
ENERGY EFFICIENCY OF APPLIANCES

HEARING
BEFORE THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
ONE HUNDRED ELEVENTH CONGRESS
SECOND SESSION

ON

S. 1696 **S. 3054**
S. 2908 **S. 3059**

MARCH 10, 2010



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ENERGY EFFICIENCY OF APPLIANCES

WEDNESDAY, MARCH 10, 2010

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 9:34 a.m. in room SD-366, Dirksen Senate Office Building, Hon. Jeff Bingaman, chairman, presiding.

OPENING STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO

The CHAIRMAN. OK, why don't we get started here? Thank you all very much for coming. Senator Murkowski will be here shortly and said that it was acceptable for us to proceed. I know, I believe Senator Menendez is going to try to arrive, and perhaps some of our other members.

Today's hearing is on 4 bills designed to strengthen the Department of Energy's appliance efficiency program—S. 1696, the Green Gaming Act of 2009; S. 2908, the Water Heater Rating Improvement Act of 2009; S. 3054, a bill to establish efficiency standards for water dispensers, food holding cabinets, and electric spas; and S. 3059, the National Energy Efficiency Enhancement Act of 2010.

Energy efficiency continues to be the most cost-effective strategy for strengthening our Nation's economic and energy security and for reducing the environmental impacts of energy production. I should have mentioned this to Al before, but I was at a conference at MIT this weekend that they had there in Boston on energy, and they had the head of energy information, the international energy agency out of Paris, and he made an interesting point.

He said that their projections are that to reduce greenhouse gas emissions to where they need to be, 53 percent of that has to come from energy efficiency improvements. So, clearly, energy efficiency is the lion's share of the solution to that problem, at least from their perspective.

By 2020, the program that the Department of Energy has in place related to appliance standards will have reduced national electric demand 12 percent below what it otherwise would be, all the time saving American businesses and families billions of dollars. The bills being considered this morning would enhance the standards program by establishing or updating efficiency standards for major energy-consuming products, such as air conditioners, furnaces, outdoor lighting, as well as several smaller product classes. S. 3059 would also make several improvements to program operations.

By 2030, it is estimated the enhancements proposed in these bills would displace electricity equivalent to the output of 14 coal-fired power plants, reduce carbon dioxide emissions by 39 million metric tons, equivalent to taking 7 million cars off the road for a year, and saving consumers an estimated \$7 billion in reduced energy costs, creating tens of thousands of jobs as these savings are spent or invested in other ways.

So we thank the witnesses and others in the business and energy efficiency communities for their commitment and their tenacity in negotiating the agreements that are included in these bills. Our Nation continues to face tremendous economic and energy security challenges. At a time when solutions may be frustrated by political factors, your working together for the common good is inspiring.

I also want to thank Senator Murkowski and several of our colleagues for the support they have provided and their staffs have provided in this bipartisan effort.

I look forward to hearing from all the witnesses and working to see these enhancements become part of the legislation that the Senate considers and passes this year. So, with that short introduction, let me introduce our witnesses.

We have Kathleen Hogan, who is the Deputy Assistant Secretary for Energy Efficiency in the Department of Energy. Thank you for being here.

Steve Nadel, who is the executive director of the American Council for an Energy-Efficient Economy. Thank you for being here.

Joseph McGuire, president of the Association of Home Appliance Manufacturers. Thank you for your involvement in all of this.

Stephen Yurek, who is president and chief executive officer with the Air Conditioning, Heating, and Refrigeration Institute in Arlington. Thank you for being here.

Kyle Pitsor, who is vice president for Government relations with the National Electrical Manufacturers Association. Thank you for being here.

Ms. Hogan, why don't you go right ahead? If each of you could give us about 5 minutes, and we will just go across the table here. Give us about 5 minutes of the main points we need to understand, reflecting your perspective on these bills. Then we may have some questions.

Ms. Hogan, go right ahead.

STATEMENT OF KATHLEEN HOGAN, DEPUTY ASSISTANT SECRETARY, ENERGY EFFICIENCY, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY

Ms. HOGAN. Good morning, Chairman Bingaman, Ranking Member Murkowski, and others here. Thank you for the opportunity to appear today and to discuss the appliance standards and energy efficiency.

As you all know and as Secretary Chu reminds us, energy efficiency is not just the low-hanging fruit, it is the fruit already on the ground. It is the fastest, lowest-risk, most economical way to address climate change and energy security concerns as well as build jobs. Many of the necessary technologies and know-how are available now.

Appliance standards as a policy are a highly cost-effective approach for advancing energy efficiency, and really, some of the greatest opportunities for energy savings are in the appliances and products that consumers and businesses use every day.

Now, I have submitted some specific comments for the record on the 4 bills that are the subject of today's hearing, and I certainly commend the Senators and the committee staffers who have worked very hard on these bills in gaining industry and advocate consensus on much of the legislation.

Now I would like to take this opportunity to discuss the department's Appliance and Commercial Equipment Standards Program. As you know, DOE has been implementing this program since its Federal establishment in 1975, and, as amended, the appliance standards requirements are really among the broadest of any country in the world. I think it is also not news that DOE has received criticism in the past for its implementation of this program, for missing deadlines for updating standards and establishing rules for specific products. But those issues have been addressed.

In November 2006, the department entered into a consent decree under which it agreed to publish the final rules for 22 product categories by specific deadlines, the latest of which is June 30, 2011. This represented a 6 fold increase in appliance standard activities at the Department of Energy.

Since this consent decree, the department has made significant progress meeting these requirements. We have met the deadlines for 13 rulemakings that were required to date, and we expect to complete the remaining 8 rulemakings on time by June 2011.

This administration is also bringing a renewed commitment to a strong appliance standards program. The President issued a memo to Secretary Chu in February of 2009 requesting that DOE take all necessary steps to finalize the legally required energy conservation standard rulemakings as expeditiously as possible and to meet all applicable deadlines.

Between February and August last year, DOE completed all 5 rulemakings highlighted in the President's memo. These rulemakings were completed ahead of schedule, and over the next 30 years, they will save Americans an estimated \$250 billion to \$300 billion and avoid the need for 15 power plants. In the last 3 months, DOE completed standards for commercial clothes washers, and small electric motors on schedule. We are now on schedule to complete rulemakings on residential water heaters, direct heating equipment, and gas pool heaters by the end of this month.

As we look ahead to the next 3 years, the department will revise standards for another 14 product categories, including residential air conditioners, refrigerators, clothes washers, and medium electric motors, and this will complete requirements of the consent decree, as well as address additional requirements under EPCAct and EISA 2007. These standards will provide savings on the order of the seven packages that I just mentioned.

So DOE has increased its pace to complete these rulemakings, and we are also reviewing our operations to improve efficiency and productivity. This includes efforts to improve and streamline test procedures and enforcement of appliance standards.

Enforcement of our standards is a very important improvement area. Energy conservation standards must be enforced to be effective, and DOE has taken a number of steps in this area. In the last 6 months, we have created a new enforcement team within the Office of General Counsel, announced a program to randomly review compliance with DOE certification requirements, and held manufacturers accountable for failing to comply.

Our general counsel's office has initiated investigations and enforcement actions involving hundreds of products. These efforts have revealed several issues with existing statutory language. For example, the current statutory penalty originally adopted in the 1970s is limited to \$200 per violation, and statute limits the department's enforcement authority to specific enumerated acts, which do not cover all possible violations.

So, again, thank you for the opportunity to discuss this very important Federal energy efficiency program, and I will be happy to answer any questions that you may have.

[The prepared statement of Ms. Hogan follows:]

PREPARED STATEMENT OF KATHLEEN HOGAN, DEPUTY ASSISTANT SECRETARY, ENERGY EFFICIENCY, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY

Chairman Bingaman, Ranking Member Murkowski, Members of the Committee, thank you for the opportunity to appear before you today to discuss appliance standards and four recently introduced bills.

As this Committee well knows, energy efficiency generally is a fast, low risk, economical way to address climate and energy security concerns. Improvements in energy efficiency can be made today, with significant benefits. Numerous studies have concluded that current technology can greatly reduce energy consumption while providing considerable economic benefit.

Mr. Chairman, I know energy efficiency is a priority for you and your fellow Committee Members. The Department of Energy (DOE) is pleased to work with you to advance the goal of making the Nation's homes, offices, factories, and vehicles more efficient. The Department advances energy efficiency through a number of efforts, including promoting the adoption of energy efficiency policies and practices; broadening consumer acceptance of energy efficiency as a high-priority, cost-saving resource; and accelerating market adoption of energy efficient technologies. The Appliances and Commercial Equipment Standards Program is a major component of DOE's energy efficiency efforts.

My comments focus on five main items, including:

- Appliance standards background and history;
- Recent DOE efforts to meet an appliance standards consent decree;
- DOE appliance standards processes and enforcement;
- Comments on pending energy efficiency legislation; and
- The "Best in Class" concept for appliance standards.

APPLIANCE STANDARDS

Background and History

The Department's Appliance and Commercial Equipment Standards Program develops test procedures and energy conservation standards for residential appliances and commercial equipment. When applied, these standards can spur innovation, conserve energy, and reduce greenhouse gas (GHG) emissions.

The Energy Policy and Conservation Act of 1975 (EPCA) designated test procedures, conservation targets, and labeling requirements for certain major household appliances, and established the DOE Appliance and Commercial Equipment Standards Program. Amendments to EPCA changed the conservation targets to mandatory standards and added categories, and eventually included a broad range of residential and commercial products. In 2005, DOE was sued for allegedly failing to meet the deadlines and other requirements of EPCA. Deadlines for these specific products had been repeatedly missed, in some cases for a dozen years or more.

In January 2006, the Department released its plan to eliminate the appliance standards backlog by issuing one new or amended standard for each of the products in the backlog by June of 2011. This ambitious schedule reflected a six-fold increase in standards activities compared with the previous 18 years. In addition to clearing the backlog of appliance standards, the Department is addressing further standards and test procedure requirements included in the Energy Policy Act of 2005 (EPAct 2005) and the Energy Independence and Security Act of 2007 (EISA).

In November 2006, the Department entered into a consent decree, under which it agreed to publish the final rules for 22 product categories by specific deadlines, the latest of which is June 30, 2011.

Recent Efforts to Meet the Appliance Standards Consent Decree

The Department has made significant progress on meeting its consent decree and additional EPAct 2005 and EISA requirements. It has met the deadlines for the 13 rulemakings required to date leaving eight rulemakings to be completed by June 30, 2011.

On February 5, 2009, President Obama issued a memorandum to Secretary Chu requesting that DOE take all necessary steps to finalize legally required energy conservation standards rulemakings as expeditiously as possible and to meet all applicable judicial and statutory deadlines.

Between February 5, 2009 and August 8, 2009, DOE completed the five appliance standards rulemakings highlighted in the President's memo on time. The five standards rulemakings included the codification of standards prescribed by EISA, standards for fluorescent and incandescent lamps, beverage vending machines, ranges and ovens, and certain commercial equipment contained in the American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard (ASHRAE) 90.1. These five standards rulemakings were completed ahead of schedule and will save over two billion metric tons of carbon dioxide over the next 30 years. Over that time period, they will save Americans an estimated \$250 to \$300 billion through avoided energy costs.¹

In addition, in the last three months DOE completed standards for commercial clothes washers and small electric motors on schedule, and aims to complete residential water heaters, direct heating equipment and gas pool heaters by the end of March 2010. In the next three years, the Department will also revise standards for several additional categories of products, including residential air conditioners, refrigerators, clothes washers, and medium electric motors. These standards will also provide substantial energy savings to Americans.

Appliance Standards Processes and Enforcement

While DOE has already increased its pace to complete required rulemakings, the Department continues to examine and review its operations to improve efficiency and productivity to achieve the Administration's goal of using appliance standards to increase energy savings and avoid GHG emissions. In addition, the Department continues to proactively work to improve and streamline its test procedures and enforcement of appliance standards. The improved procedures will build upon DOE and industry best practices, creating a process for developing, reviewing, and updating test procedures that will be able to accommodate changes in designs and technologies.

EISA added new flexibility to the rulemaking process that can contribute to the Department's productivity. Section 308 of EISA permits DOE to issue direct final rules in cases where a fairly representative group of stakeholders (including manufacturers, States, and efficiency advocates) jointly submit a recommended standard and no adverse public comments are received. For a consensus rule, this has the potential to reduce a typical three-year process. EISA also authorizes DOE to consider the establishment of regional standards for furnaces, central air conditioners, and heat pumps. The residential central air conditioner rulemaking, currently underway, is the Department's first opportunity to pursue the establishment of regional standards under the new authority. Furthermore, Section 307 of EISA removes the requirement for DOE to publish and Advance Notice of Proposed Rulemaking (ANOPR) in rulemakings on energy conservation standards for certain residential products. In lieu of ANOPRs, DOE posts analyses to its website and holds public meetings to receive stakeholder input on preliminary analyses.

The Department is assessing the resource needs of the appliance standards team, as well as determining how best to improve or reengineer underlying processes. The goal is to put sufficient Federal resources in place to ensure all requirements are

¹DOE Press Release, October 13, 2009. <http://www.energy.gov/news2009/8129.htm>

met within given timelines and quality and content requirements. These resources will be applied to rule development and standards enforcement.

Additionally, the Department recognizes that the energy conservation standards must be enforced to be effective. The Department recently has taken significant steps to strengthen its enforcement of standards. Within the last six months the Department created a new enforcement team within the Office of the General Counsel, announced a program to randomly review compliance with DOE certification requirements and, most importantly, has held manufacturers accountable for failing to comply with EPCA and DOE's regulations. As part of DOE's tougher enforcement efforts, the Office of the General Counsel has initiated investigations and enforcement actions involving hundreds of products as far ranging as refrigerator-freezers, heating and air conditioning systems, light bulbs, and showerheads. These efforts include both actions to enforce the underlying energy efficiency standards, as well as efforts to improve the quality of the energy efficiency information available to DOE and consumers.

While many of these efforts are still ongoing, they have revealed that the existing statutory language constrains the Department's enforcement efforts in several ways. For example, the current statutory penalty, originally adopted in the 1970s, is limited to \$200 per violation. Similarly, the process prescribed by statute for assessing these penalties may also benefit from updating. Finally, the statute limits the Department's enforcement authority to specific enumerated acts which do not cover all circumstances found to be problematic by the enforcement team.

PENDING ENERGY EFFICIENCY LEGISLATION

The Department recognizes and appreciates the Committee's hard work on developing legislation that advances the research, development and deployment of energy efficiency. DOE looks forward to working with the Committee on this legislation as requested.

My comments below address four bills, either pending or introduced, including:

- S. 3059—The National Energy Efficiency Enhancement Act of 2010;
- S. 1696—The Green Gaming Act of 2009;
- S. 2908—The Water Heater Rating Improvement Act of 2009; and
- S. 3054—a bill establishing efficiency standards for spas, water dispensers, and commercial food cabinets.

3059—NATIONAL ENERGY EFFICIENCY ENHANCEMENT ACT OF 2010

Sec 2. Energy Conservation Standards

(a) Multiple efficiency descriptors: DOE does not currently have authority to regulate based on multiple efficiency descriptors. The lack of such authority has prevented DOE from responding positively to stakeholder requests for the use of multiple efficiency descriptors. This provision would allow DOE greater flexibility in the technical formulation of test procedures and energy conservation standards.

(c) Regional standards for central air conditioners and heat pumps: DOE has initiated a rulemaking on central air conditioners and heat pumps. DOE has not yet completed an analysis of the specific proposed standards. The next step in DOE's rulemaking process for these products is the provision of a preliminary analysis of potential standard levels. In this next step of the process, stakeholders will have an opportunity to discuss issues relevant to the rulemaking and to comment on DOE's approach.

(d) Regional standards for furnaces: DOE currently has a rulemaking underway for residential furnaces. DOE has not yet completed an analysis of the specific proposed standards. The next step in DOE's rulemaking process is a notice of public meeting in which DOE will describe the planned analytical methodology and process for conducting a rulemaking. In this next step of the process, stakeholders will have an opportunity to discuss issues relevant to the rulemaking and to comment on DOE's approach.

(f) Allowance for State building codes to exceed Federal standards: DOE analyses of energy efficiency standards in many cases demonstrate that high efficiency products may be more economically justified in new buildings compared with replacement products. This is because some efficiency technologies require not only changes in the equipment but in how the equipment is installed in a building. Since whole-building standards can address both equipment features and how the equipment is installed in a building's infrastructure, such codes can sometimes address the efficiency improvements more economically than equipment standards alone. But currently due to federal preemption, building codes cannot take advantage of such economically viable energy efficiency opportunities because they cannot specify equip-

ment standards that are more stringent than Federal standards. An alternative approach to this same issue might be to provide DOE with authority to promulgate different standards for replacement equipment compared to equipment that is installed in new homes.

Sec. 3. Energy Conservation Standards for Heat Pump Pool Heaters

DOE is currently regulating gas heaters for pools and this provision would regulate heat pump water heaters which are the comparable type of equipment for households in warmer climates and with electricity-only energy supplies.

Sec. 4. Efficiency Standards for Class A External Power Supplies

DOE estimates that the specified products only very rarely operate under no-load conditions. These proposed provisions address comments that DOE received in its public workshops concerning external power supply regulation. In the rulemaking DOE did not have the ability to respond to these comments noting that the statute did not allow DOE to grant an exemption from no-load requirements.

Sec. 5. Prohibited Acts.

Currently, DOE's authority to enforce its energy and water conservations standards is limited to certain entities engaged in specific conduct. This provision expands DOE's enforcement authority to include representatives of manufacturers, distributors, and retailers, which will help to ensure effective enforcement of our energy conservation standards throughout the distribution chain.

Sec 6. Outdoor Lighting

This section ends production of inefficient mercury vapor lamps and sets initial standards for outdoor lighting luminaires. These provisions are also consistent with on-going DOE activities to set efficiency standards for particular high intensity discharge lamps and lamp ballasts.

Sec. 7. Energy Efficiency Provisions

(a) Direct final rule for test procedures: This provision may allow for more timely updates of test procedures in some cases.

(b) (1) (A) (i) Inclusion of impact on average energy prices as criteria: DOE believes that the clearest economic impact that energy conservation standards have on consumers and the country, is the impact on their energy bill. DOE already evaluates energy bill impacts in its standards rulemakings. In many cases, an energy conservation standard will decrease consumers' energy bills while the average price of energy increases. In many cases incremental average energy price changes may be weakly correlated, or even negatively correlated with either consumer or national economic impacts.

(b) (1) (A) (i) Inclusion of smart grid impacts as a criteria: This provision provides clear legislative intent to DOE to specifically address smart grid capabilities and features that the clearest economic impact that energy conservation standards have on consumers and the country, is the impact on their energy bill. DOE already evaluates energy bill impacts in its standards rulemakings. In many cases, an energy conservation standard will decrease consumers' energy bills while the average price of energy increases. In many cases incremental average energy price changes may be weakly correlated, or even negatively correlated with either consumer or national economic impacts.

(b) (2) Rebuttable presumption: In general, DOE promulgates standards based on the criteria in 42 USC 6295(o)(2)(B), but the "rebuttable presumption" provisions proposed in the act would allow DOE to set cost-effective standards using alternative methods. However, in many cases, an analysis based on the seven factors could lead to more energy savings than that on the rebuttable presumption.

(c) Obtaining appliance information from manufacturers: DOE is currently reviewing its existing certification and information collection requirements to determine how they can be streamlined and improved. This provision authorizes DOE to collect additional information that DOE may use in its compliance, monitoring and enforcement activities. Accurate and comprehensive information is a prerequisite to effective enforcement of DOE's energy conservation standards. Coordination with other federal agencies, states, and third-party verification programs will help to rationalize this vital information gathering effort and ensure that DOE has the information it needs, while minimizing reporting burdens and duplication to the extent possible.

(e) Permitting States to Seek Injunctive Enforcement. This provision would permit state attorneys general to seek injunctive enforcement for violations of federal conservation standards in U.S. District Court, with notice to DOE. It provides DOE an opportunity to intervene in any such actions. This broadening of enforcement authority and the additional resources of State enforcement agencies will help to ensure efficient enforcement of our standards throughout the country.

S. 1696—THE GREEN GAMING ACT OF 2009

This legislation requires DOE to conduct a study of video game console energy use. DOE is aware of the potentially significant energy savings potential of a wide range of miscellaneous energy uses that are not covered equipment. Such miscellaneous end uses also include such common household items as: set-top boxes, audio-visual and home entertainment equipment, cordless telephones, coffee makers, computers, computer displays and monitors, computer networking equipment, ground fault circuit interrupting outlets, printers, and home security systems.

Currently, DOE has the regulatory authority to cover new products if they meet certain criteria. The average annual per-household energy use by products of such type is likely to exceed 100 kilowatt-hours (or its British thermal unit equivalent) per year (42 U.S.C. 6292(b)). However, in terms of establishing energy conservation standards for newly-covered consumer products DOE's authority is limited by particular threshold criteria. In 42 U.S.C. 6295(l)(1)(A), which specifies the requirement that "the average per household energy use within the United States by products of such type (or class) exceeded 150 kilowatt-hours (or its British thermal unit equivalent) for any 12-month period ending before such determination."

Currently the bill states: "On completion of the initial study the Secretary shall determine by regulation, whether minimum energy efficiency standards for video game console energy use should be established." However, the proposed legislation does not specify the criteria that DOE should use in determining if standards should be established.

If standard-setting is dependent on the threshold in 42 U.S.C. 6295(l)(1)(A) it is not clear at this time if video game consoles would satisfy this criteria.

Barring explicit legislation for a long list of specific miscellaneous products, the biggest factor that determines whether or not DOE has the authority to set standards for a specific consumer product is the value of the threshold criteria contained in 42 U.S.C. 6295(l). Given compliance with the threshold criteria, DOE has existing authority to study and regulate any miscellaneous end use.

S. 2908—THE WATER HEATER RATING IMPROVEMENT ACT OF 2009

This legislation gives DOE the authority to redefine the efficiency descriptor for water heaters marketed for both commercial and residential applications. Currently, some categories of water heaters are marketed for both commercial and residential applications, which use different test procedures and metrics. The boundary between commercial and residential applications is currently mandated by statute. The proposed legislation would allow greater flexibility in formulating regulations for large residential and small commercial water heaters and would allow DOE to make adjustments in test procedures and energy metrics to match standards and test procedures more closely with existing market conditions.

S. 3054—STANDARDS FOR SPAS, WATER DISPENSERS, AND COMMERCIAL FOOD CABINETS

DOE has the regulatory authority to cover these new products after performing a coverage determination. Typically, the simple payback period of the energy conservation standards promulgated recently by DOE are substantially longer than the simple payback periods reported by the manufacturers of these products. In light of this, DOE is actively considering inclusion of these categories and other miscellaneous products under existing authority.

