depending on the quota and conditions. Other animals, such as seals, walruses, and polar bears are hunted outside of the whaling season, but they are not the primary source of the subsistence harvest (URS Corporation, 2005).

Potential Impacts to Subsistence Uses

NMFS has defined "unmitigable adverse impact" in 50 CFR 216.103 as:

> * * * an impact resulting from the specified activity: (1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) Causing the marine mammals to abandon or avoid hunting areas; (ii) Directly displacing subsistence users; or (iii) Placing physical barriers between the marine mammals and the subsistence hunters; and (2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

Noise and general activity during Shell's proposed drilling program have the potential to impact marine mammals hunted by Native Alaskans. In the case of cetaceans, the most common reaction to anthropogenic sounds (as noted previously in this document) is avoidance of the ensonified area. In the case of bowhead whales, this often means that the animals divert from their normal migratory path by several kilometers. Helicopter activity also has the potential to disturb cetaceans and pinnipeds by causing them to vacate the area. Additionally, general vessel presence in the vicinity of traditional hunting areas could negatively impact a hunt.

Plan of Cooperation (POC)

Regulations at 50 CFR 216.104(a)(12) require IHA applicants for activities that take place in Arctic waters to provide a POC or information that identifies what measures have been taken and/or will be taken to minimize adverse effects on the availability of marine mammals for subsistence purposes. Shell has developed a Draft POC for its 2010 Chukchi Sea, Alaska, exploration drilling program to minimize any adverse impacts on the availability of marine mammals for subsistence uses. A copy of the Draft POC was distributed to the communities, subsistence user groups, NMFS, and other Federal and State agencies in May 2009. An updated Communications Plan was then submitted to NMFS as an attachment to the POC in early 2010. Shell conducted POC meetings throughout 2009 regarding its planned 2010 activities in both the Beaufort and Chukchi Seas. During these meetings, Shell focused on lessons learned from prior years' activities and presented mitigation measures for avoiding potential conflicts, which are outlined in the 2010 POC and this document. Shell's POC addresses issues of vessel transit, drilling, and associated activities. Communities that were consulted regarding Shell's 2010 Arctic Ocean operations include: Barrow, Kaktovik, Wainwright, Kotzebue, Kivalina, Point Lay, and Point Hope. Attempts were made to meet individually with whaling captains and to hold a community meeting in Nuiqsut; however, after receipt of a request by the Mayor, the scheduled meeting was cancelled. Shell subsequently sent correspondence to all post office box holders in Nuiqsut on February 26, 2009, indicating its willingness to visit and have dialogue on the proposed plans.

Beginning in early January 2009, Shell held one-on-one meetings with representatives from the North Slope Borough (NSB) and Northwest Arctic Borough (NWAB), subsistence-user group leadership, and Village Whaling Captain Association representatives. Shell's primary purpose in holding individual meetings was to inform and prepare key leaders, prior to the public meetings, so that they would be prepared to give appropriate feedback on planned activities.

Shell presented the proposed project to the NWAB Assembly on January 27, 2009, to the NSB Assembly on February 2, 2009, and to the NSB and NWAB Planning Commissions in a joint meeting on March 25, 2009. Meetings were also scheduled with representatives from the Alaska Eskimo Whaling Commission (AEWC), and presentations on proposed activities were given to the Inupiat Community of the Arctic Slope, and the Native Village of Barrow. A full list of POC meetings conducted by Shell between January and April 2009 can be found in Table 4.2–1 of Shell's POC. Shell has successfully completed additional POC meetings with several communities since submitting the Draft POC, including:

- June 1, 2009: NSB Assembly meeting;
- June 2, 2009: Point Lay meeting with village leadership;
- June 3, 2009: Kaktovik meeting with village leadership;
- June 17, 2009: Point Hope meeting with village leadership;
- August 5, 2009: NWAB Assembly meeting; and
- August 27, 2009: NSB Planning Commission meeting.

