

**ENERGY EFFICIENCY PROMOTION ACT OF 2007**

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**HEARING**  
BEFORE THE  
**COMMITTEE ON**  
**ENERGY AND NATURAL RESOURCES**  
**UNITED STATES SENATE**  
**ONE HUNDRED TENTH CONGRESS**

FIRST SESSION

ON

**S. 1115**

TO PROMOTE THE EFFICIENT USE OF OIL, NATURAL GAS, AND ELECTRICITY, REDUCE OIL CONSUMPTION, AND HEIGHTEN ENERGY EFFICIENCY STANDARDS FOR CONSUMER PRODUCTS AND INDUSTRIAL EQUIPMENT, AND FOR OTHER PURPOSES

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APRIL 23, 2007



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## **ENERGY EFFICIENCY PROMOTION ACT OF 2007**

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**MONDAY, APRIL 23, 2007**

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

The committee met, pursuant to notice, at 3:04 p.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. All right, why don't we go ahead with the hearing? Good afternoon.

The purpose of today's hearing is to receive comments on S. 1115, the Energy Efficiency Promotion Act of 2007. Senator Domenici and I introduced this bill a week ago, along with cosponsors from both sides of the political aisle. I appreciate the efforts that today's witnesses have made to provide us with testimony, on rather short notice. I welcome all of those who have come to today's hearing.

This Energy Efficiency Promotion Act that we've introduced will ultimately do two things. It'll save consumers money, and it will reduce our impact on the environment. We accomplish this by reducing the Nation's use of fossil fuels, and we do that by improving efficiency of vehicles and buildings and home appliances and industrial equipment. For example, the appliance standards that are contained in this bill, when fully implemented, will save at least 50 billion kilowatt hours of electricity per year. That's enough energy to power 4.8 million U.S. households.

For those of us interested in addressing the serious issue of global warming, reducing electricity use by 50 billion kilowatt hours per year is a good and an important first step. Of course, if we're truly to make a dent in reducing use of fossil fuels, we need to use less gasoline. The Efficiency Promotion Act sets aggressive national goals for reducing gasoline usage by 20 percent by 2017, 35 percent by 2025, 45 percent by 2030. And we propose to meet these goals in two ways. First, by improving efficiency in the transportation sector. Second, by using renewable fuels, as provided for in the committee's biofuels legislation, which is S. 987, which we also introduced on a bipartisan basis a couple of weeks ago.

I'm very glad that we have the bipartisan support we do for these proposals in this current bill today. I look forward to hearing

suggestions from the witnesses on how we can improve the legislation.

Let me call on Senator Domenici for any comments he has.

**STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM  
NEW MEXICO**

Senator DOMENICI. Thank you very much, Mr. Chairman.

Let me first note that we do have present, and we will have as a witness, a lead witness, the mayor of the city of Albuquerque. I think we both genuinely appreciate his personal representation of Albuquerque, but also his representation of the national mayors on this issue. We look forward to what he has to say.

Second, Mr. Chairman, I have not yet been to the floor to support our very interesting bill that you and I worked on a long time—long and hard, bipartisan—that’s on the floor, and I won’t be able to stay for the whole of the witnesses, but I’ll come back, as I’m needed.

Once again, for those who are skeptics, you should know that this is a bipartisan bill. That’s the third major one we’ve put out. The second one did not quite end up that way, but let’s say it ended up being a good bill, and we started it bipartisan.

So, I want to add my thanks to all the witnesses for being here today. We don’t have everything sewed up yet. As we look at this and look at witnesses, we have some loose ends. But that may be because we’re in a hurry, and when you hurry, frequently you go slow, because you have some loose ends that you wouldn’t otherwise have. But we have a number of Senators from both sides of the aisle as sponsors, and that helps. I’d rather have a few loose ends and have a bipartisan seven Senators, and they’re all willing to work to put these things together.

As you all know, the Energy Policy Act of 2005 was adopted by the Congress, and we are still in the process of implementing it. With that landmark piece of legislation, we did a great deal on energy conservation and improved energy efficiency. Such measures included—and we all remember them, but we didn’t get it all done yet—implementing new efficiency standards for 15 large commercial and residential appliances. These new standards alone will save 50,000 megawatts off-peak electricity by 2020 if the Department gets them done. I note the Department is present here, and they have some difficulty with the bill, but, overall, are hopeful that we can work together to get it done. I thank the Department for their optimism and for their desire to take off big bites like we have here. We appreciate that.