TOP TIER LEVELS AND PROGRAMS

As the Committee is aware, last year DOE and EPA updated their agreement on roles and responsibilities for how the ENERGY STAR program is managed. As described in the enhanced program plan for ENERGY STAR products, released in December 2009, EPA will manage a new top tier program, in consultation with DOE, that will be nested in the existing ENERGY STAR program. EPA and DOE are currently exploring how this program might best be structured.

Secretary Chu has spoken favorably regarding the concept of a top tier category for ENERGY STAR. He has noted that such a designation would give companies key marketing positions for ultra-efficient products that would reduce consumer's energy bills by even more over their lifecycles. Such a market designation would also provide incentives for inventors, innovators and manufacturers to propel appliance and equipment technologies to new heights of energy efficiency. DOE analyses indicate that many high efficiency products are technically possible but are not yet on the market. For example, cutting edge television technologies can reduce energy use by 70 percent compared with the traditional cathode ray tube. Yet, there is no program to help consumers easily identify products in this top tier of performance. While cost

and lack of performance information may be reasons that these energy saving technologies have not been deployed commercially, a top tier category could provide incentives for manufacturers to find ways to bring such technologies to market more cost effectively and may provide information to consumers who may have preferences for buying them.

There are also a significant number of consumers who experience very high electricity costs. For example, in regions like Alaska and Hawaii electricity can cost 3 to 5 times the national average. The economically optimum energy efficiency for appliances and equipment for such consumers is typically much higher than what is either provided by the market or by more general designations like ENERGY STAR.

Creating a viable market niche for cutting edge efficiency technologies will provide a setting in which experimenters and innovators can test their ideas, evaluate consumer response to new technologies, and learn how to make cutting edge technologies cheaper and economically viable for a larger market.

CONCLUSION

DOE is continually working to seize the opportunities provided by energy efficiency to achieve greater energy savings, reduce electricity consumption, and lower GHG emissions. There are many opportunities for further improvements in the energy efficiency of appliances and products that consumers and businesses use every day. Therefore, the Department is continuing to establish commercial and residential appliance standards. DOE is constantly modernizing, improving, and tailoring the Appliance and Commercial Equipment Standards Program to respond to changing market conditions, while being responsive to legislative and regulatory requirements.

Thank you again for the opportunity to discuss the Department's work on appliance standards. I am happy to answer any questions Committee Members may have.

The CHAIRMAN. Thank you very much.
Mr. McGuire.

STATEMENT OF JOSEPH M. MCGUIRE, PRESIDENT, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS (AHAM)

Mr. MCGUIRE. Thank you, Chairman Bingaman, and thank you for the opportunity to testify today on S. 3059.

On behalf of the home appliance industry, I want to thank you and Senator Murkowski for crafting this consensus bill and for working with all affected stakeholders.

AHAM's members include the producers of the vast majority of appliances sold in the United States and all of North America, for that matter. While our membership is global, our industry employs hundreds of thousands of people in the United States in manufacturing, engineering, sales, and marketing.

The appliance industry worked hard for enactment of the National Appliance Energy Conservation Act of 1987, which laid the foundation for uniform Federal appliance efficiency standards. Since that time, we have concluded several successful negotiations with efficiency advocacy groups, States, and other stakeholders on new and revised appliance efficiency standards. These agreements, some of which have been enacted into law, have delivered enormous energy savings to consumers.

S. 3059 builds on these successes by opening the door to perhaps the most dramatic energy savings yet attributable to home appliances. The bill will encourage the manufacture and use of smart appliances, which when fully deployed across the country will possess the potential to shift 295 gigawatts of energy demand, which exceeds the total capacity of nuclear and hydro power generation. It does this by recognizing the potential benefits to the environ-

ment and to consumers for such smart appliances operating in a smart grid environment.

It gives authority to DOE to provide a credit to future appliance efficiency standards, to manufacturers who invest in making these appliances smart grid enabled. AHAM strongly supports this provision.

We also believe that this incentive-based approach to the next generation of appliance standards foreseen by this bill can reach its full potential when coupled with the Best-in-Class Appliance Deployment Incentive Program that is currently under discussion by our industry, retailers, and efficiency advocates. We hope this program will be an additional consensus agreement that this committee and the Congress embrace in an act to help fulfill the smart grid vision.

To some extent, we have become victims of our own success in the appliance standards process. The average refrigerator sold today consumes less energy than a 60-watt light bulb. Just since 2000, refrigerator energy consumption has decreased 30 percent. Annual operating costs for a refrigerator in the 1970s were \$259 a year. Today's Energy Star refrigerator operating costs are about \$48 per year.

But the remaining relative gains in terms of energy efficiency, particularly when measured against consumer costs and necessary manufacturing investment, are limited. Your legislation recognizes the benefits to the consumer, the environment, and energy conservation goals that can be achieved through the use of an appliance that can receive demand-response signals, such as electricity cost or renewable energy availability, directly from the grid.

For the consumer, smart appliances will help save money on electricity bills without significantly changing their behavior. For the environment, shifting in appliance function from peak times of day to another will reduce the need for peaker power plants and their associated greenhouse gas emissions. Furthermore, reducing peak load provides relief to the grid during capacity-constrained periods, reducing line losses and reducing transmission congestion.

In the area of energy, smart appliances would increase deployment of renewable energy resources, which need load to be ready when the wind is blowing or the sun is shining. The ability of appliance loads to be available or stopped almost instantaneously can be a significant factor in the growth of renewable energy. Smart appliances will help level the demand curve for electricity throughout the day.

Going back to the consumer, a great example showing the benefits of a smart appliance compared to its counterpart measures the consumer benefit of increasing the efficiency, for example, of an Energy Star dishwasher to a more efficient level, such as the Consortium for Energy Efficiency Tier 2 levels.

For the traditional energy standard change, the yearly savings to the consumer is only about \$3.30. However, if the same Energy Star unit could operate at off-peak times, it can save the consumer as much as \$40 per year.

Mr. Chairman and Senator Murkowski, we believe there are significant energy, environmental, and consumer benefits to a smart grid. A key element of its success, however, is the use of smart

grid-enabled home appliances. But much consumer education is needed, as is enlightened energy policy.

We thank you both for taking this important step today. Thank you.

[The prepared statement of Mr. McGuire follows:]

PREPARED STATEMENT OF JOSEPH M. MCGUIRE, PRESIDENT, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS (AHAM)

Thank you Chairman Bingaman, Ranking Member Murkowski and members of the committee. I appreciate your giving me the opportunity to provide the appliance industry's views to the committee today. My name is Joe McGuire and I am president of the Association of Home Appliance Manufacturers (AHAM). I would like to convey the appliance industry's support for the energy efficiency provisions in the National Energy Efficiency Enhancement Act of 2010. The provision related to the Smart Grid provides an important building block for the next generation of energy efficiency, conservation and environmental protection attributable to home appliances.

AHAM represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. Our more than 150 members employ tens of thousands of people in the U.S. and produce more than 95% of the household appliances shipped for sale within the U.S. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

Mr. Chairman, I commend you and Senator Murkowski for listening to all stakeholders as you developed the National Energy Efficiency Enhancement Act of 2010.

OVERVIEW OF FEDERAL ENERGY STANDARDS

As this committee well knows, AHAM and its members are committed to providing energy efficient home appliances that have a direct positive impact on the lives of consumers. In the last 8 years, manufacturers have reduced energy consumption of home appliances by nearly 8 billion kWh.

AHAM was a strong supporter of the National Appliance Energy Conservation Act and have participated in several negotiated agreements with energy efficiency advocates, states and other stakeholders on appliance efficiency standards. Uniform standards throughout the U.S. and even throughout North America and beyond are preferable to a patchwork of disconnected state-by-state standards. These national standards have resulted in significant energy savings and as we know from the past several years have become the foundation for additional energy efficiency awareness and incentive policies that have generated additional energy savings.

As consideration is given to how much more energy savings can be achieved from home appliances, we need to be mindful of the huge gains that have been made and will continue. Refrigerators/freezers, dishwashers and clothes washers account for a 43% combined decrease in energy consumption since 2000. From a global climate change perspective, the energy savings realized in 2008 shipments of refrigerators, dishwashers and clothes washers versus 2000 models would offset the CO₂ emissions of more than 698 million gallons of gasoline consumed.

Clothes washer energy consumption has decreased by 63% since 2000 while tub capacity has grown by 8%. Dishwasher energy consumption has dropped nearly 30% and water consumption has declined 29% since 2000. Refrigerator energy consumption has also decreased 30% since 2000 and efficiency, measured by a unit's energy factor has increased 39%. The average refrigerator sold today consumes less energy than a 60-watt light bulb left on 24 hours a day.

The chart below shows the history and schedule of several home appliance standards.

EFFECTIVE YEAR OF STANDARD

	1988	1990	1993	1994	2000	2001	2004	2007	2010	2011	2012	2014	2015	2018
Appliance														
Refrigerators/Freezers		Original	1st Update			2nd Update						3rd Update		
Room Air Conditioners		Original			1st Update							2nd Update		
Clothes Dryers	Original			1st Update	Reviewed							2nd Update		
Clothes Washers	Original			1st Update			2nd Update	3rd Update		4th Update			5th Update	
Dishwashers	Original			1st Update					2nd Update					3rd Update
Kitchen Ranges and Ovens		Original									Reviewed			
Dehumidifiers								Original			1st Update			
Microwave Ovens											Original			

Current law provides a framework to ensure federal standards balance a number of factors so that the final efficiency standard provides real energy savings. It makes no sense to establish a standard so stringent that it penalizes consumers and manufacturers and slows the rapid deployment of new much more efficient products. The Energy Policy and Conservation Act establishes a process for federal energy conservation standards and makes clear that no standard can be set which may result in loss of product availability in popular styles and prices, and product functions consumers want.

SMART APPLIANCES IN THE FUTURE

The Smart Grid is an exciting development that will modernize the current grid. The objective of the Smart Grid is to provide technology and systems (integrated into appliances and consumer devices used in everyday activities) that will allow consumers to automatically control their energy use and costs. AHAM provides a unique perspective to the Smart Grid Vision because many of the products AHAM members manufacture must be part of our nation's future Smart Grid.

In establishing policy on the development of a Smart Grid, the Energy Independence and Security Act of 2007 requires integration of Smart Appliances and consumer devices that can interact with the Smart Grid. This law also requires that consumers be provided with timely information and options for controlling energy use. The U.S. government's Smart Grid Vision is that these goals can and should be met without causing significant disruption or lifestyle changes for the consumer. AHAM fully supports this Vision. Consumers should receive valuable and understandable information about their energy use and costs, thus enabling them to make intelligent and informed choices about how and when to use energy. Armed with this knowledge, consumers will be empowered to use energy more efficiently and to save money on electricity.

As mentioned above, over the years the appliance industry has made great gains in improving pure energy efficiencies. However, although there is still room to improve in this area, today the gains are much more significant in the area of demand response and grid load management. The Federal Energy Regulatory Commission found that residential homes offer as much demand response potential as small, medium, and large businesses combined. Today, the average refrigerator uses about the same energy as a 60 Watt light bulb. A 10 percentage increase in pure energy efficiency would yield 6 Watts. However, deferring a defrost cycle can yield hundreds of Watts.

In order to advance the Smart Grid, incentives need to be established for manufacturers to make Smart Appliances while the transmission and distribution system is modernized. The potential gains in this area are great, including increased use of renewable energy, fewer peaker plants and resultant emissions and less line losses in the transmission of electricity.

Two very important incentives that Congress should embrace are the Best-in-Class Appliance Deployment program and credits for meeting new appliance efficiency standards for smart grid capable appliances. Still under discussion, the Best-in-Class Appliance Deployment program is a focused and effective incentive program that provides financial incentives to manufacturers willing to invest in the development of Smart Appliances and recognizes that an inherent part of Smart Appliances is energy efficiency. The Best-in-Class Appliance Deployment program will be an extremely effective incentive program to build the Smart Grid in an effective manner.

S. 3059, the National Energy Efficiency Enhancement Act of 2010, authorizes the Secretary of Energy to provide credits to manufacturers on meeting new appliance efficiency standards for products that are smart grid capable. In other words, the Secretary can encourage manufacturers to produce smart appliances by adjusting the stringency of a new appliance standard. The trade off in added appliance efficiency would be equaled or outweighed by the load shifting and grid efficiencies that would result from consumer use of such appliances.

These incentives would provide the necessary financial and regulatory incentives to encourage deployment of smart and efficient appliances nationwide and provide a great impetus to the development of the Smart Grid. AHAM strongly believes that the provisions in S. 3059 regarding smart grid credits cannot be fully realized without enactment of the Best-in-Class Appliance Deployment program providing incentives for deployment of smart grid enabled appliances.

SECTION 7, NATIONAL ENERGY EFFICIENCY ENHANCEMENT ACT OF 2010

As the committee considers the National Energy Efficiency Enhancement Act of 2010, I would like to provide the appliance manufacturing industry's views on the energy efficiency provisions.

ADOPTING CONSENSUS TEST PROCEDURES PROVISION

The comprehensive standard setting process starts with updating the test procedure taking into consideration—

1. Consistency across products
2. New technologies
3. Testing of new procedures for repeatability, uniformity, burden, simplicity, and representativeness

Current law on test procedures wisely requires a balance between measuring actual field energy use (which is highly variable) with the cost, uniformity and repeatability parameters required for test procedures for products mass-produced globally. But, developing test procedures is difficult and requires resources at the Department of Energy. We support authorizing consensus test procedures to be adopted more quickly when the industry and others agree. It makes sense to allow non-controversial test procedures to be “fast tracked,” i.e., they can be promulgated in a direct final rule if they meet certain criteria subject to subsequent sufficient negative comment such that a regular rulemaking is required.

The National Energy Efficiency Enhancement Act of 2010 would allow out dated test procedures to be updated more quickly and using less scarce resources at DOE by creating an expedited procedure for approve test procedures that have consensus support. Similar authority exists in law for the standards. It makes sense to extend this to test procedures, which are the foundation of any energy standard work. The current refrigerator test procedure that DOE uses is from 1979, while AHAM’s latest version is from 2008 and we are working on making revisions to that one.

CRITERIA FOR PRESCRIBING NEW OR AMENDED STANDARDS PROVISION

Once a test procedure is established, work on an energy standard can progress, which includes an analysis to determine what standard provides benefits exceeding the burdens. The factors in law that must be considered are as follows:

1. Economic impact on manufacturers and consumers, retailers, distributors and society.
2. Savings in operating costs through the life of the product compared to price increase and maintenance costs.
3. Total energy or water savings.
4. Lessening of the performance.
5. Lessening of competition (Department of Justice opines).
6. Need for national energy and water conservation.
7. Other factors the Secretary of Energy considers relevant.

The National Energy Efficiency Enhancement Act of 2010 expands this statutory list of considerations to include the estimated impact on average energy prices and the net energy, environmental, and economic impacts due to smart grid technologies or capabilities. The latter is an important and helpful provision to the development of the Smart Grid.

SMART APPLIANCES AND THE SMART GRID

AHAM’s member companies are interested and involved in the development of the Smart Grid and the policies surrounding a Smart Grid in the United States. A Smart Appliance has many advantages to bring to the Smart Grid. One of which is that a Smart Appliance provides a faster resource to a destabilized electrical grid. A Smart Appliance, or load, can be managed instantly, whereas generation, or a reserve power plant, needs to ramp up creating a lag in a needed response, which can further aggravate the instability problems. This faster response over a short duration can be a quite compelling complement to the increased use of intermittent renewable energy.

A Smart Appliance may have some of the following key features:

- Dynamic electricity pricing information is delivered to the user, providing the ability to adjust demand of electrical energy use.
- It can respond to utility signals, contributing to efforts to improve the peak management capability of the Smart Grid and save energy by—
 1. providing reminders to the consumer to move usage to a time of the day when electricity prices are lower, or
 2. automatically “shed” or reduce usage based on the consumer’s previously established guidelines or manual overrides.

- Integrity of its operation is maintained while automatically adjusting its operation to respond to emergency power situations and help prevent brown or blackouts.
- The consumer can override all previously programmed selections or instructions from the Smart Grid, while insuring the appliance's safety functions remain active.
- When connected through a Home Area Network and/or controlled via a Home Energy Management system, Smart Appliances allow for a "total home energy usage" approach. This enables the consumer to develop their own Energy Usage Profile and use the data according to how it best benefits them.
- It can leverage features to use renewable energy by shifting power usage to an optimal time for renewable energy generation, i.e., when the wind is blowing or sun is shining.

The Best-in-Class Appliance Deployment program would incentivize manufacturers to make Smart Appliances as smart meters and dynamic pricing is being worked on and implemented across the more than 3,000 utilities in the U.S. Incentives are an essential part of the development of the Smart Grid in a timely manner. We need to move past the "chicken or the egg" mentality that no one wants to pay for a smart meter if there are no Smart Appliances in the home, and no one wants to use a Smart Appliance if there is not a smart meter and dynamic pricing program. The Best-in-Class Appliance Deployment program would alleviate this problem by authorizing financial incentives to manufacturers to build Smart Grid capable appliances for the home.

We believe the Best-in-Class Appliance Deployment program needs to be authorized along with the energy efficiency provisions in the National Energy Efficiency Enhancement Act of 2010. It is critical that incentives are provided to manufacturers to innovate and take investment risks in the area of Smart Appliances to ensure that we are not paralyzed by smart meters waiting for Smart Appliances and Smart Appliances waiting on smart meters. The appliance consumer, who is also an electricity ratepayer, can reap benefits from Smart Appliances before dynamic pricing is brought into their home, such as through sensing through the wires of problems on the grid or use of feedback information to show energy usage. However, dynamic pricing will open the door to much more capability and allow the consumer to save even more money on their electricity bill.

We would also request that the committee consider clarifying the bill language through the committee report that Smart Appliances will help increase the use of renewable energy and that the consideration of net benefits attributable to a smart grid capable appliance as it relates to Smart Grid credits to an energy conservation standard should include the impacts to the potential increased use of renewable and low emission energy attributable to the appliance standard. An example of this concept is that if a dishwasher can be set to run when the wind is blowing or when the sun is shining, then a credit should be given for this capability to recognize the energy efficiencies derived outside of the technical test procedure calculations, such as line losses, less peaker plants, increased renewables, and many others.

OBTAINING APPLIANCE INFORMATION FROM MANUFACTURERS PROVISION

Regarding the provision to require the Department of Energy to promulgate regulations to require manufacturers to submit information to the agency, we are pleased that the provision ensures information requirements are based on product type and not a "one size fits all" approach. Each product has different requirements that should be considered. Also, it is good that the provision requires the Department of Energy to minimize burdens on the manufacturers, use existing public sources of information, including nationally recognized certification or verification programs of trade associations; whether some or all of the information is submitted to another Federal agency and to minimize any duplication of requests for information by Federal agencies; and coordinate with State agencies to mitigate reporting burdens.

WAIVER OF FEDERAL PREEMPTION PROVISION

The essential principle behind the underlying Energy Policy and Conservation Act (EPCA) is that national uniformity can be maintained with a series of vigorous national standards which save energy, water, carbon and consumer's money while maintaining product utility, moderate prices, a competitive manufacturer base, and minimizing the negative impact on domestic employment.

There is a critical need for coordination and integration of federal regulatory scheme because of the enormous cumulative regulatory burden on the appliance industry of investing in new designs for multiple products over many years while at

the same time meeting increasingly challenging and related environmental requirements such as ozone depletion and climate change.

Federal preemption of states developing 50 different energy efficiency standards is a critical part of maintaining a national marketplace and not disrupting interstate commerce. The National Energy Efficiency Enhancement Act of 2010 does not allow the Secretary of Energy to reject a petition from a state to seek a waiver of federal preemption if the State does not have confidential information maintained by any manufacturer or association of manufacturers, but only if the state has requested the information and did not receive it. This is an important point because we would like to be asked for any information the state is after and be able to comment on any possible energy standard they may be considering. Again, related to the notion of having a fair chance to comment and make our views known to a state agency in the area of energy efficiency standards, this provision allows the Secretary of energy to approve a waiver petition submitted by a State that does not have an energy plan but only if it is based on a regulatory process that is subject to a notice and comment rulemaking proceeding.

PERMITTING STATES TO SEEK INJUNCTIVE ENFORCEMENT PROVISION

Our views on the provision permitting states to seek injunctive enforcement are grounded in the basis that this is a federal law and therefore it should be in a federal court, that the federal agency should have the opportunity to take over a case a state is considering, and that there should be a federal interpretation of the law and issues so that manufacturers are subject to 50 differing interpretations, which would impede interstate commerce.

RECOGNITION OF ALTERNATIVE REFRIGERANT USES PROVISION

AHAM is very supportive of incentives to move to low Global Warming Potential refrigerants. However, appliances are manufactured for a national market and preferably a North American market. It would be a disincentive to manufacturers and create unnecessary uncertainty if every city and town across the U.S. could prohibit refrigerators from in a building through there building codes. We support the provision requiring notification to EPA when any such restrictions are proposed.

CONCLUSION

In conclusion, AHAM commends Senators Bingaman and Murkowski for the future focused provisions in S. 3059 regarding smart appliances and the smart grid. We encourage its enactment as well as the Best-in-Class Appliance Deployment program currently under discussions which has received strong support from several stakeholder segments. We look forward to continuing to work with the Committee on these issues. Thank you for the opportunity to testify and I look forward to answering any questions you may have.

The CHAIRMAN. Thank you very much.
Mr. Nadel.

STATEMENT OF STEVEN NADEL, EXECUTIVE DIRECTOR, AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY (ACEEE)

Mr. NADEL. OK. Thank you very much, Chairman Bingaman, Senator Murkowski, and hopefully, we will get some other Senators shortly.

I am here on behalf of the American Council for an Energy-Efficient Economy. We are a nonprofit research and education organization that has been working on energy efficiency standards since the 1980s. There is a long history to build on, and I think the 4 bills before you build on this tradition. We endorse and support all 4 bills.

Taking them individually, S. 3059, we thank both of you for introducing this bill. It incorporates consensus agreements in a number of areas, and I think it is a very useful addition to the appliance standards program.

This bill includes new air conditioner and furnace efficiency standards, adopting regional standards so that the efficiency levels, say, in Alaska will be higher on furnaces but lower on air conditioners than, say, Arizona or Florida, which I think really makes sense. Steve Yurek will be talking more about that, and in the interest of time, I won't go into the details.

Likewise, the bill includes new outdoor lighting standards that we negotiated with NEMA. Kyle Pitsor will talk about those, but we very much support those.

Then as Joe McGuire just pointed out, we have worked with AHAM, as well as the other associations, to work on a variety of reforms to the appliance standards program. He pointed out the smart grid section. There is also a number of other reforms.

Senator Menendez, last year at this hearing, had introduced a variety of reforms to the program. They got adopted by the House in their energy bill. We have been negotiating with the industry since Senator Menendez introduced his bill to kind of modify them a little and come up with a consensus that everyone can live with. That is now incorporated into 3059. It modifies the House language, and we are all pledged to support that, both for the Senate as well as for conference so that the House will then follow this modified Senate language.