On December 8, 2009, Shell held consultation meetings with representatives from the various marine mammal commissions. Prior to drilling in 2010, Shell will also hold additional consultation meetings with the affected communities and subsistence user groups, NSB, and NWAB to discuss the mitigation measures included in the POC.

The following mitigation measures, plans and programs, are integral to the POC and were developed during consultation with potentially affected subsistence groups and communities. These measures, plans, and programs will be implemented by Shell during its 2010 exploration drilling operations in both the Beaufort and Chukchi Seas to monitor and mitigate potential impacts to subsistence users and resources. The mitigation measures Shell has adopted and will implement during its 2010 Chukchi Sea offshore exploration drilling operations are listed and discussed below. This most recent version of Shell's planned mitigation measures was presented to community leaders and subsistence user groups starting in January of 2009 and has evolved since in response to information learned during the consultation process.

To minimize any cultural or resource impacts to subsistence activities from its exploration operations, Shell will implement the following additional measures to ensure coordination of its activities with local subsistence users to minimize further the risk of impacting marine mammals and interfering with the subsistence hunts for marine mammals:

(1) The drillship and support vessels will not enter the Chukchi Sea before July 1 unless authorized by the USFWS based upon a review of seasonal ice conditions and other factors to minimize effects on marine mammals that frequent open leads and to minimize effects on spring bowhead or beluga whale hunts.

(2) To minimize impacts on marine mammals and subsistence hunting activities, vessels that can safely travel outside of the polynya zone will do so. In the event the transit outside of the polynya zone results in Shell having to break ice (as opposed to managing ice by pushing it out of the way), the drillship and support vessels will enter into the polynya zone far enough so that ice breaking is not necessary. If it is necessary to move into the polynya zone, Shell will notify the local communities of the change in the transit route through the Communication Centers (Com Centers);

(3) Shell has developed a Communication Plan and will implement the plan before initiating exploration drilling operations to coordinate activities with local subsistence users as well as Village Whaling Associations in order to minimize the risk of interfering with subsistence hunting activities and keep current as to the timing and status of the bowhead whale migration, as well as the timing and status of other subsistence hunts. The Communication Plan includes procedures for coordination with Com and Call Centers to be located in coastal villages along the Chukchi and Beaufort Seas during Shell's proposed activities in 2010;

(4) Shell will employ local Subsistence Advisors from the Beaufort and Chukchi Sea villages to provide consultation and guidance regarding the whale migration and subsistence hunt. There will be a total of nine subsistence advisor-liaison positions (one per village), to work approximately 8-hours per day and 40-hour weeks through Shell's 2010 exploration project. The subsistence advisor will use local knowledge (Traditional Knowledge) to gather data on subsistence lifestyle within the community and advise as to ways to minimize and mitigate potential impacts to subsistence resources during the drilling season. Responsibilities include reporting any subsistence concerns or conflicts; coordinating with subsistence users; reporting subsistence-related comments, concerns, and information; and advising how to avoid subsistence conflicts. A subsistence advisor handbook will be developed prior to the operational season to specify position work tasks in more detail;

(5) Shell will recycle drilling muds (*e.g.,* use those muds on multiple wells), to the extent practicable based on operational considerations (*e.g.,* whether mud properties have deteriorated to the point where they cannot be used further), to reduce discharges from its operations. At the end of the season excess water base fluid will be pre-diluted to a 30:1 ratio with seawater and then discharged;

(6) Shell will implement flight restrictions prohibiting aircraft from flying within 1,000 ft (305 m) of marine mammals or below 1,500 ft (457 m) altitude (except during takeoffs and landings or in emergency situations) while over land or sea; and

(7) Vessels within 900 ft (274 m) of marine mammals will reduce speed, avoid separating members from a group, and avoid multiple changes in direction.