The original bill continues, the Energy Start Program—this bill does—to educate consumers to buy more energy efficient appliances, provides tax incentives to consumers, provides tax incentives to appliance manufacturers. Still, there’s no doubt that much can be done to improve the way in which we use energy. S. 1115 is intended to increase energy efficiency efforts within the Federal Government for buildings and Federal fleets. In my opinion, the Federal Government is the appropriate place to start. Indeed, we should be leading these efforts.

This bill also establishes client standards for consumers and industrial products, seeks to assist States in energy efficiency. The

bill before us today is a good starting point. As I indicated, it still needs work. I expect S. 1115 to evolve over time with input from those who will be tasked with implementing the policy and those who will be impacted by it. I hope we'll hear from both sides before we're through.

I'm pleased that we're conducting this hearing today to hear from the stakeholders. I look forward to working with them, on both sides, until we get a bill.

Senator Bingaman, thank you for yielding.

The CHAIRMAN. Well, thank you very much.

We have two panels today. The first panel is Secretary John Miroch, who is the Principal Deputy Assistant Secretary for the Department of Energy. I'll just add my welcome and appreciation to him and to the Department for their efforts to review this legislation on short notice and give us feedback. We do hope that we can continue to work to resolve issues that you may have with some of the initial language. I think your expertise in this area is very much appreciated. Thank you for being here to testify.

Go right ahead.

**STATEMENT OF JOHN MIZROCH, PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY**

Mr. MIZROCH. Chairman Bingaman, Senator Domenici, and members of the committee, I want to thank you for the opportunity to appear before you today and offer some comments on S. 1115, the Energy Efficiency Promotion Act.

I'd like to say, personally, what an honor it is to appear before you today. Seventeen years ago, I actually served as senior staff on the Joint Economic Committee of the Congress. Senator Bill Roth was ranking member, and asked me to come and work for the JEC on the issue of American industrial competitiveness. I know it's an issue that is a priority for both of you. And while I staffed several hearings, this is my first opportunity to appear before a Senate committee, and I appreciate that, although I must say that it's a little bit different sitting on this side of the table.

I would also like to compliment the work that this committee is doing to promote energy efficiency. Energy is one of the most critical issues facing America and the world today, and energy efficiency is the quickest way to reduce energy intensity.

As you mentioned, Mr. Chairman, although the administration has not had sufficient time to conduct its formal review or coordinate interagency views of the bill to form an official position, I'd like to offer some preliminary observations on the legislation.

There are many elements of S. 1115 that appear consistent with the administration's energy policy objectives. There are some issues that raise practical, budgetary, or other concerns. S. 1115, in several instances, contains language that may be duplicative of authorizations previously enacted in the Energy Policy Act of 2005, and also would authorize several new financial assistance programs.

While such programs might help boost energy efficiency in certain sectors, their potential benefits are unlikely to be sufficient to justify the budget costs. However, the bill, as a whole, represents

an important contribution to the national discussion of how best to make our country more energy efficient. Several of the efficiency standards proposed in this legislation are absolutely consistent with the Department's activities and, I think, reflect consensus among efficiency advocates and manufacturers.

The bill also provides some useful new authorities, such as authorization for regional efficiency standards that may provide additional energy savings if the potential Federal and State burdens related to monitoring and enforcement can be resolved.

Secretary Bodman and Assistant Secretary Karsner have made efficiency standards a top priority. Since committing to a standards program schedule last January, the Department has met 100 percent of its targets to be on time, and we absolutely intend to continue to do so.

To shorten the time for a completed standard by nearly one-third, Secretary Bodman recently requested authorization from Congress to streamline the rulemaking process and allow the Department to go to a direct final rule for certain products when a clear consensus for a standard exists among manufacturers, efficiency advocates, the Government and other stakeholders. So, we look forward to working with the committee to have the Department's language considered and hopefully included in this legislation.

Title V of S. 1115 addresses the important issue of Federal energy management, and the Department supports the permanent authorization of the Energy Savings Performance Contracts. Under the leadership of Secretary Bodman, the Department is looking to lead by example and revolutionize its approach to energy efficiency in the Federal Government.

Our goal is to be the first agency to meet all of the targets in President Bush's Executive Order 13423, and to exceed the requirements in key areas of reducing energy consumption, greenhouse gas emission, building efficiency, clean energy production, and use in fleet management.