Turning now to the other bills, Senator Menendez also has S. 3054, which adds appliance standards for three additional products—hot food holding cabinets, portable electric spas—also known as hot tubs—and bottle-type water dispensers. All 3 of these are in the House-passed bill.

We now have nine States that have adopted standards on some or all of these products. The efficiency levels are relatively modest. They have been in effect in a number of States for 5 years or more. They were based on Energy Star levels, at least 2 out of 3, from early this decade. They are a way to get started.

We have been working with the trade associations for these standards. The spa standard, a letter we just submitted yesterday with them. They do support Senator Menendez's bill. Likewise, NAFEM, the North American Food and Equipment Manufacturers, has said in an email that they do support the standards on hot food holding cabinets. When they get back from vacation, we anticipate submitting a letter from them as well.

In the case of the drinking water dispensers, there hasn't been a trade association. Just recently, the International Bottled Water Association says, OK, we will take this product up. They are now looking at things.

We have contacted all the manufacturers and got 2 of them to pay enough attention to it. Both of them said that they will support it. So I think these are consensus, and we urge you to incorporate that into the bill.

S. 1696, another Senator Menendez bill, the Green Gaming Act, would have the Department of Energy study whether to have gaming consoles included in the standards program, or are there other ways to improve them? These devices use a lot of energy. The new PlayStation 3, or relatively new, the Xbox 360, they use 100 to 150 watts when on. So if you are gaming—even if you are not gaming, you leave it on because you wanted to save the game and come

back where you left off, or you turn off the TV and forgot to turn off the Xbox, they still use 100 to 150 watts.

Now we heard Joe McGuire say the average refrigerator uses the equivalent of a 60-watt light bulb left on continuously. These gaming systems use twice as much energy when on. So the equivalent of 2 refrigerators if you leave them on all the time.

We think we need to be introducing power management to these. They need to kind of go to sleep but then recover quickly if you don't use them for a while, and there are major energy savings. This particular bill would just have DOE study the issue.

There are 2 trade associations involved. One, the game manufacturers, I understand they support it. There is also the electronic equipment manufacturers, who oppose it. But this committee has a long history whenever there is disagreement to refer these issues to the Department of Energy to make a determination, and that is exactly what Senator Menendez's bill would do. It doesn't require standards. It says study them and only if they make sense do you go forward with a full rulemaking as well.

So we think this falls into the tradition of this committee of saying if there is a question, let us have DOE study that.

We also support the other bill, Senator Kohl's bill dealing with water heater standards. Then finally, I would note we recommend that these bills—we add to these bills a variety of technical amendments to previous legislation. EAct 2005, EISA 2007—both contained a variety of errors. Committee staff put together a whole series of technical amendments. They passed them onto the House that did adopt them as part of their bill. We recommend that those same technical amendments be adopted here because there is a variety of errors that are causing problems.

So, with that, thank you very much, and I am happy to answer any questions.

[The prepared statement of Mr. Nadel follows:]

PREPARED STATEMENT OF STEVEN NADEL, EXECUTIVE DIRECTOR, AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY (ACEEE)

SUMMARY

Federal appliance efficiency standards were first adopted in 1987 and were augmented by Congress in 1988, 1992, 2005 and 2007. The program has a long history of bipartisan support. My organization, the American Council for an Energy-Efficient Economy (ACEEE), estimates that without these standards and subsequent DOE rulemakings, U.S. 2010 electricity use and peak electric demand would be about 10% higher and U.S. total energy use about 5% higher. Net savings to consumers from standards already adopted will exceed \$400 billion by 2030 (2008 \$).

The majority of these standards have been set by Congress, based on consensus agreements between manufacturers and energy efficiency advocates. But where there is not consensus agreement, Congress has often delegated decisions to DOE, allowing each side to make their arguments and having DOE make the decision.

The four bills being considered in this hearing build on these solid foundations and we support these bills. We thank Senators Bingaman, Murkowski, Menendez, and Kohl for introducing these bills and moving the discussion forward on ways to improve the appliance standards program.

Collectively these bills will reduce U.S. annual electricity use by about 20 billion kWh in 2020 and 56 billion kWh in 2030. The 2030 electricity savings are equivalent to the amount of energy generated in a year by 14 typical 600-MW coal-fired baseload power plants. These standards will also reduce natural gas and propane use, including nearly 50 trillion Btu of these fuels in 2020 and more than 100 trillion in 2030. The 2030 savings are enough to heat 1.8 million average American homes for a year. These standards will also reduce 2030 greenhouse gas emissions

by 39 million metric tons of carbon dioxide, equivalent to taking 7 million cars off the road for a year.

We have negotiated the provisions in S. 2908, 3054, and 3059 with relevant trade associations and would call each of these consensus proposals. Achieving such consensus requires a few small modifications to the bills as filed; these are listed in the appendix to my testimony. In the case of S. 1696, one trade association is supportive and another is not. However, this bill only requires DOE to study opportunities for energy savings, including the possibility of standards, with a full rulemaking to follow if DOE's study finds that standards may make sense. This Committee has a long history of directing DOE to study an issue when consensus cannot be reached. S. 1696 falls into this tradition.

We recommend that all of these bills be grouped together and reported out of Committee on a bipartisan basis. We also recommend that technical corrections to recent appliance standards legislation be incorporated into this bill, including establishment of separate standards for service-over-counter refrigerators. We would be happy to assist Members and Committee staff with working out the details.

The federal appliance and equipment efficiency standards program is a great energy efficiency success story, with Congress adopting new standards in each of the last three decades. The ACELA bill, reported out last year, adds consensus efficiency standards on several products. The four bills before the Committee today should be reported out, combined with ACELA, and hopefully enacted by Congress in the next few months. This Committee has worked diligently in this direction and we thank you.

INTRODUCTION

My name is Steven Nadel and I am the Executive Director of the American Council for an Energy-Efficient Economy (ACEEE), a nonprofit organization dedicated to increasing energy efficiency to promote both economic prosperity and environmental protection. We were formed in 1980 by energy researchers and are celebrating our 30th anniversary this year. Personally I have worked actively on appliance standards issues for more than 20 years at the federal and state levels and participated in discussions that led to the enactment of federal standards legislation in 1987 (NAECA), 1988 (NAECA amendments), 1992 (EPAAct), 2005 (EPAAct), and 2007 (EISA). I also worked on the appliance standards provisions incorporated into the ACELA bill that this Committee reported out last year.

Without these laws, plus subsequent DOE rulemakings updating some of these standards, ACEEE estimates that U.S. 2010 electricity use and peak electric demand would be about 7% higher and U.S. total energy use about 4% higher. Net savings to consumers from standards already adopted will exceed \$300 billion by 2030 (2008 \$).¹

However, much more savings are possible through a combination of further updates to existing standards, plus adding new products to the federal standards program. ACEEE estimates that U.S. energy use in 2030 can be reduced by at least 2.1 quadrillion Btu (about a 2% reduction from projected levels) and carbon dioxide emissions can be reduced by at least 150 million metric tons, a 2.6% reduction from projected levels.²

Fortunately, the federal standards program has a long history of bipartisan support, at the Committee level, on the House and Senate floors, and from Presidents of both major parties: standards laws have been signed by Presidents Ford, Carter, Reagan (two laws), George H.W. Bush, and George W. Bush (two laws).

The foundation of these laws was adoption of consensus standards negotiated between appliance manufacturers and energy efficiency advocates. ACEEE has been involved in all of these negotiations. Most federal standards build on previous state standards: after several states adopt standards on a product, manufacturers generally prefer uniform national standards to a patchwork of state standards. But where manufacturers and efficiency advocates disagree, Congress has commonly delegated decisions to DOE, allowing each side to make its best case and then having the Secretary of Energy decide.

The four bills that are the subject of this hearing build on these solid foundations. We support all four of these bills:

1. S. 3059, the National Energy Efficiency Enhancement Act.

¹Neubauer, et al. 2009. Ka-BOOM! The Power of Appliance Standards: Opportunities for New Federal Appliance and Equipment Standards. Washington, D.C: American Council for an Energy-Efficient Economy. [Http://aceee.org/pubs/e091.htm](http://aceee.org/pubs/e091.htm).

²Ibid.

2. S. 3054, to establish efficiency standards for bottle-type water dispensers, commercial hot food holding cabinets and portable electric spas.
3. S. 1696, Green Gaming Act.
4. S. 2908, Water Heater Rating Improvement Act.

We thank Senators Bingaman, Murkowski, Menendez, and Kohl for introducing these bills and moving the discussion forward on how best to improve the appliance standards program. In the sections below I comment on the provisions in these bills and also on some additional provisions that we recommend be added to increase the energy savings achieved and improve the appliance standards program's processes.

THE NATIONAL ENERGY EFFICIENCY ENHANCEMENT ACT (NEEEA)

The heart of this bill is two consensus agreements that ACEEE and other energy efficiency supporters negotiated with equipment manufacturers. One agreement addresses new standards for residential furnaces, air-conditioners, and heat pumps. The other addresses outdoor lighting fixtures. In addition, NEEEA contains a variety of provisions we negotiated with the Association of Home Appliance Manufacturers (AHAM) and other trade associations on improvements to the process by which DOE sets and implements standards. And NEEEA also contains several other standards-related provisions. We discuss each in turn.

Residential Furnaces, Air-Conditioners, and Heat Pumps

On October 13, 2009, the nation's leading manufacturers of residential central air conditioners, furnaces, and heat pumps signed an historic, voluntary agreement with the nation's leading energy efficiency advocacy organizations supporting new federal standards for those products. For the first time, the agreement calls for regional efficiency standards to replace a quarter-century of national standards, and it also permits stronger state building code provisions for new construction. This agreement is incorporated into S. 3059.

This agreement and this legislation sets different standard levels in three climate regions—North, South, and Southwest, recognizing that appropriate investments in heating and cooling efficiency depend on usage, and efficiency levels that make economic sense in Michigan will generally be different from efficiency levels that make economic sense in Texas. Such regional standards were authorized under the Energy Independence and Security Act of 2007 (EISA). Specifically, relative to current federal standards, the agreement calls for higher furnace efficiency standards in the North, while leaving standards in the South unchanged. Conversely, the agreement increases air conditioner efficiency in the South, while leaving standards in the North unchanged. In the Southwest, the agreement builds on the basic southern standard by adding requirements for efficiency under hot dry conditions, which are particularly common in the Southwest. National standards are set for heat pumps (used for both heating and cooling) and oil furnaces (primarily used in the North and sales are too low in the South to justify a separate standard).

The agreement and this legislation also allow states to include even higher efficiency levels for heating and cooling systems in new homes. New houses can be built without physical restrictions that might hinder installation of highly efficient equipment—as there might be when replacing equipment in an existing home. This new approach strikes a balance between the desire for greater state and regional flexibility and the need for a uniform marketplace, and looks to the nation's long-term energy future by supporting the most efficient new systems where they are most cost-effective.

Under EISA, details on implementing and enforcing these regional standards will be worked out by DOE in a rulemaking. We have been talking to equipment wholesalers about some of these issues and expect to share shortly a couple of small refinements to this section of S. 3059 that we jointly recommend.

The new standards are projected to save U.S. consumers about \$13 billion in today's dollars between 2013, when the new standards begin to take effect, and 2030—taking into account the incremental cost of the more efficient equipment. Between now and 2030, the agreement also will save 3.7 quadrillion Btu of energy nationwide, which is equivalent to all the energy consumed by approximately 18 million households in a single year, or enough to meet the annual energy needs of either Georgia, Massachusetts, Michigan, Missouri, North Carolina, or Virginia. By 2030, the standards are projected to reduce peak electric needs by 4,150 MW, equivalent to the output of nearly 14 new 300-MW peaking power plants.³ The new standards would raise the minimum efficiency of residential central air conditioning

³For peaking power plants we use 300 MW for a typical power-plant size. For base load power plants, 600 MW is a typical size.

systems by about 8 percent and furnaces by about 13 percent, and would result in a 5 percent reduction of the total heating energy load and a 6 percent reduction of the total cooling energy load in 2030.

These energy savings will result in annual greenhouse gas emission reductions of 23 million metric tons of carbon dioxide in 2030, an amount equal to that produced by approximately 4 million cars every year.

Outdoor Lighting Fixtures

On Nov. 3, 2009, lighting equipment manufacturers and energy efficiency organizations announced agreement on a legislative package that would create new minimum efficiency standards for many types of outdoor lighting products. The agreement was reached by the National Electrical Manufacturer's Association (NEMA), ACEEE, and several other energy efficiency organizations.

The agreement is incorporated into NEEEA and establishes initial efficiency standards for outdoor pole-mounted lighting fixtures, then calls on DOE to quickly set revised standards. Covered fixtures primarily light roadways and parking lots. These standards will also improve lighting quality from outdoor fixtures, since the most stringent standards apply to fixtures with high glare and light trespass. Standards are less stringent for fixtures with better glare and trespass control.

In addition, the agreement and legislation requires double-ended halogen lamps (a type of high-wattage incandescent lamp that is used outdoors) to meet specific efficiency requirements and prohibits sales of mercury vapor lamps as of 2016.

Congress and DOE have been steadily moving away from the use of the most inefficient types of incandescent light sources, most importantly with the provision in EISA that sets standards for general service incandescent lamps over the 2012-2014 period. Double-ended halogen lamps are a type of higher wattage incandescent lamp not covered by EISA. The standards in S. 3059 would require these higher wattage lamps to no longer use conventional incandescent technology, but to move to higher efficiency levels, such as those that can be that obtained with infrared reflective coatings.

New mercury vapor fixtures and ballasts were prohibited in the Energy Policy Act of 2005. These fixtures will generally be replaced with more efficient fixtures when existing ballasts wear out over the next 15 years or so. The provision in S. 3059 accelerates this transition, providing energy savings from 2016 (when the provision takes effect) until about 2030 (when most of these ballasts would be replaced anyway). Mercury vapor lamps use about 35% more energy per lumen of light output than more modern technologies that have been in widespread use since the 1980s. These newer, more efficient technologies are very cost-effective. Since new mercury vapor ballasts can no longer be sold, it is only older fixtures (overwhelmingly pre-2005 and primarily pre-2000 or so) that will be affected.

This agreement and legislation establishes modest initial standards for outdoor lighting equipment, but paves the way for big savings if DOE does a good job when setting revised efficiency standards. Only a minority of fixtures on the market today is affected by the initial standards; much larger savings will occur if the revised DOE standards move the average fixture to performance levels met by the better fixtures now on the market.

If enacted by Congress as new legislation, the agreed-upon new standards would reduce U.S. lighting energy use by about 24 to 42 billion kWh annually. ACEEE estimates that the initial standards will save about 12 billion kWh/year. The revised standards could increase savings by 12 to 30 billion kWh/year for total savings of as much as 42 billion kWh/year (or roughly enough power to meet the total needs of more than 3.6 million typical U.S. households). The long-term energy savings in 2030 are equivalent to the annual output of 14 new 600-MW baseload power plants (the typical size of a new coal-powered unit).

Improvements to the Appliance Standards Program

The House of Representatives, in the American Clean Energy Security Act (ACES) includes several improvements to the operation of the appliance standards program. A year ago, Senator Menendez provided witnesses at a March 19, 2009 hearing with some potential amendments that were similar to those in the House bill. Since then we have worked with the Association of Home Appliance Manufacturers and other trade associations to negotiate a set of modifications to the House provisions that we can all support for adoption by the Senate, and by House-Senate conferees. These provisions are contained in NEEEA. In general, these amendments free DOE and states from restrictions that have hampered implementation of the standards and related programs. None of these amendments would set new standards directly, and any concerns an interested party may have can still be raised as part of formal DOE and state rulemaking proceedings. These provisions relate to:

Multiple Metrics: The past two administrations have disagreed on whether DOE may set more than one standard for a product. For quite a few products Congress has imposed more than one standard for a product. This provision clarifies that DOE may set such standards, but provides a higher bar for setting such standards for residential air conditioners. This provision, without the air conditioner provision, passed both the House and Senate in 2007 but was left out of EISA at the last minute. With this air conditioner provision, it should be adopted this year.

Criteria for Proscribing New or Amended Standards: For many years, new and revised efficiency standards have been based on seven criteria described in the law. This provision would add an eighth criteria—the net energy, environmental, and economic impacts of any smart grid technologies that are incorporated into covered products. Such technologies can provide significant benefits, in appropriate applications, but not all applications are appropriate. This provision was included by the House in ACES and the NEEEA provision defines and improves upon the House draft. This provision also expands, clarifies, and refines the rebuttable presumption test in existing legislation and clarifies that the economic analysis of standards should look at the impacts of energy standards on energy prices. For example, DOE has found that higher furnace standards save enough natural gas that these standards can slightly lower natural gas prices for all customers, providing benefits for all U.S. consumers and businesses. Since NEEEA was introduced, we have had further discussions with several trade associations and now developing a few refinements to the smart grid language, which will be provided to Committee staff shortly.

State Performance-Based Building Codes: Under present law, states with performance-based building codes must use minimum-efficiency equipment when developing code requirements. Performance-based codes provide an overall level of performance and permit many paths for reaching these goals (e.g., more insulation, better windows, reduced air infiltration, or improved equipment). But when equipment is limited to only federal minimums, some states are finding they can't set strong enough codes to meet their energy and climate goals. Also, this part of federal law creates a loophole in performance-based codes, as builders exceeding federal minimums can install less insulation, even though insulation lasts for the life of the building while equipment lasts for only one to two decades. This provision allows states greater flexibility in performance-based codes to address equipment that is covered under federal appliance standards. This provision would allow states to use covered products with efficiency levels higher than the federal minimum in formulating their building codes, while keeping the framework of preemptive federal standards, and in the case of any prescriptive codes, requiring that codes provide at least one pathway for meeting codes using equipment at federal minimum efficiency levels.

Removing the Catch-22 from the State Waiver Petition Process: Under current law, federal standards preempt state standards, unless a state submits and DOE approves an application for exemption from preemption. Such an application must demonstrate that “such state regulation is needed to meet unusual and compelling State or local energy or water interests” and that such regulation “will not significantly burden the manufacturing, marketing, distribution, sale or servicing of the covered product on a national basis.” The detailed requirements for states to get waivers from federal preemption include submittal of information that may be obtainable only from manufacturers, who may oppose the waiver. The amendment would prevent DOE from denying a state a waiver from preemption for failing to provide information that manufacturers refuse to make available to the state. The amendment would also limit DOE from denying waivers if states do not have a formal state energy plan, provided the waiver petition is subject to an opportunity for public comment in-state. Even with these amendments, states would still have a difficult case to make, but these amendments at least make it possible to make the case.

DOE Collection of Key Data for Making Standards Decisions: The distribution of efficiency levels among products sold is a key piece of information for establishing new standards; however, DOE has sometimes failed to obtain such data in developing new rules. DOE usually asks for such information, but manufacturers sometimes decline to provide it. The amendment would require DOE to conduct a rulemaking to determine what data manufacturers must submit, inclusive of efficiency performance data, to enhance DOE decision making. DOE would decide how often to collect data, ranging from annually to once every three years. This new data collection would be coordinated with existing state and federal data collection. Existing law includes provisions to protect confidential data. Improved data will help DOE's decision-making process for standards,

and will also aid other programs such as ENERGY STAR. We are now discussing a few small refinements to this section with AHRI and will provide these to Committee staff shortly.

State Authority to Seek Injunctive Enforcement: Compliance with federal standards is essential for achieving the expected energy savings. Under current law, several unnecessary and burdensome restrictions are placed on the ability of state attorneys general to enforce federal standards within the state's own borders. There is no federal budget allocation for enforcement actions and, until the last few months, no significant federal enforcement was taking place. This amendment would allow a state to bring its expertise and resources to bear on compliance by enabling states to seek injunctive enforcement of federal standards in federal court on an equal footing with the federal government, provided the federal government is given proper notice and has not already brought action to address the same violation. All provisions of federal law apply. A similar provision was included in EISA for general service incandescent lamps. State ability to enforce federal standards should be extended to all regulated products.

Accelerated Adoption of Consensus Test Methods: EISA established a process by which DOE can adopt on an accelerated basis standards recommended by a group of broadly-representative stakeholders provided no other party raises objections that DOE determines require a more lengthy review process. This bill would allow this same accelerated process for adoption of similar consensus recommendations with respect to test methods.

Other Provisions

NEEEA also contains the following additional provisions that we support:

New standards for heat pump pool heaters (following standards contained in ASHRAE standard 90.1-2007, addendum y). There have been federal standards for gas-fired pool heaters for many years. These will be the first standards for efficient electric pool heaters. One missing agreement in the bill is a schedule for revising this standard. ACEEE and AHRI agree that this standard should be revised in parallel with the existing pool heater standard. Recommended legislative language will be provided to Committee staff shortly.

External power supplies and security equipment. EISA enacted new standards on external power supplies (the little black boxes at the end of many power cords), including standards for both no-load energy use, and for energy use when the product is in use. In the case of security equipment, the equipment is constantly in use. NEEEA contains a provision, negotiated with the Security Industries Association, that exempts external power supplies used with security equipment from the no-load standard until July 1, 2017. By then we expect all power supplies on the market to meet the no-load standard and this exemption will no longer be needed.

WATER DISPENSERS, HOT FOOD HOLDING CABINETS, AND ELECTRIC SPAS

S. 3054 (introduced by Senator Menendez) establishes federal standards for three additional products—bottle-type drinking water dispensers, commercial hot food holding cabinets, and portable electric spas. The proposed standards for all three products have been adopted in California, Connecticut, and Oregon, and were included in the House-passed ACES bill. In addition, Maryland, New Hampshire, Rhode Island, and the District of Columbia have adopted the proposed standards for bottle-type water dispensers and commercial hot food holding cabinets, and Arizona and Washington have adopted the proposed standard for portable electric spas. We urge this Committee to include S. 3054 in any new standards bill it reports out. All of these standards are cost-effective to consumers, as shown in the table below. In subsequent sections I briefly discuss each of these three products individually.

Covered Product	Average Annual Energy Savings Per Unit	Average Annual \$ Savings Per Unit	Average Lifetime Energy Savings Per Unit	Average Incremental Cost	Simple Payback Period
Portable Electric Spas	250 kWh	\$26.00	2,500 kWh	\$100	3.9 years
Bottle-Type Water Dispensers	266 kWh	\$27.00	1,988 kWh	\$12	0.4 years
Commercial Hot Food Holding Cabinets	1815 kWh	\$186.00	27,225 kWh	\$453	2.4 years

Source: ACEEE analysis

Commercial Hot Food Holding Cabinets

Hot food holding cabinets are used in hospitals, schools, and other applications for storing and transporting food at a safe serving temperature. They are free-standing metal cabinets with internal pan supports for trays. Most are made of stainless steel and are insulated; however, there are some models that are non-insulated and are often made of aluminum. The main energy-using components include the heating element and the fan motor.