Aircraft and vessel traffic between the drill sites and support facilities in Wainwright, and aircraft traffic between the drill sites and air support facilities in Barrow would traverse areas that are sometimes used for subsistence hunting of belugas. Disturbance associated with vessel and aircraft traffic could therefore potentially affect beluga hunts. Vessel and aircraft traffic associated with Shell's proposed drilling program will be restricted under normal conditions to designated corridors that remain onshore or proceed directly offshore thereby minimizing the amount of traffic in coastal waters where beluga hunts take place. The designated traffic corridors do not traverse areas indicated in recent mapping as utilized by Barrow, Point Lay, or Point Hope for beluga hunts. The corridor avoids important beluga hunting areas in Kasegaluk Lagoon.

For several years, a Conflict Avoidance Agreement (CAA) has been negotiated between the AEWC, affected whaling captains' associations, and the oil and gas industry to avoid conflicts between industry activity and bowhead whale subsistence hunts. While the signing of a CAA is not a requirement to obtain an IHA, the CAA often contains measures that help NMFS make its no unmitigable adverse impact determination for bowhead whales. Shell reviewed the draft 2010 CAA and made some revisions to the CAA before signing the document.

Unmitigable Adverse Impact Analysis and Preliminary Determination

NMFS has preliminarily determined that Shell's proposed Chukchi Sea offshore exploration drilling program will not have an unmitigable adverse impact on the availability of species or stocks for taking for subsistence uses. This preliminary determination is supported by information contained in this document and Shell's POC. Shell has adopted a spatial and temporal strategy for its Chukchi Sea operations that should minimize impacts to subsistence hunters. Shell will enter the Chukchi Sea far offshore, so as to not interfere with July hunts in the Chukchi Sea villages and will communicate with the Com Centers to notify local communities of any changes in the transit route. After the close of the July

beluga whale hunts in the Chukchi Sea villages, very little whaling occurs in Wainwright, Point Hope, and Point Lay. Although the fall bowhead whale hunt in Barrow will occur while Shell is still operating (mid- to late September to October), Barrow is located 140 mi (225 km) east of the proposed drill sites. Based on these factors, Shell's Chukchi Sea survey is not expected to interfere with the fall bowhead harvest in Barrow. In recent years, bowhead whales have occasionally been taken in the fall by coastal villages along the Chukchi coast, but the total number of these animals has been small.

Adverse impacts are not anticipated on sealing activities since the majority of hunts for seals occur in the winter and spring, when Shell will not be operating. Additionally, most sealing activities occur much closer to shore than Shell's proposed drill sites.

Shell will also support the village Com Centers in the Arctic communities and employ local Subsistence Advisors from the Beaufort and Chukchi Sea villages to provide consultation and guidance regarding the whale migration and subsistence hunt. The Subsistence Advisors will provide advice to Shell on ways to minimize and mitigate potential impacts to subsistence resources during the drilling season. Support activities, such as helicopter flights, could impact nearshore subsistence hunts. However, Shell will use flight paths to avoid adverse impacts to hunts and will communicate regularly with the Com Centers.

Based on the measures described in Shell's Draft POC, the proposed mitigation and monitoring measures (described earlier in this document), and the project design itself, NMFS has determined preliminarily that there will not be an unmitigable adverse impact on subsistence uses from Shell's Chukchi Sea offshore exploration drilling activities.

Endangered Species Act (ESA)

There are three marine mammal species listed as endangered under the ESA with confirmed or possible occurrence in the proposed project area: the bowhead, humpback, and fin whales. NMFS' Permits, Conservation and Education Division has initiated consultation with NMFS' Endangered Species Division under section 7 of the ESA on the issuance of an IHA to Shell under section 101(a)(5)(D) of the MMPA for this activity. Consultation will be concluded prior to a determination on the issuance of an IHA.

National Environmental Policy Act (NEPA)

NMFS is currently preparing an Environmental Assessment, pursuant to NEPA, to determine whether or not this proposed activity may have a significant effect on the human environment. This analysis will be completed prior to the issuance or denial of the IHA.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to authorize the take of marine mammals incidental to Shell's 2010 Chukchi Sea, Alaska, exploration drilling program, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: May 3, 2010.

Helen M. Golde,

Deputy Director, Office of Protected Resources, National Marine Fisheries Service.

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