The Energy Savings Performance Contracts, together with the Utility Energy Services Contracts, we feel, are essential for project investment in the Federal sector. So, to strengthen these programs, we're working to transform our internal review process, simplify contracts, remove barriers and impediments that delay investments and serve as support, get more efficiency gains at accelerated rate, and create replicable models.

The administration and the Department of Energy look forward to working with this committee and the Congress on the Energy Efficiency Promotion Act, as well as other related legislative proposals that move us toward a secure energy future.

Mr. Chairman, that concludes my oral statement, and I would be pleased to answer any questions that the committee may have.

[The prepared statement of Mr. Mizroch follows:]

PREPARED STATEMENT OF JOHN MIZROCH, PRINCIPAL DEPUTY ASSISTANT SECRETARY  
FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY

Mr. Chairman, Senator Domenici, and members of the Committee, thank you for the opportunity to appear today and offer comments on S. 1115, the Energy Efficiency Promotion Act of 2007. I will also present an overview of some of the larger

efficiency efforts underway in the Office of Energy Efficiency and Renewable Energy (EERE).

COMMENTS ON S. 1115

The Administration has not had sufficient time to review or coordinate its inter-agency review of S. 1115, introduced just one week ago today, and therefore does not have a formal position on this legislation. There are many elements of the bill that appear consistent with the Administration's energy policy objectives, although a number of provisions raise practical, budgetary, or other concerns. S. 1115 contains language that appears to duplicate authorizations previously included in the Energy Policy Act of 2005 (EPACT). It also would authorize several new financial assistance programs. While such programs might help boost energy efficiency in certain sectors, their potential benefits are unlikely to be sufficient to justify their high budget cost. However, the bill as a whole represents an important contribution to the national discussion of how best to make our country more energy efficient.

Several of the efficiency standards proposed in this legislation are consistent with the Department's activities, and reflect consensus among efficiency advocates and manufacturers. The bill also provides some useful new authorities, such as the authorization for regional efficiency standards for space heating and cooling products, that may provide opportunities for additional energy savings if the potential Federal and State burdens related to monitoring and enforcement can be resolved. On the issue of appliance standards, the Department is working aggressively to address the backlog of rulemakings, and to that end, the Secretary sent proposed language to Congress in February to help us expedite rulemakings where there is consensus on a standard. EERE looks forward to working with this Committee to have that language included in this legislation.

Title V of S. 1115 addresses the important issue of Federal energy management, and the Department supports the permanent authorization of Energy Savings Performance Contracts (ESPCs). ESPCs provide essential flexibility in leveraging limited Federal resources to achieve substantial efficiency gains. However, we believe there are some aspects of the technical language that require further review and discussion, and we look forward to continued discussion with you and your staff on these and other issues.

I would now like to provide an update to the Committee on some of EERE's progress in the efficiency component of our portfolio. Our goal is to transform the built environment in a manner that maximizes efficiency gains and delivers meaningful benefits to consumers. Under the leadership of Secretary Bodman and Assistant Secretary Karsner, we are revolutionizing our efficiency activities, placing increased attention on Federal leadership in energy savings.

FEDERAL ENERGY MANAGEMENT

As is commonly cited, the Federal Government is the single largest consumer of energy in the United States. Thus, as we look to putting our Federal house in order, the potential for making a substantial contribution to becoming a more efficient nation is real and considerable.

President Bush recognized the significance of this opportunity when in January of this year he issued Executive Order 13423—Strengthening Federal Environmental, Energy, and Transportation Management. This Order targets both improving energy efficiency and reducing greenhouse gas emissions with a comprehensive approach for Federal facilities, alternative-fueled vehicles, product purchases, water consumption, and renewable power. Federal facility reduction goals are scheduled to increase by three percent each year through 2015, which, overall, is 10 percent more than what was mandated in EPACT 2005. The President's Order mandates increased renewable energy consumption from new renewable sources and on-site renewable energy generation.

As required by the Executive Order, each Federal agency must designate a senior official to take responsibility for implementing its provisions, and EERE's Assistant Secretary Alexander Karsner is that officer for the Department of Energy. We are taking the Executive Order as a challenge to transform the way that we at DOE contract and manage our energy use. And it is not as if DOE is starting at the top of the Federal heap. A recent study of energy intensity at 20 Federal departments and agencies looked at the reduction in Btus per square foot in 2006, compared to 2003, and DOE ranked 12 out of 20. Our goal, however, is to be the first agency to meet all of the President's targets, and to exceed the requirements in key areas of reduced energy consumption and greenhouse gas emissions, building efficiency, clean energy production and use, and fleet management. Secretary Bodman believes

that we must lead by example, and he is challenging the Department to accelerate our energy efficiency efforts.