The ENERGY STAR specification sets a maximum idle energy rate for hot food holding cabinets of 40 Watts per cubic foot of measured interior volume. Appropriate insulation in hot food holding cabinets is the key mechanism to meet this specification. Insulated cabinets also have the advantage of quick preheat times, less susceptibility to ambient air temperatures, and a more uniform cabinet temperature. The recommended maximum idle energy rate translates to a 76% annual energy savings of 1,815 kWh relative to a basic, inefficient model. These energy savings cover the estimated additional cost of more efficient units (\$453) within 3 years. EPA has estimated that as of 2008, 79% of the market met the proposed standard.⁴

In December 2004, the California Energy Commission adopted this level as a statewide minimum standard, effective January 2006. Subsequently the same standard has been adopted in Connecticut, Maryland, New Hampshire, Oregon, Rhode Island, and the District of Columbia. S. 3054 would adopt this standard as a federal standard.

The House bill and S. 3054 both limit this standard to units with an internal volume of 8 cubic feet or more. We have discussed this proposal with the relevant trade association, the North American Food Equipment Manufacturers, and they have indicated support for this provision in an email to Committee staff.

Portable Electric Spas (Hot Tubs)

Portable electric spas are self-contained hot tubs. They are electrically heated and are popularly used in homes for relaxation and therapeutic effects. The most popular portable spas hold between 210 and 380 gallons of water; however, some models can hold as much as 500 gallons. "In-ground" spas are not included in this category.

Over half the energy consumed by a typical electric spa is used for its heating system. Heat is lost directly during use and through the cover and shell during standby mode. Improved covers and increased insulation levels are key measures to improving efficiency and can decrease standby energy use by up to 30% for a spa of average-to-low efficiency. Another measure is the addition of a low-wattage circulation pump or improvements to pump efficiency that would generally save 15% of standby energy consumption of an average-efficiency spa. Automated programmable controls, which would allow users to customize settings based on predicted usage patterns, are a third measure to improve efficiency and could save roughly 5% of a spa's standby energy consumption.⁵

In December 2004, the California Energy Commission (CEC) adopted a maximum standby energy consumption standard of $5 (V^{2/3})$ Watts for portable electric spas where V = the total spa volume in gallons and $2/3$ means to the two-thirds power. Standby energy consumption represents the majority (75%) of the energy used by electric spas and refers to consumption after the unit has been initially brought up to a stable temperature at the start of the season and when it is not being operated by the user. The energy consumption calculation ($V^{2/3}$) used by CEC approximates total spa surface area, which is directly related to standby energy use. A maximum standby energy requirement indexed to total spa surface area thus requires spas of all sizes to be equally efficient.

The California standard is a modest initial effort and is probably met by the majority of spas now being sold. CEC estimates that the products meeting the standard cost \$100 more than basic models. At national average energy prices, this additional cost is covered within 4.3 years;⁶ however, the payback period varies considerably with regional temperatures and energy prices. For example, in New England states, with cold winters and higher than average energy prices, the payback is between 2.1 and 2.8 years. In warmer climates with lower energy costs, the payback is between 4 and 5 years.⁷

⁴ U.S. Environmental Protection Agency. 2009. ENERGY STAR Unit Shipment and Market Penetration Report, Calendar Year 2008 Summary. Washington, DC: U.S. Environmental Protection Agency.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

In 2007, Connecticut and Oregon subsequently adopted the California standard, and in 2009 Arizona and Washington also followed suit. We have discussed this standard with the relevant trade association, the Association of Pool & Spa Professionals (APSP), and worked with them to develop and agree to a number of refinements to the House legislative language. These refinements were incorporated into S. 3054. With these refinements, APSP has indicated support for this provision in an e-mail message to Committee staff.

We have one small clarifying technical amendment to S. 3054 that is provided in the appendix to my testimony.

Bottle-Type Water Dispensers

Bottled water dispensers are commonly used in both homes and offices to store and dispense drinking water. Designs include those that provide both hot and cold water and those that provide cold water only. In 2000, the EPA issued a voluntary ENERGY STAR performance specification for standby energy of 1.2 kWh per day and 0.16 kWh per day for “hot and cold” dispensers and “cold only” dispensers, respectively. “Hot and cold” water dispensers tend to be much less efficient than “cold only” because they must maintain water tanks at two temperatures in a small space. The greatest factor determining energy efficiency is insulation of the water reservoirs. Older models of “hot and cold” dispensers often do not have insulated hot water tanks, which increases heat dissipation and standby energy waste. Adding insulation between the tanks and increasing existing insulation levels can reduce standby energy waste. A Pacific Gas & Electric Co. report found that a reduction from the baseline “hot and cold” dispenser daily energy consumption of 1.93 kWh to the proposed 1.2 kWh would save nearly 38% of annual energy consumption. The slight cost (about \$12) to improve a basic unit to meet the proposed standard would be earned back in lower energy costs within about 6 months at national average energy prices. EPA data indicate that just over 40% of water dispensers sold meets the ENERGY STAR specification.⁸

In December 2004, the California Energy Commission adopted the ENERGY STAR standard for “hot and cold” dispensers as a mandatory standard, affecting units sold after January 1, 2006. Subsequently the same standard has been adopted in Connecticut, Maryland, New Hampshire, Oregon, Rhode Island, and the District of Columbia. We recommend that this same standard be adopted as a federal standard, as contained in S. 3054.

The trade association for this product is the International Bottled Water Association (IBWA). They are reviewing this proposal now. We have discussed this proposal with General Electric and Oasis International, two of the major manufacturers of this equipment, and both have indicated support for this standard. The General Electric support is based on a change to the House bill that is incorporated into S. 3054 of establishing a slightly less-stringent standard for units with a refrigerated compartment.

GREEN GAMING ACT

S. 1696, introduced by Senator Menendez, would require the Secretary of Energy to conduct a study of video game console energy use and opportunities for energy savings and, upon completion of the study, make a determination of whether minimum efficiency standards for video game consoles are warranted. If the Secretary determines that standards may be warranted, a full rulemaking then ensues. If the Secretary makes a negative determination and no standards are established, a follow-up study must be conducted within 3 years of the initial determination. We support this bill and its inclusion in any appliance standards bill reported out of the Committee.

The study and determination required by S. 1696 is timely. Recent growth in sales and use of video game consoles along with the increasing power demands of popular gaming systems and typical usage patterns make gaming one of the leading contributors to the growth in household energy consumption. A recent study by the Natural Resources Defense Council⁹ estimates the video game consoles found in more than 40% of U.S. homes consume some 16 billion kWh of electricity. Opportunities for energy savings from more efficient components and designs and incorpora-

⁸Nadel, et al. 2006. *Leading the Way: Continued Opportunities for New State Appliance and Equipment Efficiency Standards*. Washington, DC: American Council for an Energy-Efficient Economy. S. Environmental Protection Agency. 2009. *ENERGY STAR Unit Shipment and Market Penetration Report, Calendar Year 2008 Summary*. Washington, DC: U.S. Environmental Protection Agency.

⁹Natural Resources Defense Council. 2008. *Lowering the Cost of Play: Improving the Energy Efficiency of Video Game Consoles*. November.

tion of advanced power management features could cut gaming power use by more than half. These preliminary estimates suggest the need for more in-depth study of video game electricity consumption, technical options for improving their energy efficiency, and whether standards are warranted for these products.

Two trade associations have commented on this bill. My understanding is that the Entertainment Software Association supports the bill, while the Consumer Electronics Association opposes it. In this situation, this Committee has a long-tradition of directing DOE to study an issue and determine the best course of action. S. 1696 directs DOE to study the issue, and only proceed with standards if they are warranted. We believe S. 1696 follows previous Committee precedents and should be favorably reported out.

WATER HEATER RATING IMPROVEMENT ACT

S. 2908, introduced by Senators Kohl, Corker and Feingold, would require the Secretary of DOE to quickly amend the efficiency descriptor and accompanying test methods for water heaters covered by federal standards. The efficiency of residential water heaters is determined by a test procedure in 10 CFR Part 430, Energy Conservation Program for Consumer Products: Test Procedure for Water Heaters, which was developed to evaluate the relative efficiency of tank water heaters, the ubiquitous technology at the time. Unfortunately, experience has documented that this test procedure is flawed in that it gives biased results when extended to newer technologies, such as tankless water heaters. The current test uses six long hot water “draws,” when in fact field data show that about 40 draws, most quite short, are more typical. Tankless units are more efficient under the test procedure than with predominantly short draws. In addition, residential and commercial units are rated with totally different test procedures, which make it difficult to rate and compare units that might be rated for commercial use but used in a large residence (or visa versa). The rating method deficiencies cause problems for incentive programs such as tax credits because it is difficult to estimate energy savings and environmental benefits, making it difficult to set appropriate incentives. ACEEE has worked with manufacturers, AHRI, ASHRAE, and NIST to broaden understanding of the issues and launch work to develop a better rating method and test procedure. S. 2908 directs DOE and NIST to accelerate this work, so that an improved test procedure can be published within 180 days of enactment and take effect one year later. Our understanding is that work is already underway, which should make achieving this ambitious schedule possible. A few clarifications to S. 2908 are now being developed in coordination with manufacturers and will be provided to Committee staff shortly.

ENERGY SAVINGS

ACEEE has analyzed most of the efficiency standards discussed above. Overall, we estimate that these standards will reduce U.S. annual electricity use by about 20 billion kWh in 2020 and 56 billion kWh in 2030. The 2030 electricity savings are equivalent to the amount of energy generated in a year by 14 typical 600-MW coal-fired baseload power plants. These standards will also reduce natural gas and propane, including nearly 50 trillion Btu of these fuels in 2020 and more than 100 trillion in 2030. The 2030 savings are enough to heat 1.8 million average American homes for a year. These standards will also reduce 2030 greenhouse gas emissions by 39 million metric tons of carbon dioxide, equivalent to taking 7 million cars off the road for a year. Further details on our savings estimates are provided in the table below.

Annual Energy Savings	2020		2030	
	TWh	Tbtu	TWh	Tbtu
Air Conditioners	4.6	47.9	12.9	130.1
Furnaces (Residential)	-	46.1	-	107.5
Heat Pumps (heating)	3.0	31.7	8.6	86.1
Building Codes for AC & furnaces	2.4	31.0	6.6	81.0
<i>AC and Furnaces subtotal</i>	7.6	125.7	21.5	323.7
Tier 1 fixture	2.9	29.9	7.0	70.1
Mercury vapor lamps	0.5	5.1	0.3	3.4
Halogen lamps	1.0	10.7	1.0	10.3
Tier 2 fixture (based on 15% tier 2 savings)	5.3	55.8	18.7	188.3
<i>Outdoor Lighting subtotal</i>	9.7	101.5	27.1	272.1
Hot Food Holding Cabinets	0.1	0.8	0.2	1.6
Water Dispensers	0.2	2.6	0.3	2.7
Hot Tubs	0.1	1.4	0.2	1.9
<i>S.3054 subtotal</i>	0.5	4.8	0.6	6.1
Total	20.2	263.0	55.8	682.9

Emission Reductions (MMT CO ₂)	2020	2030
Air Conditioners	2.8	7.7
Furnaces (Residential)	2.4	5.6
Heat Pumps	1.8	5.1
Outdoor Lighting	5.8	16.0
Hot Food Holding Cabinets	0.01	0.03
Water Dispensers	0.05	0.06
Hot Tubs	0.03	0.04
Building Codes for AC & furnaces	1.7	4.7
Total	14.6	39.2

RECOMMENDED ADDITIONS

These four bills contain many worthy additions to the federal standards program. But as the Committee proceeds to markup, we recommend that a couple of items be added, as discussed below.

Technical Corrections

We recommend that the Committee pass the appliance, lighting, and commercial product standards technical amendments enacted by the House of Representatives last summer. These were passed as Section 161(a) and Section 162 of Subtitle G¹⁰ of the American Clean Energy and Security Act (ACES). The Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 enacted many new standards that will result in very large energy savings in the years ahead. Unfortunately, both laws contained serious drafting errors such as multiple non-conforming amendments to underlying law and language that was not adequately clear. Congress needs to act to correct these errors because some of the affected standards are scheduled to take effect soon. For example, the critical new standards for motors and general service lighting products require technical amendments and those standards take effect starting later this year and in 2012, respectively. We have worked together with the affected trade associations to reach consensus on these technical amendments. Since passage of the technical amendments as part of the House bill last summer, we have discovered two minor amendments to that language are needed. Therefore, we recommend that the Committee pass the technical amendments package contained in Subtitle G of ACES with two small additional amendments. These are provided in the appendix to my testimony.

Service-Over-Counter Packaged Refrigeration Systems

The Energy Policy Act of 2005 established efficiency standards for commercial packaged refrigeration equipment. One small category of specialized equipment was included with the same efficiency standards as larger units. This special category has display refrigeration underneath and a service counter on top. These are com-

¹⁰Section 161(b) concerns technical amendments related to other EISA provisions not related to standards.

monly used in deli's, bakeries, and lunch establishments. Manufacturers tell us that the current standards cannot be met with existing equipment. We have worked with manufacturers and their trade association, AHRI, to develop an alternative standard that is based on standards recently set by DOE for related equipment (the DOE standards are for a more efficient type of service-over-counter equipment that has remote rather than built-in compressors). Specific legislative language will be provided to Committee staff shortly.

Best-in-Class Appliance Deployment Program (BICAD)

The House ACES bill includes a provision (section 214) that provides rebates to retailers for sales of very high-efficiency equipment (top 10% of current models) and to manufacturers of even more efficient equipment. The provision helps encourage retailers to sell the best equipment, and encourages manufacturers to develop even more efficient equipment. When funded, the provision is designed to replace the current manufacturer tax credit for high-efficiency appliances. As currently written, the provision is dependent on future appropriations.

We think this is a promising program, but details are important. We do not support the House provision because many important details are missing (e.g., a focus on cost-effectiveness), other details are wrong (e.g., qualifying criteria are not revised frequently enough), and some incentives are overly generous and unlikely to be cost-effective to taxpayers or consumers.

We have been working with the BICAD coalition and are well along in developing an improved bill. Some critical details still need to be worked out (e.g., length of lock-in periods between revisions and incentive levels), but we are optimistic that a provision acceptable to all can be finalized in the next few weeks. Regarding lock-in periods, we need to balance the desire of retailers and manufacturers for long lock-in periods with the desire of consumers and taxpayers to revise standards when specific efficiency levels are no longer "best-in-class" (e.g., we don't want to face the problem that ENERGY STAR has had to address of revisions not happening frequently enough). With regard to incentive levels, we believe that these should be capped at the value of the lifetime energy, water, and peak demand savings that result from this equipment relative to average equipment being sold. In all likelihood, a provision meeting these criteria can be negotiated soon and provided to this Committee for consideration.

CONCLUSION

The four bills that are covered by this hearing all build on past bipartisan appliance standards bills and we support all four of them. Collectively these bills will, by 2030, reduce U.S. annual electricity use by about 56 billion kWh, equivalent to the amount of energy generated in a year by 14 typical 600-MW coal-fired baseload power plants. These standards will also reduce 2030 natural gas and propane use by more than 100 trillion Btu, enough to heat 1.8 million average American homes for a year. In addition, these standards will reduce 2030 greenhouse gas emissions by 39 million metric tons of carbon dioxide, equivalent to taking 7 million cars off the road for a year.

We have negotiated the provisions in S. 2908, 3054, and 3059 with relevant trade associations and would call each of these consensus proposals. Achieving such consensus requires a few small modifications to the bills as filed; these are either listed in the appendix to my testimony or will be provided to Committee staff shortly. In the case of S. 1696, one trade association is supportive and another is not, but this bill only requires a study. This Committee has a long history of directing DOE to study the issue when consensus cannot be reached.,. S. 1696 falls into this tradition.

We recommend that all of these bills be grouped together and reported out of Committee on a bipartisan basis. We also recommend that technical corrections to recent appliance standards legislation be incorporated in this bill, including establishment of separate standards for service-over-counter refrigerators. We would be happy to assist Members and Committee staff in working out the details.

The federal appliance and equipment efficiency standards program is a great energy efficiency success story, with Congress adopting new standards in 1987, 1988, 1992, 2005, and 2007. The ACELA bill, reported out last year, adds consensus efficiency standards on several products. The four bills before the Committee today should be reported out, combined with ACELA, and hopefully enacted by Congress in the next few months. This Committee has worked diligently in this direction and we thank you.

This concludes my testimony. Thank you for the opportunity to present these views.

APPENDIX: SPECIFIC LEGISLATIVE CHANGES

To S. 3059

On page 3, line 3, delete the word “may”.

RATIONALE: Congress adopted water-efficiency standards for these products in the Energy Policy Act of 2005 and EISA 2007; “may” no longer applies. The relevant trade association, the Association of Home Appliance Manufacturers (AHAM) has agreed to this change.

Since “smart” end-use appliances and equipment can interact with the grid in unexpected ways, NEMA suggests that DOE consult with NIST, which is charged by Congress to coordinate Smart Grid communications standards development. ACEEE concurs. Potential specific references to EISA 2007:

Page 64 Line 8 “(7) INCORPORATION OF SMART GRID TECHNOLOGIES.—The Secretary, in consultation with the Director of the National Institute of Standards and Technology, may incorporate smart grid technologies or capabilities into standards under this section, including through—

Page 65 Line 4 “(ii) other smart grid goals, including those as specified in Sec. 1301 of the Energy Independence and Security Act of 2007 (15 USC 17381).”.

Additional amendments to be provided shortly:

Schedule for revising new heat pump pool heater standard (AHRI and ACEEE) refinements to provisions on implementation of regional standards (HARDI, AHRI, NEMA, and ACEEE)

Refinements on smart grid (AHAM, AHRI, GridWise, and ACEEE)

To S. 3054

On page 4, lines 1-2, the bill reads, “(B) INCLUSIONS.—The term ‘portable electric spa’ includes—.” These inclusions are typical characteristics of a portable electric spa, but are not obligatory features. In order to avoid confusion, we recommend revising this language to read “(B) INCLUSIONS.—A ‘portable electric spa’ may include—.”

To S. 2908

Amendments to be provided shortly (AHRI and ACEEE)

RECOMMENDED ADDITIONS

Technical amendments

Add all of the technical amendments on appliance and equipment efficiency standards contained in the House ACES bill. These were originally developed by Senate Energy Committee staff and given to the House. They should also be adopted by the Senate. In addition, two other technical amendments are needed as follows:

(1) In section 161(a)(3), “(42 U.S.C. 6313(a)(1))” should be replaced by “(42 U.S.C. 6314(a)(1))”. RATIONALE: Provide the correct U.S. Code reference.

(2) In section 161(a)(12), the phrase “following lamp efficacy, new maximum wattage, and CRI standards.” should be replaced with “requirements shown in the tables.” RATIONALE: The tables include minimum product life requirements for some products in addition to the listed requirements.

Furthermore, to avoid the need for yet another round of technical amendments after this one, there are a couple of places where S. 3059 amends the same section of law as the House technical amendments. These amendments will need to be reconciled as noted below:

(1) Section 7(a) of the pending bill modifies the same section of law as section 161(a)(2) of the House-passed technical amendments.

(2) The paragraph numbering in Section 6(a)(3) of the pending bill will need to be reconciled with the corrections carried out by Section 161(a)(6) of the House-passed technical amendments.

(3) Section 5, paragraph 2 of the pending bill and Section 161(a)(16) of the House-passed technical amendments both correct duplicate paragraph numbering in section 332 of the underlying law. They should be reconciled.

Service-Over-Counter Self-Contained Commercial Refrigeration Systems

Suggested language will be provided shortly by AHRI and ACEEE.

The CHAIRMAN. Thank you very much.

Mr. Yurek.

**STATEMENT OF STEPHEN YUREK, PRESIDENT AND CEO, AIR-
CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE
(AHRI)**

Mr. YUREK. Thank you, Mr. Chairman, Senator Murkowski.

I am pleased to be here today to discuss our support for S. 3059 and S. 2908. My name is Steve Yurek, and I am the president and CEO of the Air Conditioning, Heating, and Refrigeration Institute. This is a trade association that represents the manufacturers of heating, cooling, water heating, and commercial refrigeration equipment.

To begin, I want to commend the committee and you—Mr. Chairman, Senator Murkowski—for these bills. We appreciate the opportunity to work closely with your staffs while they were being crafted, and we appreciate their willingness to take our suggestions and concerns into account.

I will briefly comment on the key provisions of these bills that we support. First, we strongly support S. 2908. This legislation requires the Department of Energy to conduct a rulemaking to consider the revision of its residential water heater test procedure. Updating the test procedure will ensure the accurate efficiency ratings for these products and will ultimately enable true energy savings.

Second, we are pleased that you included in S. 3059 the consensus agreement establishing for the first time an efficiency standard for heat pump pool heaters. This standard will provide stability in the marketplace by leveling the playing field to enable all manufacturers to compete fairly.

I also want to let you know that we recently reached an agreement with the advocacy groups to establish a Federal efficiency standard for a specific type of commercial refrigeration product known as service over-the-counter. This is the type of product from which you might, for example, grab a sandwich before you board an airplane.

This standard is necessary because legislation enacted by Congress in 2005 establishing Federal efficiency standards for commercial refrigeration products overlooked this product category. We will soon submit the agreement along with proposed legislative language to your committee for consideration. These agreements are excellent examples of industry and advocacy groups working together to achieve a common goal.

Finally, I want to express AHRI's support for provisions in S. 3059 that implement our consensus agreement on residential heating and cooling equipment. This agreement is another great example of us working together to save energy and improve the environment.

I would also like to affirm the statement you made when introducing the bill, Mr. Chairman. When discussing our consensus agreement, you said, "It is a testament to what can be achieved for the Nation when interest groups work together with a commitment to the common good." We are happy to have been able to do this for the common good.

Last October, residential heating and cooling equipment manufacturers joined with the environmental community to forge an

agreement on energy efficiency standards that will have a significant impact on U.S. energy demand for decades and that will protect the environment. We are pleased that the major provisions of this agreement are included in S. 3059.

The consensus agreement, which will begin to take effect in 2013, assumes final passage of this legislation, represents a major step forward in the Nation's drive to increase energy efficiency and shows that it is possible for industry and energy efficiency advocates to move beyond acrimonious debates and work together to address energy and environmental concerns.

It establishes efficiency standards for residential furnaces in 2 regions and for central air conditioners and heat pumps in three regions. In hotter areas like the Southeast and Southwest, the new standards for furnaces are appropriate for that climate. The same is true in reverse for air conditioners. In this way, the consensus agreement lays the groundwork for significant energy savings and makes heating or cooling homes more cost effective regardless of climate.

The agreement also contains an important provision that will allow the next generation of homes to be more energy efficient by providing States the option of adopting building codes for new construction with more stringent energy efficiency levels than they can under existing law.