A key vehicle for reducing our energy consumption is the ESPC. This performance-based contracting tool, together with the Utility Energy Services Contracts, is essential for project investment in the Federal sector. To strengthen these third-party financing and investment programs, we are working to transform the internal review process, simplify contracts, remove barriers and impediments that delay investments and service support, get more efficiency gains at an accelerated rate, and create replicable models across government.

#### EFFICIENCY STANDARDS

Turning to a different area of DOE responsibility, I would like to give you an update on the Department's energy conservation standards program, a key vehicle for national energy savings. Established Federal standards for appliances and other equipment have made a significant contribution to energy efficiency. Federal residential energy efficiency standards that have gone into effect since 1988, or will take effect by 2007, will save a cumulative total of 34 quadrillion Btus (quads) of energy by the year 2020, and 54 quads by 2030. The estimated cumulative net present value of consumer benefits amounts to \$93 billion by 2020 and grows to \$125 billion by 2030.<sup>1</sup>

However, as has been publicly stated, the Department has fallen behind in setting and updating required standards. This is a challenging area of great complexity, but the scale of potential energy savings for our Nation demands that we address it with renewed commitment. Since arriving at the Department of Energy last March, Assistant Secretary Karsner has made efficiency standards a top priority, as has Secretary Bodman, who has overseen significant progress during his tenure.

The Department is committed to eliminating the backlog of rulemakings and meeting all of its statutory requirements. On January 31, 2006, the Department submitted a report to Congress on its standards activities, but most importantly, with that report we submitted our action plan and schedule for rulemakings for the next five years. Since committing to this schedule for the standards program, the Department has met 100 percent of its targets. Including test procedure rulemakings and codification of prescribed standards, we have completed eight rulemakings since EFACT 2005 and made significant progress on others that were underway prior to EFACT 2005. In 2006, we began standards rulemakings for 12 products. These accomplishments represent a pace substantially more aggressive than at any prior time in our history. The final rules regarding energy conservation standards for electric distribution transformers and residential furnaces and boilers are on schedule and expected to be issued by September 30th of this year.

Success is coming through a variety of measures, from bundling similar products together to move them collectively through the rulemaking process, to organizing staff and contractors into seven technology teams to focus on similar areas and requesting increased budgetary support for the standards program.

Most recently, Secretary Bodman sent legislation to Congress requesting authorization that would significantly speed up the standards process and ultimately bring more efficient products to market sooner. This fast-track legislative proposal would streamline the rulemaking process and allow DOE to go to a Direct Final Rule for certain products when a clear consensus for a standard exists among manufacturers, efficiency advocates, the government, and other stakeholders. This process could shorten the time to a completed standard by nearly one-third. More than 30 products could be included if the legislation is enacted, from a variety of home appliances such as dishwashers to lighting, plumbing equipment, and industrial products like commercial refrigerators and freezers. We look forward to working with Congress on this proposal, along with other potential related legislative proposals.

The Office of Energy Efficiency and Renewable Energy manages a host of other programs devoted to the research, development, and deployment of energy efficient products and practices, from solid state lighting to plans for zero energy buildings. Redesigning the energy fabric of our Nation will take the combined and dedicated efforts of both the private and public sectors, at the State, local, and Federal levels. This Administration, the Department of Energy, and most specifically, our office, EERE, is eager to join with Congress to find the most effective paths to a more secure energy future.

This concludes my prepared statement. I would be happy to answer any questions the Committee members may have.

<sup>1</sup>Department of Energy, Report to Congress on Appliance Energy Efficiency Rulemakings, including Battery Chargers and External Power Supplies, January 31, 2006.

The CHAIRMAN. Thank you very much.

Let me ask about one of these standards, the furnace efficiency standards.

Mr. MIZROCH. Yes, sir.

The CHAIRMAN. Since the passage of EPLA 2005, DOE's done a good job of beginning to move the approval of these rulemakings on appliance efficiency standards. One of the proposed standards relating to residential furnaces is controversial, because it would adopt an efficiency standard that many northern States believe is too low for their climates. Some commentators have urged you to set a separate efficiency standard for warm States, versus cold States. The Department has said that it lacks authority to do that, but has said, instead, that States could ask for waivers. And there is authority to give waivers—

Mr. MIZROCH. Yes, sir.