In the past, equipment manufacturers and advocates would have fought over these regulations through rulemakings. Together, we have found a compromise that works and saves energy and protects the environment. It took about a year, but the results, once the agreement is fully implemented, will save the Nation about 3.7 quadrillion BTUs, or quads, of energy between 2013 and 2030. That is enough to provide for the energy needs of 18 million households for a year.

These energy savings will result in an annual greenhouse gas emission reduction of 23 million metric tons of CO₂ in 2030, an amount equal to that produced by approximately 4 million cars every year.

Finally, this agreement will ultimately save consumers about 13 billion in today's dollars, even considering the increased cost of more efficient equipment.

I will end with a plea. For this historic agreement to become reality, it must be enacted into law because some of the provisions currently the DOE does not have the authority to enact, such as the building code provisions. So if you do not act, these provisions will not become a reality.

Again, I want to thank the committee and your staff for their hard work in putting this bill together, and I want to thank you for the opportunity to testify.

[The prepared statement of Mr. Yurek follows:]

PREPARED STATEMENT OF STEPHEN YUREK, PRESIDENT AND CEO, AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE (AHRI)

Mr. Chairman and Members of the Committee:

I am pleased to be with you today to discuss our support for S. 3059 and S. 2908. My name is Stephen Yurek, and I am president and CEO of the Air-Conditioning, Heating, and Refrigeration Institute, or AHRI—the trade association that rep-

resents manufacturers of heating, cooling, water heating, and commercial refrigeration equipment.

To begin, I want to commend the committee and you, Mr. Chairman, for these bills. We appreciate the opportunity to work closely with your staff while they were being crafted, and we appreciate their willingness to take our suggestions and concerns into account. I will briefly comment on the key provisions of these bills.

First, we strongly support S. 2908. This legislation requires the Department of Energy to conduct a rulemaking to consider the revision of its residential water heater test procedure. Updating the test procedure will ensure accurate efficiency ratings for these products and will enable true energy savings.

Second, we are very pleased that you included in S. 3059 the consensus agreement establishing for the first time an efficiency standard for heat pump pool heaters. This standard will provide stability in the marketplace by leveling the playing field to enable all manufacturers to compete fairly. The agreement is also an excellent example of industry and advocacy groups working together to achieve a common goal, in this case more energy efficient heat pump pool heaters.

Finally, I want to express AHRI's support for provisions in S. 3059 that implement our consensus agreement on heating and cooling equipment—this agreement is another great example of industry and advocacy groups collaborating to save energy and improve the environment. I would also like to associate AHRI with the statement you made when introducing the bill, Mr. Chairman. When discussing the efficiency standard consensus agreement that's included in the bill, you said, and I quote, "It is a testament to what can be achieved for the nation when interest groups work together with a commitment to the common good." We are happy to have been able to do this for the common good.

Last October, residential heating and cooling equipment manufacturers teamed up with the environmental community to forge an agreement on energy efficiency standards that will have a significant impact on U.S. energy demand for decades and that will help protect the environment. We are very pleased that the major provisions of this agreement have been included in S. 3059.

The consensus agreement, which will begin to take effect in 2013—assuming final passage of this legislation—represents a major step forward in the nation's drive to increase energy efficiency and shows that it is possible for industry and energy efficiency advocates to move beyond acrimonious debates and work together to address energy, environmental, and economic problems.

It establishes efficiency standards for residential furnaces in two regions and for central air conditioners, and heat pumps in three regions. In hotter areas, like the southeast and southwest, the new standards for furnaces are appropriate for that climate. The same is true, in reverse, for air conditioners. In this way, the consensus agreement lays the groundwork for significant energy savings and helps make heating or cooling homes more cost-effective, regardless of climate.

The agreement also contains an important provision that would allow the next generation of homes to be more energy efficient by providing states the option of adopting building codes with more stringent energy efficiency levels than they can under existing law. In the past, equipment manufacturers might have simply opposed, on economic and marketplace grounds, stricter standards for energy use. At the same time, advocates might have sought stronger standards and, if unsuccessful, filed suit over efficiency standards they didn't find stringent enough. But at a time when government regulatory policies and an unpredictable economic climate have created uncertainty in the marketplace, our two groups sat down and worked things out cooperatively.

It took about a year, but the results, once the agreement is fully implemented, will save the nation about 3.7 quadrillion Btu (quads) of energy between 2013 and 2030. That's enough to provide for the energy needs of 18 million households for a year. These energy savings will result in annual greenhouse gas emission reductions of 23 million metric tons of CO₂ in 2030, an amount equal to that produced by approximately 4 million cars every year.

Finally, this agreement will ultimately save consumers about \$13 billion in today's dollars, even after considering the increased cost of more efficient equipment.

I will end with a plea: For this historic agreement to become reality in the national marketplace, it must be enacted into law. If we cannot do it in this bill, we must do it in another. Here's why:

Absent firm direction from Congress on this, the Department of Energy is continuing its rulemaking on the next iteration of efficiency standards for residential central air conditioners, heat pumps, and furnaces. While the Department can implement portions of the agreement, other portions such as the building code provisions require Congressional action. The new building code provisions in this agreement must be enacted by Congress, as DOE currently does not have the statutory

authority to promulgate them. If Congress does not act, those provisions will not become reality.

By taking the initiative, we have potentially saved the Department of Energy—and thus America's taxpayers—millions of dollars, and have saved DOE staff countless hours of work—hours that can be spent on other activities. I say “potentially,” however, because if Congress does not move quickly to enact this agreement into law, those dollars and man-hours will not be saved, and the effort we've collectively put forth and the compromises we've made will be for naught. That would be a sad thing for all of us, but particularly for taxpayers and for the environment.

Again, I want to thank the Committee and your staff for the hard work in putting this excellent bill together, and I thank you for the opportunity to testify, Mr. Chairman.

ADDENDUM: FACT SHEET ON AIR CONDITIONER, FURNACE, AND HEAT PUMP EFFICIENCY STANDARDS AGREEMENT (ESSENTIAL COMPONENTS INCLUDED IN S. 3059)

The nation's leading manufacturers of residential central air conditioners, furnaces, and heat pumps today signed an agreement with the nation's leading energy efficiency advocacy organizations that will establish new federal standards for those products. The agreement, which involved months of intense negotiations, was signed by executives of Air-Conditioning, Heating, and Refrigeration Institute (AHRI), the American Council for an Energy Efficient Economy (ACEEE), Alliance to Save Energy (ASE), the Natural Resources Defense Council (NRDC), the Northeast Energy Efficiency Partnership (NEEP), the Appliance Standards Awareness Project (ASAP) and the California Energy Commission (CEC), the Northwest Power and Conservation Council (NWPPCC), and more than a dozen individual furnace and air conditioner manufacturers.

This momentous agreement strikes a balance between the desire for greater state and regional flexibility and the need for a uniform marketplace. It also accounts for the long term energy future of the nation by allowing for more efficient systems to be installed in new homes which will last for many decades to come. The parties that reached this consensus agreement recognize that the time has to come to change the status quo with regard to energy efficiency in the residential built environment and believe this proposal represents a tremendous leap forward towards a more energy efficient future.

The signatories agreed to jointly submit this proposal to Congress and support its inclusion in the energy legislation currently under consideration. The groups will also recommend that the Department of Energy (DOE) promulgate a rule adopting the agreed upon regions and efficiency standards, as authorized in current law.

Creating Regions

Under the agreement, the U.S. is divided into 3 regions: (1) the north, comprised of states with population-weighted heating degree days (HDD) equal to or greater than 5000; (2) the south, comprised of states with population-weighted HDD less than 5000; and the southwest, comprised of Arizona, California, Nevada, and New Mexico. The regions are shown on the map.* The federal minimum energy efficiency standards are shown in Table 1. In the north, most furnaces will be required to have an efficiency of 90% or more, essentially requiring condensing furnaces. This is a change from the current national standard of 78%. In the south, central air conditioners will be required to have a SEER of 14, up from the present national requirement of 13 SEER. Heat pump and oil furnace standards will rise on a nationwide basis. The standards apply to residential single-phase air conditioners and heat pumps less than 65,000 Btu/h of cooling capacity (except through-the-wall and small duct high velocity products), and single-phase weatherized and non-weatherized forced-air furnaces (including mobile home furnaces) below 225,000 Btu/h heat input. or split air conditioners, minimum EER values (energy demand on a very hot day) also are specified for the states of Arizona, California, Nevada, and New Mexico.

* Map has been retained in committee files.

Table 1: Minimum Federal Standards (Retrofits)

System Type	≥ 5000 HDD	< 5000 HDD	CA/AZ/NM/NV
Split A/C	13 SEER	14 SEER	14 SEER /12.2 EER <45,000 Btu/h 14 SEER /11.7 EER ≥45,000 Btu/h
Split HP	14 SEER /8.2 HSPF	14 SEER /8.2 HSPF	14 SEER /8.2 HSPF
Package A/C	14 SEER	14 SEER	14 SEER/11.0 EER
Package HP	14 SEER/8.0 HSPF	14 SEER/8.0 HSPF	14 SEER/8.0 HSPF
Gas-Pack (weatherized)	14 SEER/81% AFUE	14 SEER/81% AFUE	14 SEER/81% AFUE
Gas Furnaces (non-weatherized)	90% AFUE	80% AFUE	80% AFUE
Oil Furnaces (non-weatherized)	83% AFUE	83% AFUE	83% AFUE

SEER = seasonal energy efficiency ratio; EER = energy efficiency ratio; HSPF = heating seasonal performance factor; AFUE = annual fuel utilization efficiency.

In addition, under the agreement, DOE would be required to publish a final rule not later than June 30, 2011, to determine whether standards for through-the-wall and small duct high velocity air conditioners and heat pumps should be amended. New standards would apply to products manufactured on or after June 30, 2016.

Building Codes

The agreement would amend the Energy Policy and Conservation Act (EPCA) to allow building codes to provide for building energy budgets and baseline building designs to include covered equipment having an efficiency greater than the federal minimum standard, up to specified levels, as long as at least one option is made available to meet the code through the use of covered equipment at the federally established minimum level. The agreement sets new construction/major renovation standards for each region that states may incorporate into their building codes. These are summarized in Table 2.

Table 2: Energy Efficiency Standards for Performance-Based Building Codes (for new construction and significant-up sizing only)

System Type	≥ 5000 HDD	< 5000 HDD	CA/AZ/NM/NV
A/C	14 SEER	15 SEER	15 SEER/12.5EER<45,000 Btu/h 15 SEER/12.0 EER ≥45,000 Btu/h
HP	15 SEER /8.5 HSPF	15 SEER /8.5 HSPF	15 SEER /8.5 HSPF
Gas Furnaces	92% AFUE	90% AFUE	92% AFUE
Oil Furnace (non-weatherized)	85% AFUE	85% AFUE	85% AFUE

Note: Performance-based codes will also allow 14 SEER/8.0 HSPF packaged systems and 81% AFUE weatherized gas furnaces, provided additional efficiency measures are installed to compensate for the difference in energy use between these systems and the corresponding values for the region in Table 2.

These requirements would not apply to simple one-for-one replacement of products in existing buildings as long as the replacement would not result in an increase in capacity of more than 12,000 Btu/h for central air conditioners/heat pumps or more than 20 percent for other covered products.

Implementation Timetable

The new standards will take effect in 2013 for non-weatherized furnaces and in 2015 for air conditioners, heat pumps, and weatherized furnaces.

The effective date for the next iteration of the above standards will be:

- January 1, 2019 for non-weatherized furnaces
- January 1, 2022 for air conditioners/heat pumps and weatherized furnaces (gas-packs).

Multiple Metrics

The agreement allows DOE in the future to use more than one efficiency metric for a product. However, in the case of air conditioners and heat pumps, the stakeholders agreed to work together to try to negotiate future efficiency metrics, and DOE can act on its own to establish new metrics only if the stakeholders cannot reach agreement after a year of discussion.

Energy Equivalents

Between now and 2030, the agreement also will save 3.7 quadrillion Btu of energy nationwide, which is equivalent to all the energy consumed by approximately 18 million households in a single year, or enough to meet the annual energy needs of either Georgia, Massachusetts, Michigan, Missouri, North Carolina, or Virginia. The new standards would raise the minimum efficiency of residential central air conditioning systems by about 8 percent and furnaces by about 13 percent and would result in a 5 percent reduction of the total heating energy load and a 6 percent reduction of the total cooling energy load in 2030.

These energy savings will result in annual greenhouse gas emission reductions of 23 million metric tons of CO₂ in 2030, an amount equal to that produced by approximately 4 million cars every year.

Monetary Saving

The new standards are projected to save U.S. consumers about \$13 billion in today's dollars between 2013, when the new standards begin to take effect, and 2030—taking into account the incremental cost of the more efficient equipment.

Engineering Data Release

High performance equipment works best and saves the most money when matched to specific climates. To help contractors and consumers select the most appropriate equipment, manufacturers will make two types of information available in standard form, for use in electronic tools. They will publish the Sensible Heat Ratio (SHR) at 82F, a measure of the ability to remove moisture at part load. This is particularly important in humid regions. And, they will provide equipment performance data for each temperature bin. This will help software developers and contractors recommend the equipment that is most appropriate to very hot regions, for example.

Agreement Text

Full text of agreement can be found at www.ahrinet.org/content/agreementonenergyefficientstandards_985.aspx

The CHAIRMAN. Thank you very much. Mr. Pitsor.

STATEMENT OF KYLE PITSOR, VICE PRESIDENT, GOVERNMENT RELATIONS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

Mr. PITSOR. Good morning, Mr. Chairman and Ranking Member Murkowski.

I am Kyle Pitsor, vice president for Government relations for the National Electrical Manufacturers Association. NEMA's president and CEO, Evan Gaddis, couldn't be here today to deliver our testimony due to surgery and sends his regrets.

NEMA is the trade association of choice for the electrical industry, comprised of over 400 manufacturers, representing about 350,000 jobs. For more than 8 decades, NEMA has been at the forefront of developing electrical standards, promoting electrical safety, and providing solutions to our country's energy challenges.

It is my pleasure to provide our support for S. 3059, the National Energy Efficiency Enhancement Act of 2010, particularly section 6 on outdoor lighting. Because of the significant energy utilized by outdoor lighting, manufacturers, lighting designers, environmental advocates, and other stakeholders spent countless hours over the

past many months to develop a consensus provision that is contained in this legislation.

Back in March 2009, I had the opportunity to testify before this committee. I noted that we felt the time was ripe for the establishment of national energy efficiency standards for outdoor lighting. I am, therefore, pleased to sit here today to report that despite the complexities surrounding this provision, including some doubts that a consensus could be reached, we did arrive at a consensus provision that is contained in section 6.

This provision would set efficiency standards for the majority of pole-mounted outdoor lighting fixtures. As you drive home today, if you look at the tall street and parking lot lights illuminating the roadways, the parking lots, and local streets, each of these lights will be affected on a national level as a result of this legislation.

The standards set forth in three phases. The first phase, or Tier 1, becomes effective upon 3 years after date of enactment of this provision. It sets a light source efficiency standard which also would limit sky glow and light trespass into neighboring properties.

The Tier 2 standards would be developed through a rulemaking process at the Department of Energy, and Tier 2 would become effective on January 1, 2016, or 3 years after the final rule was published.

Finally, the Tier 3 standards would also be established through a DOE rulemaking procedure effective on January 1, 2021.

In addition to the tiered standards, this legislation also regulates the efficiency of 2 types of lamps that are primarily used outdoors, and it would end the manufacture of general purpose mercury vapor lamps in the year 2016.

I would now like to turn to several other provisions in the legislation. First, NEMA supports provisions in section 4, which clarifies the efficiency standards for Class A external power supplies used in certain security and life safety alarm systems.

Second, NEMA supports the amendments proposed to the underlying statute that are contained in section 5. We believe it is important that channel partners in the distribution and sale of federally regulated products share the responsibility, along with manufacturers, in making certain that consumers and end-users receive the benefit of purchasing energy efficiency products. We look forward to working with the committee and other stakeholders on perfecting amendments to this provision.

Finally, I would like to talk a few minutes on section 7 on smart grid. The inclusion of smart grid considerations in the energy conservation title recognizes the role and potential of logic-based intelligence and communications in efficiency. Providing for the consideration of smart attributes in future energy efficiency provisions is a forward-looking provision. Attached to my testimony are several suggestions, modifications we suggest to take into account the smart grid standards work that is being managed by the National Institutes of Standards and Technology, NIST, pursuant to Title 13 of the Energy Security Act of 2007.

Mr. Chairman, NEMA members are excited about the innovation opportunities and possibilities represented by this legislation. NEMA is pleased to lend our support for this legislation and the

leadership shown by you and Ranking Member Murkowski and your other colleagues in advancing this legislation.

Thank you for the opportunity for NEMA to testify, and we would be pleased to answer any questions.

[The prepared statement of Mr. Pitsor follows:]

PREPARED STATEMENT OF KYLE PITSOR, VICE PRESIDENT, GOVERNMENT RELATIONS,
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

Chairman Bingaman, Ranking Member Murkowski, and members of the committee, my name is Kyle Pitsor. I am Vice President of Government Relations for the National Electrical Manufacturers Association (NEMA). I appreciate this opportunity to testify on the importance of this significant legislation before the Committee.

NEMA is the trade association of choice for the electrical manufacturing industry. It represents a global network of more than 400 large, medium, and small businesses that manufacture products used in the transmission, distribution, control, and end-use of electricity, including the lighting technologies. For more than eight decades, NEMA has been at the center of developing electrical standards, promoting electrical safety, and providing solutions to our country's energy challenges.

It is my pleasure to provide our support for S. 3059, the National Energy Efficiency Enhancement Act of 2010, particularly section 6, Outdoor Lighting. This ground-breaking consensus provision will, for the first time ever, set federal efficiency standards for pole-mounted outdoor lighting.

In a 2007 Department of Energy report, it was estimated that outdoor lighting consumes more than 178 terawatt-hours annually. This is equivalent to the annual output of 25 nuclear power plants (1000 MW each) or 42 coal-burning plants (600 MW each).

Because of the significant energy utilized by outdoor lighting, lighting manufacturers, lighting designers, environmental advocates and other stakeholders have spent countless hours over the past year negotiating the details specified in the outdoor lighting provision contained in this legislation. Back on March 19, 2009, I testified for NEMA before this Committee noting that we felt the time was ripe for the establishment of national energy efficiency standards for outdoor lighting products, and noted that we hoped that a consensus proposal could be negotiated for Congressional consideration. I am therefore pleased to sit before you today to report that despite the complexities surrounding this provision and the varying stakeholder interests, including doubts by some that a consensus could be arrived at, that Section 6 on outdoor lighting is a win-win consensus provision.

Section 6 would set efficiency standards for the majority of pole-mounted outdoor lighting fixtures. To better understand the widespread impact of this agreement, as you drive home today, look at the tall street and parking lot lights illuminating the roadways, parking lots, and local streets; each of these lights will be affected, on a national level, as the result of this ground-breaking consensus.

Because of the multifaceted nature of this agreement, the standards set forth require three phases, or "tiers" for respective efficiency levels.

Three years from the enactment date of this provision, Tier 1 will become effective. In this phase, light source efficiency, expressed as minimum task lumen per watts (LPW), will be mandated. These LPW levels are based on specific lighting characteristics, such as backlight, up-light, and glare (BUG) ratings, which limit sky-glow and light trespass into neighboring properties.

Tier 2 standards will be established by the Department of Energy (DOE). Such standards must be published in a final rule by DOE no later than January 1, 2013, or 33 months after enactment, whichever is later. The requirements for Tier 2 become effective January 1, 2016, or 3 years after the final rule is published.

Finally, the Tier 3 standards will be established by DOE in a rulemaking beginning January 1, 2015. Tier 3 standards are only set if the DOE determines amended standards are necessary. If DOE determines in favor of setting Tier 3 standards, a final rule must be published by January 1, 2018, with an effective of January 1, 2021.

In addition to the tiered standards, this legislation regulates the efficiency of two types of lamps that are primarily used outdoors. After January 1, 2016, high output double-ended quartz halogen lamps (a type of high-wattage incandescent lamp) must have a minimum efficiency of 27 LPW for lamps with a minimum rated initial lumen value of 6,000 and a maximum initial lumen value of 15,000. Also, 34 LPW is required for lamps rated with initial lumen value greater than 15,000 and less than 40,000.

I earlier mentioned the significant energy used in outdoor lighting. Should this provision be enacted, it is estimated that by 2030, the annual savings will range from 25 to 42 terawatt hours (billion kWh) per year (equivalent to 3 to 6 nuclear power plants or 6 to 10 coal-fired plants)—and annual savings of \$2.8 billion to \$5.1 billion on energy costs.

I would now like to turn to several other provisions in the legislation.

First, NEMA supports the provisions in Section 4, which clarifies efficiency standards for Class A external power supplies for certain security or life safety alarms. NEMA's signaling, protection, and communications member companies have participated in addressing these standards and their application to security alarm applications.

Second, NEMA supports the amendments proposed to the Energy Policy and Conservation Act (EPCA) contained in Section 5 on "Prohibited Acts." We believe it is important that channel partners in the distribution and sale of federally-regulated products share responsibility in making certain that consumers and end-users receive the benefit from purchasing energy-efficient products and equipment that meet federal minimum efficiency standards. Today, EPCA places that responsibility only on manufacturers and private labelers, which creates a loophole when it comes to compliance in the marketplace. The proposed language would ensure that all players in the manufacturing, sales, and distribution channels have a responsibility.

Finally, I would like to touch upon Smart Grid (Section 7). The inclusion of Smart Grid considerations in the energy conservation title recognizes the role and potential of logic-based intelligence in efficiency. Many devices today are approaching their theoretical maximum efficiency—large motors and distribution transformers, for example, are often 95 to 99 percent efficient. The next realm of conservation will come from "smart" devices that are communication-enabled and provide real-time cost and performance information to the end-user. Providing for consideration of "smart" attributes in future energy efficiency standards will also support our industry's efforts in innovation and design for the next generation of products. Attached to my testimony are several suggestions for modifications to the provision to take into account the Smart Grid standards work that is being managed by the National Institute of Standards and Technology (NIST) pursuant to Title 13 of the Energy Independence and Security Act of 2007. We would be pleased to discuss these suggestions with the Committee as the bill is considered.

Mr. Chairman, NEMA members are excited about the innovation possibilities and energy efficiency opportunities this legislation will support. Our members are leaders in providing energy-efficient solutions to meet our nation's energy challenges through our continuous research and development into new products and technological features. I am pleased to lend our support for this legislation and the leadership shown by you and your colleagues in advancing this bill.

Thank you, and I would be pleased to respond to any questions.

PROPOSED LANGUAGE TO SECTION 7 ON SMART GRID

Since "smart" end-use appliances and equipment can interact with the grid in unexpected ways, NEMA suggests that DOE consult with NIST, who is charged by Congress in coordinating Smart Grid communications standards development. Potential specific references to EISA 2007:

Page 64 Line 8 "(7) INCORPORATION OF SMART GRID TECHNOLOGIES.—The Secretary, in consultation with the Director of the National Institute of Standards and Technology, may incorporate smart grid technologies or capabilities into standards under this section, including through—

Page 65 Line 4 "(ii) other smart grid goals, including those as specified in Sec. 1301 of the Energy Independence and Security Act of 2007 (15 USC 17381).".

The CHAIRMAN. Thank you very much.

Before we go on to questions, let me defer to Senator Murkowski for any statement she would like to make, if she would like?

Senator MURKOWSKI. I have got nothing this morning.

The CHAIRMAN. OK. OK. Let me go ahead with a few questions then.

Let me start with a question to you, Ms. Hogan. You make reference to the fact that existing statutory language constrains the department's enforcement efforts in several ways. I think that is a

quote from page 4 of your testimony, and you did cite the statutory cap on penalties and the statutory process for assessing penalties as examples.

Could you provide the committee with DOE's specific recommendations for updating that statute in the enforcement area so that we could consider that?

Ms. HOGAN. We would really appreciate the opportunity to do just that, to develop some recommendations regarding the enforcement of these standards and to provide that in the form of technical drafting assistance.

The CHAIRMAN. That would be very helpful to us.

Mr. McGuire, let me ask, you made reference to this—to the potential of smart grid standards or use as integrated into the smart grid. You say that they cannot be realized, that potential cannot be realized without enactment of the Best-in-Class Appliance Deployment Program, providing incentives for deployment of smart grid-enabling appliances.

What is the status of the discussions or negotiations that are taking place there regarding this best-in-class, and do you think we will have an agreement in the next several weeks that we could consider if we are able to move ahead with legislation in this area?

Mr. MCGUIRE. Thank you, Mr. Chairman.

I think my point was that if best-in-class provision is also enacted, the full potential of the provision in your bill would be realized. I think when we are talking about modifying these appliance standards to encourage smart appliances, these standards would go into effect several years forward.

The best-in-class provision that is being negotiated would provide incentives earlier than that for manufacturers to get these products out so consumers could learn about them and use them and start taking advantage of them.

The negotiations are going on right now. I am confident that they will be successful. We look forward to having all the parties be able to come to the committee in the near future in time for legislation that could move.

The CHAIRMAN. All right. That would be useful. I think if we are able to proceed with the full Senate consideration of our legislation and able to report these bills as part of that, that would be very useful.

Steve Nadel, let me ask you, you in your testimony have proposed several amendments, refinements to the smart grid language in S. 3059, a package of technical amendments to EISA of 2007, a proposed standard for service over-the-counter refrigeration systems. I guess the request would be that to reduce confusion, could you be sure to try to submit them to the committee with a cover letter from both the energy advocates such as yourself and also interested manufacturing associations for these changes?

Mr. NADEL. Yes, we would be happy to. A lot of them we have already reached agreement on. Steve Yurek talked about the service over counter, he mentioned in his testimony. We are doing final wordsmithing now.

The rest of them are things we are, by and large, negotiating with people at this table, and we are just trying to do final wordsmithing.

The CHAIRMAN. OK. That is very good.

Why don't I defer to Senator Murkowski for any questions she has?

Senator MURKOWSKI. Thank you, Mr. Chairman.

I want to thank all of you who are here with us this morning and acknowledge your work as advocates and industry representatives, those folks really working together to make a difference here when it comes to efficiencies.

I will tell you I am at that point where it is like, boy, we are talking now about Xbox 360s and hot food holding cabinets and hot tubs, and the real question is, OK, we are going to go ahead and we are going to build this legislation and we are going to have these product standards in here. But I don't know about you, I have got teenage boys. My world is ever-changing when it comes to things, gadgets, things that use energy.

So, the question I think is fair and appropriate in terms of at what point is it appropriate to just say we here in Congress should not be in the business of legislating product standards? But I think we recognize that this technology moves pretty quick out there, and more quickly perhaps than the DOE rulemaking process.

I guess the question would be, and I probably know the answer based on the comments from this morning. But in your opinion, is it best that the standards are addressed through the congressional process, as we are doing here now, or at what point is the administrative process better suited to handle what we are dealing with?

I throw that out to any and all of you. Mr. McGuire, you are nodding first. I will let you go.

[Laughter.]

Mr. MCGUIRE. Thank you for noticing, Senator.

I think what we have here today is a great example of the manufacturers and the environmental groups realizing that something should be done and needs to be done. We have a history, if you look back at some of the recent standards agreements, of doing this in a more expedited fashion than DOE could through its administrative processes. If we can bring a consensus agreement to the Congress and the Congress agrees with it and enacts it, it is going to be implemented much sooner.

Now, DOE is going through some reforms, and that is good. But we really think this is a good way to get the energy efficiency delivered in a more expedited fashion.

Senator MURKOWSKI. Mr. Nadel.

Mr. NADEL. Yes, I would just add that we have a long history of working together. I first worked with Joe McGuire on negotiating some air conditioner standards that were in EPCAct 1992. So we know each other well. We can come up with creative solutions sometimes that is very difficult for DOE.

Also, DOE is very much backed up. They are catching up. Hopefully, they will catch up, and maybe they could do more of this. But we are able to do a lot of this stuff without distracting from the revision process they are doing.

Although I would note that DOE has recently announced they are about to start a television rulemaking, and that is a new product where DOE is taking the lead on.

Senator MURKOWSKI. I had appreciated that so many of you had come together with the agreement. When we were taking up the energy bill earlier last spring, you weren't quite ready at that point in time with the standards for the outdoor lighting, for the furnaces, and the air conditioners. Even though we had moved our bill out, that work continued, and I think that that was exceptionally important and speaks to the collaboration that goes on.

Mr. PITSOR, you wanted to add something?

Mr. PITSOR. I would just add that I think one other vehicle that the Congress has potentially put in place is the ability for DOE to go to a direct final rule, where there is a consensus deal between legislative cycles. If we are able to come together on a consensus proposal, the statute would allow us to provide that directly to DOE, and they could go to a direct final rule on an expedited basis if there is no objection.

So that would avoid Congress having to legislate it every time but provide that additional ability for DOE to go faster.

Senator MURKOWSKI. Let me ask another question, and this is about proprietary data. Do you think that the proprietary data is protected within the appliance standards program? How much of an issue is this?

Mr. YUREK.

Mr. YUREK. Senator Murkowski, I believe under the current provisions, it is. We have some concerns in the proposal, in the data information that is being requested under this legislation, where it is getting very specific, and we want to make sure and we have been working with Steve and the different groups to see how we can make sure we can address that by allowing that data to be aggregated by the trade associations rather than by individual manufacturers to help protect that confidentiality.

Senator MURKOWSKI. So are you comfortable with the bills that we have under review this morning, that that data is adequately protected?

Mr. YUREK. The current bill, we have some concerns, as I said. But we are working with Steve and the efficiency groups to see if we can put some language in there to allow the aggregation of data versus the responsibility on individual manufacturers for that information to be disclosed.

Senator MURKOWSKI. I didn't mean to ignore you at the end, Ms. Hogan. Obviously, coming from the department, you might have something that you want to say in terms of the comments that were made by the other gentlemen and whether or not we leave it to DOE through their rulemaking.

Ms. HOGAN. Certainly, we believe we can make tremendous progress through the DOE rulemaking efforts. I think one of the things we always look for when legislation does come through to set standards is the ability for the Department of Energy to go back and review and revise on a schedule that will deliver the savings that are there for the country.

Senator MURKOWSKI. Are you able to do that quickly enough, in your opinion?

Ms. HOGAN. I think we now believe the program that we have stood up at the Department of Energy can do what is necessary to

develop the standards that are there, and we have a fair amount of authority within which to do that.

Senator MURKOWSKI. Mr. Chairman.

The CHAIRMAN. Thank you very much.

Let me call on Senator Menendez. He has made a very substantial contribution to these efforts. He proposed a number of efficiency improvements when we did—we were considering ACELA this last year, and many of these are included in the consensus agreements that are incorporated in these bills.

So thank you for your leadership on this, Bob, and you go right ahead.

Senator MENENDEZ. Thank you, Mr. Chairman. Let me thank you and the ranking member for holding this hearing to improve energy efficiency standards for consumer products, which, in my mind, I think some of the best energy that we can create is one that we don't use in terms of both cost for consumers, the consequences in terms of energy usage, and reducing pollution.

So I am proud I have worked with both of you on the National Energy Efficiency Enhancement Act and glad we are able to include language similar to an amendment I offered last year authorizing the Department of Energy to use multiple metrics when establishing energy efficiency standards.

I am particularly grateful for the opportunity to consider 2 bills that I introduced, the Green Gaming Act and the Energy Efficiency Products Act. I am pleased to have worked on the Green Gaming Act with all the major console manufacturers—Nintendo, Sony, Microsoft—as well as the Entertainment Software Association and the National Resources Defense Council to develop the legislation.

All of these groups support the bill, which would require the Department of Energy to conduct a study to determine whether minimum efficiency standards are needed for video game consoles. Mr. Chair, I would like to submit 3 letters into the record documenting their support.

The CHAIRMAN. I would be glad to include them.

Senator MENENDEZ. Some consumers leave their game consoles on 24 hours a day. Depending on the console, that could use as much energy as 2 refrigerators, or \$160 per year in electricity costs. So I want to commend the industry for looking for ways to make their products more efficient. I know they have been working with the Department of Energy on volunteer efficiency standards under the Energy Star program. Voluntary standards may well be enough, but the legislation would ensure that the department considers whether mandatory minimum standards are also needed.

Just to shed a little light on this, Mr. Nadel, can you give us a sense of how prevalent video game consoles are in America and how much energy they use?

Mr. NADEL. My understanding is about 40 percent of American households have at least one of these video game consoles. As you pointed out, if they are left on all the time they can use 100, 150 watts continuously. That is as much energy as 2 refrigerators. So they are really an enormous source of energy use and one that has really grown in the last decade or so.

Senator MENENDEZ. If the consoles incorporated simple features like automatically powering off after, let us say, an hour of nonuse, how much would consumers save?

Mr. NADEL. Right. I mean, you mentioned a few minutes ago that if left on all the time they can use \$160 of electricity each year. If you can power off when not in use, that could save a good \$100 of that, so more than 50 percent savings.

Senator MENENDEZ. So I hope that that is an effort in which we are working with the industry to try to get to certain standards that both can help consumers save money, as well as save energy. I think the study puts us in a direction in which we can get what is the best way in which to achieve that goal I think is the next best step.

Then I would just like to turn to the Energy Efficiency Products Act, which would set Federal efficiency standards for bottle-type water dispensers, commercial hot food holding cabinets, portable electric spas. We had thought of naming the bill “the Hot Food, Hot Tub, Cold Water Act,” but that seemed a little unwieldy. So—

[Laughter.]

Senator MENENDEZ [continuing]. This bill proposes to make national the standards that several States have adopted for these products and thus end the regulatory patchwork currently facing manufacturers. We tried our very best to get as much consensus on efficiency bills.

Mr. Nadel, can you tell us where you are at or where is the progress with the industry on these three products, and have you heard any opposition to the standards in your negotiations?

Mr. NADEL. All right. Where we are now is in case of the spas, the hot tubs, as well as the hot food holding cabinets, we have gotten approval from both of the trade associations. One of them has already submitted a letter of support. One is working on that. So I think those 2 are consensus.

In the case of the water dispensers, we have gotten the 2 big manufacturers, Oasis and General Electric, to support. There is a slight modification to the House-passed bill in your bill in order to bring General Electric onboard, for example. So we really are trying to modify and get consensus.

There is a brand-new trade association, new to these products. The International Bottled Water Association, we just learned about them, and we gave them a copy of the bill a week ago. They are studying it. I am waiting for them to get back to us.

Senator MENENDEZ. Great. It seems like we have made progress, and we look forward to working with the industry and with you in achieving the goals.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much.

We received just yesterday a letter from the American Gas Association expressing concerns with section 2(e) of S. 3059, which requires furnaces manufactured after May 1 of 2013 for use in the northern region to have an efficiency of at least 90 percent. AGA proposes that this new standard only apply to new construction because the current provision “could ultimately encourage customers to repair rather than replace their furnace or, worse yet, not make

the needed changes in the common vented water heater venting system, which could result in a safety hazard.”

I don't know if this is something any of you folks—I guess, Mr. Yurek or Mr. Nadel, if either of you have a point of view on this proposal? I would like to include this letter from the AGA in the committee hearing record.

The CHAIRMAN. But if either of you have a comment? Mr. Yurek, go ahead.

Mr. YUREK. Yes, thank you, Mr. Chairman.

We have been in discussions with AGA over these concerns, along with the other advocates. Actually, some of these points were points that were part of the rulemaking that was occurring on the furnace before the Department of Energy.

There are some installations when you go to 90 percent where it is going to be more expensive. We saw the same thing in the air conditioning rulemaking before when we went from the 10 SEER to the 13 SEER. However, overall, the 90 percent makes sense for the northern region. It provides certainty and predictability for the manufacturers, as well as consumers.

One of the issues that we had to deal with in negotiating this consensus agreement was understanding where the DOE would be coming out in this rulemaking, as well as dealing with several States in the northern region, including the State of Massachusetts, that have passed legislation mandating 90 percent AFUE furnaces in their States. The State of Massachusetts has filed a waiver.

So, we have the issue of having 2 regions for furnaces as proposed in the 2007 Energy Act, one for the North, one for the South, or having multiple regions for different States as we see these waivers from these different States going forward. So we did take this into consideration.

I think there is an opportunity here to look at possibly incentives to help those consumers that will have very high, expensive installation because of going to the 90 percent. But I think, overall, what we came out with is the best solution, which is 90 percent for the north region and the 82 percent for the southern.

The CHAIRMAN. Mr. Nadel, did you have a point of view?

Mr. NADEL. Yes, I would add a few points. When the Department of Energy did their rulemaking a couple of years ago on furnaces, they did look at these retrofit costs and did find that in the North, it is cost effective, even with the extra retrofit cost, to go to the higher efficiency levels. It just takes so much natural gas to heat a home in these climates that even if it is a little more expensive to install, it is clearly cost effective.

If we were to limit the standard to just new construction, the savings would plummet. The vast majority of equipment that is sold is for existing homes, not for new construction. Also, new construction is much more likely to use the high-efficiency equipment in the first place because they can save having to install a chimney. So most of the savings are in existing homes. If we were to do as they suggested, it would just totally gut this bill.

In terms of the safety concerns, if a contractor misinstalls something, doesn't follow proper venting guidelines, yes, there could be problems. But the whole idea is these contractors are skilled pro-

fessionals. They are licensed. There is criteria that they need to apply in terms of proper installation. If they do that, there shouldn't be any safety problems.

I know in Massachusetts, as Steve Yurek pointed out, I have heard that a lot of people are going instead of trying to vent the water heater through the chimney, they just do a power-vented water heater instead and go right out through the side instead, totally avoiding the concerns that AGA states.

The CHAIRMAN. Ms. Hogan, did you have any perspective on this that we ought to be aware of?

Ms. HOGAN. No, I think I can thank Steve Nadel for summarizing our last rulemaking process and the cost effectiveness. We are currently in a rulemaking process on these product areas, and we will have information out soon in terms of our examinations.

The CHAIRMAN. OK. This letter does say that while the proponents of this provision may hope that mandating a 90 percent AFUE will result in more 90 percent furnaces, the result in the real world may well be the repair and continued operation of more 78 percent AFUE furnaces. Do either of you have a direct response on that? Do you think that is right or wrong?

Mr. YUREK. I think that is the pressure that you see in any rulemaking. We saw very good evidence of this again in the air conditioning—the last air-conditioning rulemaking, when it went from 10 SEER to 13 SEER, where because of that cost differential and the economy, some decisions were made to repair rather than replace. But ultimately, they are going to have to replace both their furnaces or their air conditioners. When they do, they will have to put in that higher efficiency equipment.

I think there are ways—and we have been working with the advocates and others to see how we can encourage people to trade out those lower-efficient equipment sooner rather than later. But I think as with any rulemaking, during that transition period, there is going to be some shifting to repair versus replacement.

The CHAIRMAN. Senator Murkowski, did you have additional questions?

Senator MURKOWSKI. Yes, I will follow on. I am just now reading this letter that you are referring to, Mr. Chairman, from the American Gas Association. Coming from Alaska's perspective, the northern of the most northern States and a State where just the costs that we face are extremely—I mean are overwhelming. When we talk about the need to retrofit, I can tell you most of the people that I am coming across are going to look to try to fix rather than to replace.

Now I notice that this is just as it relates to gas furnaces, and it does not include a mandate for the oil furnaces. I am assuming we are just talking about gas with this 90 percent?

Mr. YUREK. Right.

Senator MURKOWSKI. This is something that I am going to have to look into a little bit more because my initial concern is the impact to folks in my State could be considerable. So I would like to follow up with you on that if I can.

I just have one more question, and this is probably to you, Mr. Nadel. You got my attention when you were talking about the gam-

ing consoles and just the amount of energy that is consumed through the Xbox just being on.

When we are talking about energy efficiency improvements, where do we get the biggest bang for the buck? Is it targeting Government buildings like we are in now? Is it in residential? Is it in industrial, manufacturing, residential building? Where is it?

Where is the—not the easiest spot, but really, when we are talking about that biggest energy drain where we might be able to make a significant difference with the efficiencies, where do you identify it?

Mr. NADEL. There are lots of big opportunities that are not just focused in one place. In terms of percentage savings, probably the biggest opportunities are in commercial buildings. They use a lot of power, and there is a lot cost effective. Residential is in between. Industry, a little lower because they have done a lot more in general, because they have full-time engineers and they really are trying to manage their costs.

In terms of cost effectiveness, industrial is probably the most cost effective. There is still a lot of relatively low-hanging fruit a lot of industrial firms can do. Commercial is in between. Residential, while still cost effective, is a little bit more expensive just because there is that much they each use, and there are certain fixed costs.

Senator MURKOWSKI. One last question here. This is just how we communicate what it is that we know because so much—we are all talking about the smart grid. But you know, I am not going to see the smart grid implemented in Alaska in quite some time. But I can share information with constituents just about energy awareness so that people within their own homes or their small businesses can try to make a difference when it comes to their own energy use and consumption.

What efforts do we have, whether it is within DOE or within the trade associations, to really help educate people about being smarter when it comes to energy efficiency? I ask this question to different panels. So you guys are just the latest victims here. Mr. Yurek?

Mr. YUREK. Senator, as a trade association and all the trade associations here, as well as the advocacy groups, we spend a lot of our time and effort in education and trying to educate consumers about our products and how to use them wisely and efficiently.

We have done several joint programs both with the EPA and the Energy Star, as well as with the advocacy groups, talking about what a difference it makes on where you set the thermostat. You don't even have to have a programmable thermostat. It is great if you do. But even just changing it 1 or 2 degrees if it is for heating or for cooling can save significant amount of energy.

Or putting that programmable thermostat in for the purpose of when you are not in the home. Why do you need to have it heated during that period of time at the same level when you are walking around, or cooled if it is an area that needs cooling?

So, we provide that type of information to consumers. But it is very difficult to get that information out, and we all struggle with that because there are so many, just like any time going to the homeowners or individuals, of how best to communicate that information.

But I think if you look at any of our Web sites for any of the trade associations here, for ACEEE or any of the other energy advocacy groups, the Department of Energy, that information is there. We try to get people there as much as possible to educate them on what is best to use, as well as all of our members on their Web sites have this information on how to use their products efficiently.

Senator MURKOWSKI. But you have to have the desire to go to your Web site to find out.

Mr. YUREK. Right.

Senator MURKOWSKI. You are assuming that you are going to have a somewhat interested or educated consumer in the first place if they go to your Web site. Mr. Pitsor, Mr. McGuire?

Mr. MCGUIRE. Senator, I think one of the greatest accomplishments in the area of energy awareness for consumers has been the Energy Star program, which, in addition to appliance standards, has led to a lot of energy savings. The challenge there is to get consumers to realize that if they retired an appliance that isn't dead but is maybe 8 or 10 years old, buying a new one would save more money in the long run and even in a year because it is more efficient than repairing an older, less efficient unit.

That is the educational challenge because, for the most part, when people are in the stores looking for appliances, it is a rush situation. So Energy Star has done a great job. The Appliance Rebate Program, as part of the stimulus bill that the Congress enacted, part of that was to get consumers aware and in stores thinking about the value of energy efficiency not only to save energy, but for disposable income.

Just in terms of where the low-hanging fruit is and what is the easiest, the most energy to save, demand response has been a major success in the consumer and industrial world. But in the residential sector, that is where the greatest potential for future benefits from demand response lie, and that gets into the smarter appliances that can deal with the smart grid or, in some cases, not even in a smart grid can help shift load and make a real difference toward energy savings.

Senator MURKOWSKI. Are there tradeoffs between being smarter and being more efficient?

Mr. MCGUIRE. There don't have to be. I think what the decision point is, for example, as in the Department of Energy, where they are looking at new refrigerator standards. It is the third-generation refrigerator standard.

OK, a refrigerator today uses as much energy as a 60-watt light bulb. If you improve that by 10 percent, you are saving 6 watts. But if you shift a refrigerator's defrost cycle to a nonpeak time of day, you are shifting 300 watts. So where is the bang for the buck in terms of the investment? The hundreds of millions of dollars that manufacturers have to put into a new product to meet new standards.

It is different for different products. But I think the refrigerator is a good example where greater use of demand response through smartness can make a more profound difference for the environment and for the consumer than the next level of efficiency.

Senator MURKOWSKI. Ms. Hogan.

Ms. HOGAN. We have a number of efforts underway at the Department of Energy that fall into that educational bucket. I think one of the things we are learning is that folks need to have a good way to compare what their energy use is in their home relative to the other homes around them.

So, one of the efforts we are undertaking that came out through the Recovery through Retrofit report, which was led by the Vice President's office, is an effort to stand up a system that helps people compare the energy of their home to others like them, sort of an energy guide label for a home. People really don't know if their home is using a lot more or a lot less energy relative to their neighbor's home, and that turns out to be a very powerful piece of information, particularly when homes are fairly similar in design.

So we are looking at this as something that can be stood up with some amount of analytical work, but fairly quickly, and then can be rolled out in partnership with utilities and others who have access to that type of data. This will really give homeowners the information they need to, first, understand how their whole home performs and then, second, look at what those cost-effective opportunities are for improving their home.

Senator MURKOWSKI. Mr. Nadel.

Mr. NADEL. Just to add a little bit terms of smart grid and smartness, it often can save. It doesn't always save. A lot of it depends on the particulars of what the product is, how you move it. You know, yes, you can move something 300 watts, but it is only on 20 minutes a day. So there is only so much cost.

There are some other ways to get at this. There is a company called Opower, for example, that uses a mail-based system rather than smart meters or the Internet. President Obama actually visited them earlier this week, and that might be an example of the type of system that would be a little bit simpler and could be applied to some of the Alaskan utilities even long before they get into smartness. So there are opportunities there.