The CHAIRMAN [continuing]. As I understand it. Now—

Mr. MIZROCH. Yes, sir.

The CHAIRMAN [continuing]. We have testimony, on the second panel, from the Gas Appliance Manufacturing Association, strongly opposed to the idea of regional standards. We have a provision in S. 1115 authorizing DOE to set regional standards. What's your thought as to the appropriateness of us trying to legislate to give you authority to set regional standards? Is that something that's important to do, or do you think we should back away and just have you use your waiver authority?

Mr. MIZROCH. I think we are generally in favor of having the regional standards, but I think they need to be balanced very carefully with the ability to enforce those standards. We think that we need to work closely with the stakeholders—in particular, with the States—to make sure that, if there is such a standard, that it's enforceable. I think that's one of the big concerns that industry has expressed, that, in their view, at least from the statement that I read, that they don't think it's enforceable. So—

The CHAIRMAN. Not enforceable, in what way? You mean someone might be selling something into a region that was not—

Mr. MIZROCH. Part of that State standard, yes, sir.

The CHAIRMAN [continuing]. Part of that State standard? What harm is done by that?

Mr. MIZROCH. The purpose of doing this is to achieve the largest energy savings that are cost-effective in these States in the first place; the northern States, for example, that we're talking about.

The CHAIRMAN. Right.

Mr. MIZROCH. Those regulations, one presumes, would need to be enforced to be effective, if you're going to achieve the savings that you want to achieve.

The CHAIRMAN. So, you might not achieve as much with lax enforcement or—

Mr. MIZROCH. That's correct.

The CHAIRMAN [continuing]. Or lack of enforcement as you would with enforcement.

Mr. MIZROCH. Yes, sir.

The CHAIRMAN. But you still would achieve some.

Mr. MIZROCH. You certainly could achieve some, but I would just suggest that our position is that we generally like the authority,

but we want to be able to discuss with you what would be sufficient to be able to enforce that authority; you know, working, in particular, with the States.

The CHAIRMAN. Okay.

Mr. MIZROCH. And, I might add, on the specific example that you mentioned, the final rule on the furnaces will be ready by September 2007.

The CHAIRMAN. Okay. Let me ask about another item. As you know, a number of EAct 2005 provisions have not been funded. I understand that you plan to fund the State Utility Efficiency Pilot Programs that were authorized in section 140 of EAct 2005. Could you elaborate a little bit on that program, and tell us whether you seek to include a program that requires a utility to reduce its energy use by a certain percentage over 10 years? As you know, we've been urged, here on this committee, to do something in the nature of an Energy Efficiency Resource Standard. Is this something that you're getting done as part of this section 140?

Mr. MIZROCH. We have suggested, in our spend plan for 2007, to spend \$5 million on section 140 in 2007. I think the answer is that we think that this is a start, and that we hope that it'll be effective. We're going to try to collaborate very closely with the stakeholders in this area. This is one of several areas where we're going to be collaborating with States and stakeholders to promote energy efficiency.

The CHAIRMAN. Okay. All right. My time is up. Let me go ahead and call on—Senator Thomas is next.

Senator THOMAS. Well, thank you, Mr. Chairman. I appreciate what you and the ranking member have done on this bill.

I have some questions, but I'll submit some of those for the record.

I'm a little concerned that apparently we're going to consider a bill that's been fairly hastily drafted, and I wonder—I'm going to ask when we're going to be able to see the bills, and how much time we're going to have for the opportunity to consider amendments and those kinds of things. We've talked about, over the last several months, environmental performance, and we've talked about efficiency and so on, but one of the things that I think we haven't talked about as much as we should is: how are we going to provide affordable energy for consumers as we move toward these things? All these things are going to happen over time, but, in the meantime, we're going to have to have energy and so on. So, I hope that we can focus on the opportunities to increase energy production and be able to do some of those things.

So, I'll ask the chairman about bills, and so on, a little later. But Mr. Mizroch, section 503 allows for the Federal Government to sell power back to the grid.

Mr. MIZROCH. Yes, sir.

Senator THOMAS. I'm concerned about that scenario. What does it establish for the Government to be competing with the private sector? How does that work?

Mr. MIZROCH. I think the thought behind this is not that we're going to compete with the private sector, but we're going to promote the expanded use of green power. One of the important objectives is to enable the agencies to use the ESPC to expand a genera-

tion of renewable power on Federal lands. I don't think it's our intention at all to try to compete with the State-governed utilities or the private sector on this.

Senator THOMAS. So, you wouldn't be in the market, and you wouldn't be subject to State and local electric laws and rules.

Mr. MIZROCH. I think when we look at all of our power purchasing agreements now, we assume that we are subject to those rules, Senator. I would have to check with our Office of Electricity Delivery and Energy Reliability—and our general counsel—to get a broader answer, but I would say, right now, that it's not our intention to be outside of those rules, at least not ours.

Senator THOMAS. Does this provision, the way it's written, leave the door open for the Defense Department to operate a power generation facility on a military base?

Mr. MIZROCH. I think they have that authority already, Senator, if I'm not mistaken. I could be wrong, but I think they have different legislation. They have some sort of legislation that allows them to do that. I know that they're looking at assured sources of energy. Under what we're talking about, I don't know exactly how this would affect the Department of Defense.

Senator THOMAS. Is there guidance as to what can be paid from the proceeds and how these facilities can and should be regulated by the environment and other requirements?

Mr. MIZROCH. Well, the regulation would fall under existing regulation. Any sort of power facility would have to comply with all State, local, and Federal environmental regulations, to begin with. So, we're not talking about putting anything up that couldn't be, or wouldn't be, done commercially and under the same restrictions.

Senator THOMAS. Okay. Okay.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Sanders.

Senator SANDERS. Thank you very much, Mr. Chairman. Thank you and Mr. Domenici for your work in writing this bill. We appreciate working with you on some important provisions, and I intend to be a sponsor of the bill, and we think it's a very good start.

Mr. Secretary, thank you very much for being with us today.

Mr. Secretary, let me begin by asking you, as a representative of the administration, some kind of broad questions, and then I want to get to a little bit more specificity.

Is it the administration's position that global warming is man-made?

Mr. MIZROCH. My understanding is, Senator, that we have acknowledged climate change as a problem, and we are working—

Senator SANDERS. You have acknowledged climate change as a problem.

Mr. MIZROCH. Yes, sir, and we're working—

Senator SANDERS. Well, I'm really glad to hear that, sir.

Mr. MIZROCH. We're working, in my view, to do something about it.

Senator SANDERS. Mr. Secretary, when you say that the administration has recognized climate change as a problem, we have heard testimony from scientists who say that there are major cataclysmic changes taking place right now, and that if we do not move forward within the next 10 years, there are going to be irreversible changes

that will impact billions of people. I am glad that the administration understands that we have a problem. That's a good start.

Let me ask you this. Wal-Mart, which is not generally noted as one of the more progressive corporations in America——

Senator DOMENICI. Who is that, sir?

Senator SANDERS. Wal-Mart.

Senator DOMENICI. You said they were——

Senator SANDERS. Are not usually regarded as one of the more progressive corporations in the country.

Senator DOMENICI. Well, you know, Mr. Chairman, I just wanted to ask—you will tell me if it's inappropriate, but I just wonder if the questions could have been asked in what seems to be going forward now from Senators are relevant, have anything to do with the issues we've——

Senator SANDERS. I think they do.

Senator DOMENICI. Do we want to get right down to this bill, or do we want to have a question-and-answer about global warming from a——

Senator SANDERS. Well, I think it's important to understand how strong the commitment of the administration will be, and I'm going to ask some specific questions, and I wanted to mention that Wal-Mart itself intends to increase fuel efficiency in their own truck fleet by 25 percent over a 3-year period, and doubling it within 10 years.

Can you give us an idea, Mr. Secretary, what the administration plans on doing with our Federal truck fleet and car fleet? There is, many people believe, enormous potential to make our trucks and cars much more energy efficient. Again, Wal-Mart is looking at a 25 percent improvement over 3 years, and doubling that within 10 years. What is the administration's commitment, in terms of our Federal fleet?

Mr. MIZROCH. Well, Senator, before the executive order was issued by the President, January 24, there was already a significant commitment, which is even more significant now. In that executive order, I think many of the provisions are mirrored in the legislation that you have here. They're really quite extraordinary. We're proposing 3 percent a year, for a total of 30 percent in 10 years. It's quite——

Senator SANDERS. Well, is——

Mr. MIZROCH [continuing]. Breathtaking. In order to get there, Senator——

Senator SANDERS. Thirty percent in 10 years is, you think, breathtaking. That's for fuel efficiency in——

Mr. MIZROCH. It's not just efficiency, it includes renewable energy and includes our fleets. I would be, actually, more than happy to provide you with——

Senator SANDERS. I would like to see——

Mr. MIZROCH [continuing]. A number of areas, both on fleets, on vehicles—it's quite an extensive effort that we've undertaken for biofuels, batteries, lightweighting of vehicles, and things that I believe will have a major contribution, not just in this country, but——

Senator SANDERS. Some of us would like to see the Federal Government becoming a model for what our country should be doing.