Also, coming back to the whole retrofit question and repairs, in the case of a furnace, what typically puts a furnace out of commission is the heat exchanger gets damaged, and it is very hard to repair a heat exchanger. Yes, if a blower goes, you can replace that. But you are typically only buying a few years with the repair and not another 10 or 20. So they all will need to be repaired relatively quickly.

I would also point out there are lots of opportunities for retrofit programs to help people, as Mr. McGuire pointed out, to accelerate the retirement of those energy hogs. I know the REEP program that was part of ACELA would actually do that, and I understand you are having a hearing tomorrow on HOMESTAR, which is nearer term way to do that.

Mr. PITSOR. Senator, I would just comment also from NEMA's point of view. We maintain a Web site to provide information on the commercial building tax deduction that was enacted by Congress in EAct '05 that provides incentives for building owners to improve the efficiency of commercial buildings. We continue to see a rapid increase in terms of inquiries about—or wanting to learn more about tax incentives and tax deductions and what makes economic sense in terms of renovation work and retrofit work.

So we are seeing an increase in consumer awareness, but we are still at a very low percentage of that. I guess I look forward to the day where the average consumer cares as much about the cost of a gallon of gas as his kilowatt hour rate on his bill and is aware of what his kilowatt hour rate is on his bill as he is aware of what a gallon of gas costs.

Senator MURKOWSKI. I don't know what goes on in your house, but I am always after my kids to turn off the lights, turn off the machine, whatever. I get the "whatever" back.

[Laughter.]

Senator MURKOWSKI. But it is, it really is an awareness, and I think with kids particularly if you can distill it—you are not going to get a 15-year-old caring about what the kilowatt usage is on the Xbox game. But when you say it is the equivalent of 2 refrigerators, there is a visual there that they can relate to. So we have got to figure out how we talk their language as well.

I appreciate the testimony this afternoon.

The CHAIRMAN. Thank you all very much, and I appreciate the testimony and appreciate all the work that has gone into developing these pieces of legislation. I hope you will keep working on it, and we will be doing our best to get some of this enacted into law.

Thank you.

[Whereupon, at 10:40 a.m., the hearing was adjourned.]

APPENDIXES

APPENDIX I

Responses to Additional Questions

RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR BINGAMAN

Question 1. On page 2, you describe DOE's plans to implement the November 2006 Consent Decree in which DOE plans to eliminate the backlog in appliance standards rules.

What impact would the enactment of the appliance provisions of ACELA and of S. 3059 have on DOE's ability to implement the Decree and eliminate the backlog?

Answer. The Department of Energy (DOE) has yet to estimate the potential resources and time required to implement the appliance provisions of the provisions of ACELA (S. 1462) and S. 3059. DOE has not assessed the potential impact of these requirements on DOE's ability to implement the existing Consent Decree, which reflects the Department's commitment to eliminating the backlog of appliance standards rulemakings. However, a preliminary review suggests these provisions are not likely to have a major adverse impact on the Department's ability to comply with its obligations under the Consent Decree. Many of the provisions contained in ACELA and S. 3059 would directly establish new energy conservation standards or related requirements, rather than mandating the development of new DOE rulemakings. The provisions that would impose new rulemaking responsibilities appear to set achievable deadlines that do not impair DOE's ability to meet its existing obligations under the Consent Decree.

Question 2. Will DOE adjust ongoing rulemakings, such as the rulemaking underway for residential furnaces, to conform to the provisions of the consensus agreements that have been negotiated between industry and efficiency advocates?

Answer. DOE must conduct its rulemaking process according to existing law. If elements of the consensus agreement are passed into law, DOE will implement those accordingly. For the residential furnaces rulemaking, on March 15, 2010 DOE published a notice in the Federal Register requesting comments on the product classes, the analytical approach, models, and tools DOE is using to evaluate amended standards for this rulemaking. Comments on the March 15 notice will be accepted until April 14, 2010. In the next step of the process, the Department will publish a Notice of Proposed Rulemaking in which DOE will propose standard levels and solicit comments on adopting the consensus agreement.

Question 3. Current law requires DOE to propose updates to its testing procedures for battery chargers and external power supplies. These updates are intended to clarify the requirements for measurement of energy consumed in modes known as "stand-by mode," "no-load" and "off mode."

However, life safety and security products are continuously active and require a constant, uninterrupted power supply. S. 3059 includes provisions supported by the security industry and efficiency advocacy organizations to exempt life safety and security devices from the requirements of the "off mode and "stand-by" mode.

Do you agree that federal efficiency standards applicable to external power supply performance in off mode and standby mode should not apply to external power supplies designed for use with security and life safety devices?

Answer. Given current technology, the Department of Energy (DOE) does not believe such devices can reliably transition to off or standby mode while serving their security and safety functions. Therefore, DOE agrees that energy conservation standards regarding these modes should not apply.

RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR MURKOWSKI

Question 1. I have said before that I don't think Congress should be in the business of legislating product standards, but that sometimes technology moves more quickly than the DOE rulemaking process. What are the potential challenges that could occur, by moving these appliance standards through Congress, rather than through the Department of Energy?

Answer. While the Department has developed and issued a large number of product standards since the program's establishment, most product standards were originally set by legislation. In most cases, the product standards established by legislation have been supported by both manufacturers and energy advocates; a reflection of the active involvement of stakeholders in the legislative process. If key stakeholders and other experts continue to be engaged during the legislative process, DOE believes the process can be an effective alternative to DOE-developed rulemakings. The great advantage of the legislative process is it shortens the time required to establish new efficiency standards by several years. However, this acceleration in the process has sometimes resulted in the establishment of standards that did not achieve maximum energy efficiency gains that were economically justifiable and some cases resulted in enactment of technically flawed statutory provisions. The Department stands ready to work with Congress to help ensure Congressionally-directed standards maximize the efficiency gains that are economically justified and are based on the best technical information available.

Question 2. In your testimony you say that while DOE's efforts to bring the appliance standard program up to speed are ongoing, they have revealed that the existing statutory language constrains the Department's enforcement efforts. How can we avoid this in the future?

Answer. The Department of Energy (DOE) is constantly working to make sure that our standards and enforcement actions are as robust as they can be, but we would benefit from some changes to existing statutes. As a result, DOE would recommend edits to three areas of the existing statutory language; dealing with penalties, prohibited acts and process. The suggested edits are as follows:

1. PENALTIES

Amend 42 U.S.C. § 6303(a) Enforcement by striking the first sentence and replacing it with the following sentence: "Except as provided in subsection (c) of this section, any person who knowingly violates any provision of section 6302 of this title, or any regulation promulgated pursuant to it, shall be subject to a civil penalty."

After "violations of 332(a)(5)" add, (a)(8), (a)(9) and (a) (10) In the last sentence of the paragraph, after "Each violation of paragraph (1),(2) or (5) of section 332(a) [42 USCS 6302(a)(1),(2), or (5)] shall constitute a separate violation with respect to each covered product," Add "with a maximum civil penalty of \$1,000 per unit;" and after "and each day of violation of section 332(a)(3) or (4)," add "(8),(9), or (10)" and after " [42 USCS 6302 (a)(3) or (4)] shall constitute a separate violation," add "with a maximum civil penalty of \$500 per day."

Rationale

- Currently our ability to deter violators is inhibited by relatively low penalties. This edit would increase the current maximum violation for violating DOE's energy efficiency standards from \$200 per unit in violation to \$1,000 per unit in violation which will provide a more significant deterrent, particularly for low volume manufacturers. The original statutory penalty of \$100 per violation was enacted in the 1970s and has only been modestly adjusted (up to \$200) for inflation.
- The penalty for failing to certify and failing to ensure a product meets DOE's energy efficiency standards is increased from \$200 to \$500 per day. The certifications provide information which is critically important in making an initial assessment of whether underlying energy efficiency standards are being met. Testing is an essential component of any manufacturer's compliance with the standards.
- The additions of (a)(8),(a)(9) and (a) (10) parallel the changes in Section 6302 below—making it clear that failing to certify, test or comply with DOE regulations promulgated pursuant to the statute are violations subject to penalty.

2. PROHIBITED ACTS

Amend 42 U.S.C. § 6302(a) to explicitly include failure to certify, failures to test and regulatory violations by adding the following provisions:

(8) for any manufacturer or private labeler to distribute in commerce any new covered product which has not been properly certified in accordance with the requirements established in or prescribed under this part.

(9) for any manufacturer or private labeler to distribute in commerce any new covered product which has not been properly tested in accordance with the requirements established in or prescribed under this part

(10) for any manufacturer or private labeler to violate any regulation lawfully promulgated to implement any provision of this part.

Rationale

- DOE interpreted its rules (Parts 430 and 431) and 42 U.S.C. 6302 (a)(3) to mean a failure to certify covered products is an independent violation of EPCA and DOE's implementing regulations that may be subject to an enforcement action.
- However, given the importance of the certification information which provides critical information necessary to make an initial assessment of whether the underlying energy efficiency standards are being met—a technical amendment to the statute that clearly states failure to certify is a violation would assist enforcement efforts.
- Testing should be its own separate requirement—not linked to labeling. Currently, the statute prohibits a manufacturer from representing the energy use or energy efficiency of a product (subject to a test procedure) unless that product has been tested. This is a labeling violation enforceable by the Federal Trade Commission (FTC). A technical amendment to the statute clarifying a failure to test a product is itself a violation would assist DOE enforcement efforts. Paragraph 10 makes clear that regulations promulgated pursuant to the agencies enforcement authority under this section are violations subjected to penalty.

3. PROCESS

Amend 42 U.S.C. § 6303(d) by striking the second sentence of (1), by striking the introductory clause of (2), and replace it with “If the proposed penalty arises from an alleged violation of 42 USC 6302(a)(3)(4)(5) or (10); by striking (3) in its entirety, and replacing it with (3) if the proposed penalty arises from an alleged failure to certify or test a covered product as required by 42 U.S.C. § 6302(a)(8)-(9), the Secretary shall assess the penalty, by order, after an informal adjudication conducted under 5 U.S.C. § 555; and in (4) after “the Secretary shall institute an action to recover the amount of such penalty” add “plus interest assessed from the date upon which the assessment of a civil penalty became a final and unappealable order under paragraph (2).

Rationale

- Cases where there is no dispute of material fact; i.e. a manufacturer simply fails to file a certification report or fails to test a product in violation of federal law, should not go to an Administrative Law Judge (ALJ). They should be decided by an informal hearing consistent with APA section 555. The proposed technical amendment adding a new paragraph (3) addresses this issue.
- For other cases—such as whether or not the item at issue complies with federal energy efficiency or water standards the existing process set forth in 6303 (d)(2) should apply: after a formal adjudication under § 554, the Secretary may issue an order assessing a civil penalty. After a penalty order is assessed, the affected party must seek judicial review “within 60 calendar days” by instituting “an action in the United States court of appeals for the appropriate judicial circuit for judicial review of such order in accordance with [the APA].” The proposed technical amendment to paragraph 2 addresses this issue.
- A technical amendment striking the original § 6303(d)(3) language from the statute would enhance DOE's enforcement efforts. Allowing the potential bad actor to chose the more cumbersome option laid out in 6303(d)(3) impedes enforcement efforts: if an entity elects to proceed under § 6303(d)(3), then the Secretary must “promptly” assess a civil penalty and then wait 60 days to see if the entity pays it. If it is not paid, the Secretary must file an action in “the appropriate district court of the United States for an order affirming the assessment of the civil penalty.” Thus allowing a non-compliant manufacturer to extend the process for months all the while distributing non-compliant products to consumers.

Question 3. Please describe how you fund, monitor, and enforce compliance issues within the ENERGY STAR® Program. How many staff do you have for ENERGY

STAR® compliance, monitoring and enforcement; and are there any specific plans to increase this capacity in FY2011? How will the “ramp-down” of ARRA funds affect this dynamic?

Answer. Within ENERGY STAR®, the Department has various efforts to monitor and enforce compliance. For one, Compact Fluorescent Lamps (CFLs) are tested under the Program for the Evaluation and Analysis of Residential Lighting (PEARL). This program takes CFLs from retail settings and tests the lamps against the ENERGY STAR® CFL Program Requirements. If a lamp did not meet the requirements, it was disqualified from the program. Under current version of the program requirements, manufacturers fund the testing.

Windows, doors and skylights are tested under the auspices of the National Fenestration Rating Council (NFRC). This independent third-party entity establishes consensus testing procedures to evaluate energy efficiency metrics for fenestration products. If a product does not meet the ENERGY STAR® requirements for qualification, it is not allowed to carry the ENERGY STAR® label.

Beginning in Fiscal Year (FY) 2010, the Department of Energy (DOE) is testing appliances at independent third party laboratories to verify qualifying test results. It is the Department's intent, if products do not meet ENERGY STAR® program requirements, to refer the matter to the Environmental Protection Agency (EPA) for appropriate action. For CFLs, the testing and verification process written into the program requirements will continue, with failing test results referred to EPA for product status determination. NFRC will continue to conduct independent testing for fenestration product certification and DOE will monitor NFRC's internal accreditation reviews to insure the reported certification results are valid.

Also during FY 2010, EPA will begin requiring all products be certified by independent testing laboratories, thus eliminating manufacturer self-certification for qualifying for ENERGY STAR®. In FY 2011, DOE expects to expand its verification capabilities and expand the breadth of ENERGY STAR® products to be tested at independent third-party facilities. The eventual goal is for all ENERGY STAR® products to be tested, in conjunction with any testing managed by EPA. DOE has requested an increase in the FY 2011 budget request to pay for this enhanced capacity and does not expect the ramp down of Recovery Act resources to cause reduction in verification testing.

Question 4. DOE staff has briefed Committee staff on transferring the promotion of several ENERGY STAR® products to the EPA, such as windows, refrigerators, dishwashers and compact fluorescent lights, within the FY2011 budget request. However, the budget still references these products as part of the DOE. Is it the Administration's intent to transfer the promotion of ENERGY STAR® labels for these appliances from the Energy Department to the EPA? Please describe the funding, rationale, and implementation schedule anticipated for this transfer, if it undertaken.

Answer. The Department of Energy (DOE) and Environmental Protection Agency (EPA) signed a Memorandum of Understanding on September 30, 2009 outlining a new partnership on energy efficiency in buildings as an important step in strengthening the Administration's commitment to energy efficiency. The partnership addresses two programs for which each agency has important roles: the ENERGY STAR® program and the National Building Rating Program. The agreement updates and replaces a 10-year-old agreement between the agencies on ENERGY STAR® and other efforts. The agreement outlines:

- An enhanced ENERGY STAR® program and a new 'best in class' labeling program;
- An enhanced national building energy rating program that will be widely applied in Recovery Act programs and beyond;
- An ongoing framework for partnership, coordination, and collaboration between the two agencies across these programs;
- Clear lines of responsibility between the two agencies that build on the expertise of each agency; and
- New opportunities for stakeholders to provide feedback to the administration on these programs.

The ENERGY STAR® products program has grown to encompass products in more than 60 product categories and is used by millions of Americans in selecting products that help them save money and protect the environment. A number of enhancements will be undertaken to maintain and build the ENERGY STAR® label as a consumer trust mark for cost-effective energy-efficient products that offer consumers the features they are seeking. These enhancements include:

- The ENERGY STAR® program will be expanded to cover more products at a faster pace;
- Revisions to existing ENERGY STAR® specifications will be undertaken more frequently so the ENERGY STAR® label continues to highlight top energy efficient products;
- A comprehensive program for product testing and verification of products earning the ENERGY STAR® will be developed and implemented; and
- A new effort to recognize super efficient products.

DOE and EPA will work quickly to put this agreement into action in the following ways:

- Outline and implement key enhancements to the ENERGY STAR® products program in the areas of:
 - (1) product testing and verification,
 - (2) revisions to existing ENERGY STAR® specifications so as to ensure ENERGY STAR® recognizes top performing products, and
 - (3) other changes necessary so ENERGY STAR® represents the top product models as outlined in the agreement.
 - (4) Developing options for new “best in class” labeling program.
- Outline and implement key enhancements to the National Building Rating System particularly where important to assist in the use of Recovery Act funding.

DOE will continue a strong commitment to the overall success of ENERGY STAR®. DOE will concentrate its effort in the following areas:

- Testing procedure development, review, and improvements;
- Technical analysis; and
- Testing and verification.

As a result, the DOE role in ENERGY STAR® will continue to be significant. The test procedures and analytical capacity are critical to a successful ENERGY STAR® program.

Further information on the actions DOE and EPA are taking to protect the integrity of the Energy Star label are outlined in the attached memo, sent on April 2, 2010, to DOE Secretary Chu and EPA Administrator Jackson, from DOE Assistant Secretary Cathy Zoi and EPA Assistant Administrator Gina McCarthy.

Question 5. Please describe how the DOE intends to release more than 20 final appliance rules by June 30, 2011 and whether the amount of funding allocated, is adequate, to ensure that these final rules are met by the deadline.

Answer. The Department of Energy (DOE) has established detailed schedules for development and issuance of all rulemakings governed by the Consent Decree and statutory deadlines, and is putting in place the staff, internal processes, and other resources necessary to ensure these deadlines are achieved. For Fiscal Year (FY) 2010, the Department requested and received \$35 million to support implementation of the appliance standards programs. For FY 2011, the Department requested \$40 million for these efforts. The FY 2011 request will enable DOE to meet the established deadlines and to undertake significant new efforts to ensure improvement in the compliance and enforcement efforts.

Question 6. Have decisions been made regarding the funding level for the Energy Star Program for fiscal year 2011, and if so can you summarize the different components, and their corresponding funding levels within the Program?

Answer. The Department of Energy (DOE) requested \$10 million in Fiscal Year (FY) 2011 to support ENERGY STAR® activities, including developing and updating test procedures, criteria development, verification testing and support of the National Building Rating Program (NBRP). For test procedures, DOE will use funds to accelerate the development of test procedures for an increased range of products. In addition, the development of verification procedures will be accelerated to ensure the reliability of the ENERGY STAR® label in the eyes of consumers. Developing test procedures and verification methods is an intensive process, but necessary as DOE begins doing more in-house testing and verification.

A two-pronged strategy will be deployed in FY 2011 to support the portfolio of existing technologies: 1) developing and updating efficiency criteria including ENERGY STAR® test procedures for products to keep the label relevant and meaningful in the market; and 2) working with EPA and participating manufacturers, retailers, and energy efficiency program sponsors on certification and product testing.

The NBRP will provide guidance for energy retrofits of existing buildings based on state-of-the-art cost and performance data. It will also establish a comprehensive energy efficiency rating system for both residential and commercial buildings on a

national scale. DOE will develop, validate, and update software tools for both asset and benchmark ratings in consultation with the Environmental Protection Agency (EPA). These tools provide information to owners on whole-building comparative energy use, while also providing decision assistance on retrofits. DOE will maintain all relevant databases used by the software tools and create data sharing mechanisms with EPA. EPA will establish ENERGY STAR® criteria for buildings based on technical input from the DOE and the NBRP.

RESPONSES OF KYLE PISTOR TO QUESTIONS FROM SENATOR MURKOWSKI

Question 1. The Next Generation Lighting Initiative will provide significant energy savings through more efficient lighting. Given the DOE's management in the development and understanding of this new technology, please describe how DOE will oversee this initiative, as well as other activities related to the initiative.

Answer. The Next Generation Lighting Initiative was created by Congress in Section 912 of the Energy Policy Act of 2005, which directed DOE to support research and development for and promote advanced light emitting diodes (LEDs) and organic light emitting diodes (OLEDs). The energy savings potential of LEDs and OLEDs, also known as solid state lighting (SSL), is significant. As part of the NGLI, Congress directed DOE to select an industry alliance that is broadly representative of U.S. solid state lighting research, development, infrastructure, and manufacturing expertise as a whole to cooperate in DOE's efforts. The Next Generation Lighting Industry Alliance (NGLIA), for which NEMA serves as the Secretariat, is that industry alliance. Since 2005, DOE and NGLIA members have cooperated to support technology research and development, product R&D, and development of technical standards as well as commercialization, testing, demonstration, and market introduction of LED products for general illumination. Most recently, DOE has launched an initiative on manufacturing R&D.

Question 2. Do you believe that your proprietary data is protected within the bill, in particular as it relates to that requires DOE to require manufacturers to submit information on compliance, shipments, energy use and efficiency?

Answer. The legislation requires the Department of Energy to conduct a public hearing on the specifics of what data is needed by product category. This will allow the DOE to tailor what data is appropriate for which products, and methods under which the data can be submitted to DOE. NEMA would propose that confidential information could be maintained by allowing manufacturers to submit through their respective industry trade association. NEMA has a long history of doing this for other regulatory purposes, including DOE and EPA programs. In addition, NEMA has offered this ability to non-NEMA manufacturers. It will be important that any data requests be based on reasonable considerations regarding the timing and burden related to the data submission that would not require industry to create new systems to gather information that doesn't exist today.

Question 3. As you note in your testimony, the 2007 Energy Independence and Security Act requires that customers be provided with timely information and options for controlling energy use. Is your organization conducting any public outreach on smart grid technologies? Do you get the sense that consumers understand smart grid products or is additional public education needed in this arena?

Answer. NEMA conducts outreach on Smart Grid through a number of mediums. Aspects of Smart Grid are regularly featured through our print and online outlets; *electroindustry Magazine* (ei Magazine), and *ei-Extra*. The March 2009 edition of *ei Magazine* specifically featured Smart Grid, as will the June 2010 edition. NEMA staff and member companies are regular contributors to other industry publications, and welcome the opportunity to speak in public forums on Smart Grid. Additionally, NEMA has developed publications specifically targeted at Smart Grid consumers, Smart Grid oriented podcasts available on from the Apple iTunes store, and has an audio segment that will be featured on Delta Airlines Sky Radio during the months of May and June of 2010.

However, it is NEMA's belief that, in general, the average consumer does not understand the purpose or the benefits of Smart Grid. NEMA would welcome federal involvement in this process with manufacturers, utilities, and state legislators/regulators.

Several essential consumer education areas that could be addressed include:

- Consumer motivation needs to exist as a pull-through for Smart Grid technology in regulatory actions. As with any technology-driven endeavor, a small percentage of homeowners will grasp and adopt Smart Grid technologies for the home, while a great deal of others will lag. However, very few of even the most interested homeowners will consider, or will pay any attention to the changes

necessary within the utility company in order to support the home-level services that are enabled through Smart Grid. As a result, state regulators, who are charged with protecting consumer interests, may be faced with rate-payer opposition as they consider utility proposals for actions related to the deployment of Smart Grid technologies. A well educated consumer and/or giving local regulators the appropriate tools to address these concerns would be a tremendous benefit.