Mr. MIZROCH. Yes, sir.

Senator SANDERS. It would be important, it seems to me, to move a lot more aggressively than what you are suggesting, because we're seeing many corporations already doing that. Can you tell me, for example, how many hybrids, what percentage of fuel efficient hybrids the Federal Government plans on purchasing or utilizing?

Mr. MIZROCH. I will send you the specific numbers.

[The information follows:]

In Fiscal Year (FY) 2006, the Federal fleet included 866 hybrid vehicles, which comprised less than 0.2 percent of the total Federal fleet inventory. The Federal fleet plans to acquire 379 hybrids in FY 2007, 371 in FY 2008 and 408 in FY 2009. These acquisitions will comprise less than 1 percent of the acquisitions each year.

Mr. MIZROCH. They're actually quite extensive. It's a mix, not just of hybrids, Senator, but it'll be flex-fuel vehicles, hybrids, and we're actually moving, in some instances, to see if we can get approval for electric vehicles. There are actual electric vehicles that could replace some of the—

Senator SANDERS. That's right.

Mr. MIZROCH [continuing]. Conventional fuel vehicles that we have already. I'm not just saying this, but I think we're moving—it is the desire of the Secretary and of the Assistant Secretary to move very expeditiously and significantly in these areas, and—

Senator SANDERS. Well, I thank you. I think my time is expired. I would just suggest that some of us are not skeptics. Some of us believe that this planet and this country face a major crisis. Some of us want to see our Federal Government leading the country, and leading the world, in a new direction. So, we would hope that we would have your support for that effort.

Thank you very much, Mr. Secretary.

Mr. MIZROCH. Thank you.

The CHAIRMAN. Thank you very much.

Senator Domenici. And then Senator Murkowski—why don't you go ahead?

Senator MURKOWSKI. All right, thank you, Mr. Chairman. Thank you, Senator Domenici.

I think that this is important legislation, and I appreciate both of you gentlemen taking a leadership role in this. I want you to know that, after our press conference on this legislation last week, I went downstairs and found the guy who's in charge of all the light bulbs for this building, and my office is getting converted over. So, it can be done, a little bit at a time.

I wanted to ask you, Mr. Secretary, a question about the pre-emption issue. There is a provision—this is under section 205 of the legislation—that clarifies the intent, which is that the Federal pre-emption does not apply to products for which there are interim standards. I have heard that from folks who appear concerned about the effect of potentially allowing the States to take over the setting of efficiency standards, whether they're those that manufacture televisions or appliance manufacturers. They're concerned about different standards. You spoke to this very briefly in your first response to Senator Bingaman. Can you just speak a little bit more about this issue? Because I think this is one that we're really

going to be focusing on, perhaps struggling with, as we try to reckon with regional standards and the whole pre-emption issue.

Mr. MIZROCH. This is a very important issue that you've brought up, and one that we welcome a continued dialog with the committee on.

The Federal pre-emption of State standards was a key motivation for the establishment of the national standards program in the 1970's and the 1980's. Quite frankly, we think it remains vital for the future of the program. We welcome the bill's attempt to clarify the provision of the existing statute. We think it's essential that Federal pre-emption continue in those areas where national minimum standards are in place, or where the Department of Energy has concluded, based on the public rulemaking process, that no standard is warranted. So, I believe that we are having a dialog with the committee on that, and would certainly like to continue to do so as this bill goes through process.

We do think Federal pre-emption, in most cases—perhaps not every one—is important and warranted.

Senator MURKOWSKI. But it sounds, at this point, that you would acknowledge this is one of these areas where we're going to have continuing discussion, as we try to work this through.

Mr. MIZROCH. Yes, ma'am.

Senator MURKOWSKI. Tell me whether or not we have any standards—modern standards or current standards in place to govern testing, whether we're talking about televisions here or computer screens. You know, when you think about all of the electronics that are out there today, and the ones that, 3 years ago, we didn't even imagine were going to be out there—I've got teenage boys, and I'm seeing everything new that's coming out on the market. How do we provide for these mandatory labels that we reference in section 206? How do we develop the standards on this emerging technology, so that we know that the standards are in place? We don't want to do anything that's going to hinder the development or advances in the technology. How do you make this work?