- Demand Response (DR, also known as Peak Demand) is a foreign concept. A key to serving peak demand with existing grid resources is the idea of supporting demand response programs. The problem is that the general public doesn't understand this term and thus cannot relate to its importance. On March 12, 2010 the Federal Energy Regulatory Commission (FERC) released their first draft of the National Demand Response Plan. Every utility and consumer in the country could be affected by this policy, but very few people outside of the electricity supply chain understand it.

RESPONSES OF KYLE PISTOR TO QUESTIONS FROM SENATOR SESSIONS

Question 1. Can Light Emitting Diode (LED) be deployed on a nationally wide scale?

Answer. Yes, light-emitting diode (LED) outdoor products can be deployed nationwide and will work in most applications although LED technology is not mandated by the bill.

Question 2. Could you please provide me a cost-benefit analysis for the State of Alabama for phasing out existing luminaires and replacing them with light emitting diode (LED) outdoor lighting systems by 2013-the effective date listed in the Senate proposal and by 2017-the effective date in the House proposal?

Answer. Section 6 of the legislation does not mandate LED retrofits and there is no requirement for a state to replace their existing outdoor lighting. The bill impacts only the sale of new luminaires beginning three years after date of enactment, and does not mandate a specific technology such as LED. There are many luminaires with traditional sources such as metal halide or high pressure sodium that will meet the Tier 1 requirements. The bill would prohibit the manufacture of mercury vapor lamps effective January 1, 2016. Current law passed by Congress already prohibits the manufacture of mercury vapor ballasts (which operate the lamps) which went into effect on January 1, 2008.

A community or business may choose to replace their existing lighting with LED and the cost benefit will depend on the specific nature of the installation. The details will depend on the application type (parking lot, plazas, streets, roadways, etc), the energy cost in that area, lighting requirements and the type of new luminaires installed. Today, payback periods are typically in the range of 3-6 years.

RESPONSE OF JOSEPH M. MCGUIRE TO QUESTION FROM SENATOR MURKOWSKI

Question 1. As you note in your testimony, the 2007 Energy Independence and Security Act requires that customers be provided with timely information and options for controlling energy use. Is your organization conducting any public outreach on smart grid technologies? Do you get the sense that consumers understand smart grid products or is additional public education needed in this arena?

Answer. The Smart Grid is in the nascent stage of development. It is essential that all stakeholders in development of the Smart Grid understand that consumers are the key to its success. Yet consumers themselves are generally unaware of the Smart Grid. According to Appliance Design Magazine which recently cited an online Harris poll conducted between January 18 and 25 on Smart Grid awareness, "two thirds of Americans have never heard the term Smart Grid (68%) and 63% have not heard of Smart Meter." Yet the survey also found that "A majority of U.S. adults (57%) are aware of how much electricity they are consuming, and an even greater number (67%) say they would reduce their usage if they had visibility to it."

AHAM and its members are working hard to educate the public as well as public utility commissions about the potential benefits of the Smart Grid to consumers. What is also needed are incentives to consumers to encourage early adoption of Smart Grid technologies. This includes time of use electricity pricing and financial incentives to consumers, retailers and manufacturers to get Smart Appliances online in residences.

A search of the Internet and news sites shows that Smart Appliances and the work of appliance manufacturers in this area are being publicized; however, much more needs to be done and Congress can help. Congress can increase the visibility of the Smart Grid and Smart Appliances as manufacturers continue to educate con-

sumers on and increase awareness of the benefits attributable to Smart Appliances, such as saving money on their electric bill and managing their energy use more effectively. Some areas where Congress can help are as follows:

- Authorize the Best-in-Class Appliance Deployment program to provide incentives to manufacturers to produce Smart Appliances and educate consumers of their benefits.
- Incorporate Smart Grid capability in ENERGY STAR program.
- Expand the Energy Efficient Appliance Rebate program to include Smart Appliances.
- Provide Smart Grid peak demand reduction goals so that each load-serving entity must prepare a peak load reduction plan that includes Smart Appliances.

We would be pleased to work with you and the committee on these and other ideas to increase public awareness and understanding of the Smart Grid and Smart Appliances.

RESPONSES OF STEVEN NADEL TO QUESTIONS FROM SENATOR BINGAMAN

Question 1. Representatives of the Heating, Air-conditioning and Refrigeration Distributors International have contacted the Committee staff expressing very serious concerns with Section 5 of S. 3059, “Prohibited Acts”. Their concern is that, with the establishment of regional standards for air conditioners and furnaces, it may be illegal for distributors to operate across the regional boundaries.

Would you please update us on the status of efforts to resolve their concern?

Answer. We have completed discussions with HARDI and have agreed to an amendment to S. 3059 to clarify that distributors in one region can sell at wholesale in other regions. The specific consensus amendment is attached.

Question 2. The legislation would provide, for the first time, the ability of the Secretary of Energy to consider the application of “smart grid technology” with respect to the energy efficiency standards for products and equipment. How does this impact the setting of efficiency standards, and what trade-offs occur between making a product “smarter” versus more efficient?

Answer. Making equipment “smarter” provides the potential to save energy, to reduce peak demand, and to achieve other objectives. In some cases these goals can be achieved simultaneously (e.g. cycling off a dryer during peak periods saves at peak, but can also save some energy since residual heat in the dryer evaporates some moisture, shortening the remaining drying cycle). Sometimes one goal can be achieved without adversely affecting the other goals (e.g. delaying turning on a dishwasher until after the peak period ends saves at peak but has no impact on energy use). But sometimes one or more goals can be achieved at the expense of another goal (e.g. shutting off a dishwasher during mid-cycle may save at peak, but increases energy use since the water in the dishwasher needs to be reheated when the cycle is allowed to resume). The provision in S. 3059 on smart grid technology directs the Secretary to review smart grid opportunities and how these opportunities affect energy use, economics and environmental objectives, ultimately balancing the different objectives before setting standards. Essentially, this provision gives the Secretary another set of technology options to consider and evaluate. However, these new options must be evaluated in the context of the overall law which directs that new standards “shall be designed to achieve the maximum improvement in energy efficiency. . . , which the Secretary determines is technologically feasible and economically justified”. Given this, our view is that this provision will result in incorporating smart technologies that either save energy, or that achieve other benefits but are neutral with regard to energy consumption. Under the language in the current law, it will be very difficult to set a standard that increases energy use.

ATTACHMENT

It shall be unlawful—

(5) for any manufacturer (or representative of a manufacturer), distributor, retailer or private labeler

(A) to offer for sale or distribute in commerce any new covered product which is not in conformity with an applicable energy conservation standard established in or prescribed under this part, or

(B) where the standard is a regional standard that is more stringent than the base national standard, to offer for sale or distribute in commerce any new covered product having knowledge (consistent with the definition of “knowingly” in section 333(b)) that the product will be installed at a loca-

tion covered by a regional standard established in or prescribed under this part and will not be in conformity with such standard.

APPENDIX II

Additional Material Submitted for the Record

STATEMENT OF KATHERINE HAMILTON, PRESIDENT, GRIDWISE ALLIANCE

Chairman Bingaman, Ranking Member Murkowski, members of the Committee, thank you for inviting me to submit written testimony on smart grid provisions proposed by the Energy and Natural Resources Committee. The GridWise Alliance has testified before this committee on several occasions and sustains a positive working relationship with both majority and minority staff by providing unbiased information about smart grid.

The GridWise Alliance is a coalition of about 125 organizations advocating for a smarter grid for the public good. Our members broadly represent the nation's interest in smart grid, including leading utilities, independent system operators, large IT and communications companies, small technology companies, manufacturers, consultants, universities, and research organizations. We operate on a consensus basis and remain technology neutral, focusing on the policy issues surrounding the deployment of a smarter grid. We believe the market should determine which technologies prevail.

The passage of the American Recovery and Reinvestment Act serves as a watershed event in the history of the nation's electric grid. By providing over \$4 billion in grants for smart grid projects, Congress effectively elevated the smart grid to a national priority. Utilities and state regulators have been quick to respond, submitting hundreds of projects for potential funding. Over 100 projects representing nearly every state were awarded federal grants. As a result, the transition to a smarter grid is well underway.

Now we need to turn our attention to the ultimate beneficiary of the smart grid—the consumer. The smart grid offers greater visibility into, and control over, electricity consumption, thereby enabling consumers to better manage their energy bills. To realize these benefits, however, consumers must have access to two critical suites of technologies—Home Area Networks (HAN) and smart appliances. Whereas Home Area Networks process communications between the grid and the home, smart appliances actually respond to consumer preferences and signals from the HAN or utility, system operator, aggregator, internet provider, or even microgrid. For example, consumers with variable rate plans can program smart appliances to operate when electricity prices are low, while utilities or other service providers can signal smart appliances to discretely alter operations during periods of peak demand. Smart appliances will be the next evolution of demand response.

To be sure, consumer participation in the smart grid is an evolutionary process. We at the GridWise Alliance believe that the pace of consumer participation will be determined by three underpinning efforts: (1) consumer education; (2) support for the smart appliance market; and (3) adoption of variable rate structures and financial incentives. Our members are collaborating with consumer advocates, utilities, and other service providers on the development of consumer outreach programs; I have spoken with many state utility commissioners on the need for rate structures that allow consumers to benefit from their choices. However, the nascent smart appliance market is in urgent need of support, particularly as consumer spending remains at record lows and unemployment hovers just below 10%. For these reasons, Congress can play a crucial role in providing early support for the market and spurring successive rounds of investment in new technologies. Not all homes will purchase smart appliances right away, but support for this market will be a critical step toward encouraging consumer participation in the smart grid.

Smart appliances will be capable of interacting seamlessly within home systems to provide energy savings for consumers without inconveniencing household operations. For example, a smart refrigerator can cycle off its freezer defrost during peak periods of demand, thereby allowing the utilities to better manage overall load and providing consumers with opportunities to reduce their electric bill, depending

on the available incentive programs. We believe that state rate structures and incentives should complement this technology to allow consumers to maximize their energy and bill savings. In a weak economy, a consumer's ability to understand and react to electric prices will be critical. Smart appliances will offer consumers the ability to simply and conveniently reduce demand without negatively impacting their lifestyles.

Smart appliances will also play an important function in maintaining grid stability. Appliance and chip manufacturers are developing technologies that can automatically react to conditions (or "perturbations") on the grid, even in the absence of signals from utilities. For example, if a substation transformer fails, a smart appliance could detect voltage sag and shut down in order to shed load from the system. With a multitude of such appliances interacting with the grid, the system becomes much more stable and reliable. The appliance then becomes important not only to the consumer, but to the community.

Beyond the grid, the smart appliance market will create new opportunities for a range of manufacturers. Put simply, these opportunities can translate into economic growth and improved competitiveness within our domestic manufacturing base. We believe that traditional appliance manufacturers as well as innovative start-up companies should be able to participate in this new market. Although Congress has voiced its intent to place our country on a pathway to leadership in the global smart grid market, we must ensure the correct incentives are in place to realize this vision.

For this reason, we strongly support the provisions in this bill with expansion suggested in two areas—the consumer's ability to participate and grid stability. Limiting the scope in paragraph (VII) to those smart appliances that "enable demand response or response to time-dependent energy pricing" puts the smart appliance industry and consumers at the mercy of utilities and regulators. As written, benefits would accrue only for smart appliances sold in service areas where regulators have put into place demand response and/or variable rate structures. A homeowner may choose to purchase a smart appliance because they have the capability to install a home energy management system from a third party to reduce home energy use without any utility demand response program or price signals. In addition, smart appliances should be able to detect and react to voltage sag and harmonic imbalances, improving grid stability regardless of utility signals. Both consumer choice and reliability are critical here; including the words "consumer choice" and "grid stability" in the bill would strengthen that provision.

Given the importance of smart appliances to consumer choice, grid stability and manufacturing competitiveness, the GridWise Alliance strongly supports the Committee's decision to include smart appliance language into the draft under discussion at this hearing. In conclusion, the GridWise Alliance supports smart appliance language in this bill as a means to prepare the market for consumer choice, reduce disruptions on our electric utility grid, and stimulate innovation and manufacturing in the US, providing economic stimulus and job growth.

AMERICAN GAS ASSOCIATION,
Washington, DC, March 9, 2010.

Hon. JEFF BINGAMAN,
Chairman, Energy & Natural Resources Committee, U.S. Senate, 304 Dirksen Senate Office Building, Washington, DC.

Hon. LISA MURKOWSKI,
Ranking Member, Energy & Natural Resources Committee, U.S. Senate, 709 Hart Senate Office Building, Washington, DC.

Re: S. 3059, National Energy Efficiency Enhancement Act of 2010

DEAR MR. CHAIRMAN AND SENATOR MURKOWSKI: I am writing you on behalf of the American Gas Association (AGA) and its 195 natural gas utility members. On March 10, 2010, the Energy and Natural Resources Committee will convene a hearing on S. 3059, the National Energy Efficiency Enhancement Act of 2010.

We applaud and support your efforts to advance sound energy efficiency legislation and value the consensus effort that led to S. 3059 but we have serious concerns about the likely negative impact of the provisions of Section 2(e) (page 14) of the bill with respect to furnaces, especially as they pertain to the replacement market.

Our primary concern is that Section 2(e) would require that furnaces manufactured on or after May 1, 2013, for use in "northern" states must have an Annual Fuel Utilization Efficiency (AFUE) of at least 90 percent. While laudable, this mandate could ultimately encourage consumers to repair rather than replace their fur-

nace or, worse yet, not make the needed changes on the common-vented water heater venting system, which could result in a safety hazard.

To prevent this unintended consequence from occurring, AGA proposes that the bill be amended so that the requirements for a 90 percent AFUE furnace would apply only to new construction and not replacement furnaces. Further, AGA proposes making the effective date January 1, 2015. There is no justification for having a longer effective date for heat pumps than furnaces.

If only 90 percent AFUE furnaces are available, the consumer will have to take additional steps on the installation and venting of the furnace, as well as the remaining gas water heater, because 90 percent AFUE furnaces cannot be common vented (positive pressure in the vent eliminates the practice of common venting furnaces and water heaters). This will leave consumers with the dilemma and added cost of addressing the venting of the remaining water heater (i.e. resizing, relining, or replacing). This added cost can be substantial (\$1,500 to \$2,000). Additional considerations that must be made when requiring a 90 percent AFUE furnace in the replacement market include: availability to side wall vent the furnace, condensate disposal provisions and the addition of a drain pan. These considerations could result in discouraging the furnace replacement, which is not in anyone's best interest.

While the proponents of this provision may hope that mandating a 90 percent AFUE will result in more 90 percent furnaces, the result in the real world may well be the repair and continued operation of more 78 percent AFUE furnaces.

One additional concern, especially as we enter a carbon-constrained world, is that this legislation may well lead to not only higher consumer costs and potential safety hazards but also to significant increases in greenhouse gas emissions by forcing a switch from natural gas water heaters to electric water heaters. The average electric water heater is, on a national average, responsible for almost twice as much carbon dioxide as the average natural gas water heater. AGA cannot believe that this outcome would be the result of for a sound energy policy.

AGA also questions why the bill does not include a mandate for 90 percent AFUE for oil furnaces. Ninety percent AFUE oil condensing furnaces are on the market today. While oil furnaces do not have the degree of market penetration that natural gas furnaces have, imposing such a mandate would certainly assist the United States in reducing its dependence on foreign oil imports.

And lastly, AGA questions why the bill does not address electric resistance furnaces. AGA would support a provision that would prohibit electric resistance furnaces in new construction or replacement markets, particularly in the "northern" states. Although electric resistance furnaces have a 100 percent AFUE, on a national average basis they require almost three times as much source energy and are responsible for almost three times as much carbon dioxide as a comparable natural gas furnace.

We respectfully request that you make these modifications. Please contact AGA's Jeffrey Petrash at ipetrash@aga.org, or 202.824.7231, if we can provide further information on these points.

Thank you for considering our views.

Sincerely,

DAVID N. PARKER,
President and CEO.

ENTERTAINMENT SOFTWARE ASSOCIATION,
June 8, 2009.

Hon. JEFF BINGAMAN,
Chairman, Energy & Natural Resources Committee, U.S. Senate, 304 Dirksen Senate Office Building, Washington, DC.

DEAR CHAIRMAN BINGAMAN: Per the request of staff, the Entertainment Software Association (ESA) respectfully submits this statement of support on behalf of the video game industry for an amendment by Senator Robert Menendez that would require the Secretary of Energy to undertake a study of video game console energy use and opportunities for energy savings.

The video game industry is constantly striving for more efficient and effective use of energy among its product lines. To further this ongoing effort, console manufacturers have been working cooperatively and voluntarily for some time with the Environmental Protection Agency to reduce energy usage by developing EnergyStar standards.

The industry remains dedicated to environmentally-friendly product design and energy conservation. We look forward to continuing to work with the Committee on these issues.

The ESA is the U.S. association exclusively dedicated to serving the business and public affairs needs of companies that publish computer and video games for video game consoles, personal computers, and the Internet.

Sincerely,

MICHAEL D. GALLAGHER,
President and CEO.

NINTENDO OF AMERICA, INC.,
Redmond, WA, April 25, 2009.

Hon. ROBERT MENENDEZ,
U.S. Senate, 528 Hart Senate Office Building, Washington, DC.

DEAR SENATOR MENENDEZ: Nintendo of America Inc. (Nintendo) has been in discussions in recent weeks with your staff regarding the energy efficiency of video game consoles. As you know, this topic was the subject of a report late last year issued by the Natural Resources Defense Council. That report found Nintendo's Wii console to be the most energy efficient of the current generation of video game consoles. The report indicated that average energy cost of the Wii for players who turn their systems off after use was only \$3 per year, and only \$10 per year for players who leave their systems on after use. Even in active mode, the Wii uses only 16.4 watts of power—roughly equal to a high-efficiency lightbulb.

Nintendo has reviewed a draft amendment provided by your staff which would require the Secretary of Energy to undertake a study of video game console energy use and opportunities for energy savings. You may be aware that all console manufacturers are working closely and cooperatively with the Environmental Protection Agency to develop EnergyStar standards for our industry. Nevertheless, Nintendo has no objection to the study called for in the amendment your staff has provided us. We pledge our full cooperation should the Secretary undertake such a study.

Sincerely,

RICHARD C. FLAMM,
Senior Vice President and General Counsel.

NATURAL RESOURCES DEFENSE COUNCIL,
May 8, 2009.

Hon. JEFF BINGAMAN,
Chairman, Energy & Natural Resources Committee, U.S. Senate, 703 Hart Senate Office Building, Washington, DC.

Hon. LISA MURKOWSKI,
Ranking Member, Energy & Natural Resources Committee, U.S. Senate, 709 Hart Senate Office Building, Washington, DC.

DEAR CHAIRMAN BINGAMAN AND RANKING MEMBER MURKOWSKI: On behalf of our more than 1.2 million members and activists, I write to urge your support of Senator Menendez's proposal to direct the Department of Energy (DOE) to conduct a comprehensive study on the energy use and efficiency potential of video game consoles.

An initial study commissioned by the Natural Resources Defense Council (NRDC) in 2008 showed that current video game consoles use excessive amounts of power in various operating modes and that mandatory standards might be needed to move manufacturers towards more energy efficient designs. Under some usage patterns, such as when the user fails to turn the device off after use, some of today's models may consume as much annual electricity as two new refrigerators.

The somewhat unique nature of this product category—e.g. only three products on the market, extended periods between new model releases, and the trend towards adding new features such as DVD playback to these devices—may give rise to some unique challenges while developing standards. As such, Senator Menendez's proposal to direct the DOE to conduct an in-depth analysis of the energy use and savings potential from current and pending products represents the best next step.

With this information in hand, the DOE will be in a better position to determine whether or not to recommend development of standards. This incremental approach also provides stakeholders with the opportunity to monitor the success of the pending ENERGY STAR specification for video game consoles.

Sincerely,

FRANZ A. MATZNER,
Acting Legislative Director.

STATEMENT OF RILEY R. RUSSELL, SR. VICE PRESIDENT CHIEF LEGAL OFFICER, SONY
COMPUTER ENTERTAINMENT AMERICA, FOSTER CITY, CA, ON S. 1969

Dear Chairman Bingaman: On March 10, 2010, the committee held a hearing to receive testimony on the Green Gaming Act of 2009, The Water Heater Rating Improvement Act of 2009, the National Energy Efficiency Enhancement Act of 2010, and other energy efficiency bills. SCEA would like to take this opportunity to correct the official record by responding to erroneous statements made during the course of the hearing and I respectfully request that this letter be included as part of the record.

During statements made by the witness panel, Mr. Steven Nadel, Executive Director of the American Council for an Energy-Efficient Economy, incorrectly stated that the energy consumption of the PlayStation3 (PS3) is equivalent to two refrigerators:

...The new PlayStation3, or relatively new, the Xbox 360, they use 100 to 150 watts when on. So if you're gaming, even if you're not gaming, you know, you leave it on because you wanted to save the game and come back where you left off or you turn off the TV and forgot to turn off the Xbox, they still use 100 to 150 watts. We heard from Joe McGuire say that the average refrigerator uses an equivalent of a 60-watt light bulb left on continuously. These gaming systems use twice as much as energy when on. So equivalent of two refrigerators if you leave them on all the time....

Throughout the hearing, Mr. Nadel made statements that were either incorrect or greatly misinformed about the PlayStation 3. Moreover Mr. Nadel's characterization of how games are played and saved do no comport with how modern video games are played. For example, when asked about the popularity of video games consoles in America and how much energy they use, Mr. Nadel stated:

My understanding is that about 40% of American households have at least one of these videogame consoles. As you pointed out, if they are left on all the time, they can use 100, 150 watts continuously and that's as much energy as two refrigerators. So that's really an enormous source of energy use and one that has really grown in the last decade or so.

A game console's normal operation is to be on while actively used by the player and then powered down as with most unattended consumer electronics. Any usage comparison to a refrigerator that is required to be on all the time for "normal" operation is an invalid comparison. Not only are the technologies involved vastly different but so are the usage models. A more typical usage model for PlayStation 3 would be 1 to 2 hours per day of average active on time and the annual energy consumption scales back accordingly.

Most game console manufacturers either have or will soon have auto power down features enabled to prevent consumers from inadvertently leaving the console on for extended periods of time. Not only do all new PlayStation 3 consoles ship with this functionality, because the system can be updated through firmware updates over the internet and through software, auto power down functionality has been added to the original PlayStation currently owned by consumers. Moreover, as all modern game consoles have robust game save features, there is no functional need to leave a console on to save a place within a game.

Finally you should know that Sony Computer Entertainment, and the industry, is committed to improving energy efficiency. The energy consumption of video game consoles, especially the PlayStation 3, is rapidly changing and becoming more and more efficient within each generation. The current model PlayStation 3 now uses almost 55% less energy than the original model in active game play mode and 65% less in standby mode. Standby mode is, in effect, "off". This 65% reduction is significant because this is the state the console is in most—off. Significant efforts to further reduce energy consumption and support practical auto-power down modes continue.

Thank you in advance for your attention to this matter.