Mr. MIZROCH. Well, again, you've brought up another good point. We have test procedures, but they need updating, and they need updating across the board.

Senator MURKOWSKI [continuing]. How outdated are they currently?

Mr. MIZROCH. Well, the technology continues to race ahead of us. Plasma TVs are a great example, because they have been largely unrated for energy efficiency, and they are huge energy users. Now they've proliferated into the marketplace in a really short amount of time. So, I would just say they need updating, and we need to be constantly working on new technology as it comes onboard.

Senator MURKOWSKI. Well, let me ask you, then—

Mr. MIZROCH. Yes.

Senator MURKOWSKI [continuing]. Let's leave plasma-screen TVs aside for a moment. You take a refrigerator or an appliance, I guess, a regular TV—although it's tough to call a TV regular anymore; it's like calling a cup of coffee regular.

[Laughter.]

Senator MURKOWSKI. Are there standards that are current?

Mr. MIZROCH. Yes, ma'am.

Senator MURKOWSKI. Okay.

Mr. MIZROCH. Refrigerators have actually been one of the huge success stories, because we've reduced energy consumption by two-thirds while improving the refrigerator itself. So, that's actually—

Senator MURKOWSKI. Right. I'm just wondering how difficult it's—

Mr. MIZROCH [continuing]. Been one of our great successes.

Senator MURKOWSKI [continuing]. Going to be for you to implement what we are suggesting here with the energy efficiency labels. We want to make sure that when a label goes on, it's a current label, and that it has some meaning to today.

Mr. MIZROCH. We are in favor of the labeling provision, generally, and I think that we just want to continue to talk with the committee about the length of time that it may take to do the proper work to make sure that the labeling that we're going to provide—that FTC's going to provide—is going to be effective.

Senator MURKOWSKI. Thanks.

Thanks, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Domenici, did you have any questions of this witness?

Senator DOMENICI. No, I don't. I just want to, maybe, ask this one.

Since the passage of the Energy Policy Act, a year and a half ago—

Mr. MIZROCH. Yes, sir.

Senator DOMENICI [continuing]. Which had a lot of—to be honest, had a lot of this in it, telling you all to get with it and do some of these things—

Mr. MIZROCH. Yes, sir.

Senator DOMENICI [continuing]. I'm not here, complaining, although I would tell you that the fact that it has been so hard for you to get things done leads me to a question that just reeks for an answer, and that is: are we going to be able to enforce, in broadbased standards, what we are talking about here? What is your gut as to how that's going to work, or what we're going to need to do to make it work? To me, it seems to be an enormous management job, a huge job of cooperation, and many other qualifiers that I could think of in a few moments. How do you assess that?

Mr. MIZROCH. Well, Senator, the area of energy efficiency and the areas included in this bill are very broad. I mean, they include appliances and vehicles and Federal energy management through ESCOs. So, the topic itself is an enormous one.

I would suggest to you that a leadership team is in place now that is going to work very hard to implement the provisions of the EPAct, and new legislation that may arise, as well. It is daunting, but it seems to me that the country—that Americans, in general, are acknowledging energy efficiency as something important, and I think if we work together, it'll happen. I don't think the Department of Energy, by itself, is going to make things happen, but I think if all of us work on this, it will happen.

Senator DOMENICI. Well, that's exactly the way I feel. I think we've got to do it, but we have to have enough, not only gumption,

but enthusiasm, behind it that we will get it done. It won't be you all, but it'll be you all, because the Department—because Congress wants it done and we aren't arguing and fighting, we're all trying to do something.

So, I thank you very much for what you're doing, and hope that we can get some reports from you. The work you've already done is on the law that we passed. Is that not right? You're doing work on the year-and-a-half-old—

Mr. MIZROCH. Yes, sir, absolutely.

Senator DOMENICI. Is there something you could give us to show that work is being done under that bill, that we might feel a little more comfortable that things are achievable and being done?

Mr. MIZROCH. Well, Senator, I think there actually are reports that we're required to deliver to you, but I will most certainly send you over, where we are in the process, and—

Senator DOMENICI. Will you?

Mr. MIZROCH [continuing]. The things that are coming up. Yes, sir.

[The information follows:]

The Department is working aggressively to implement the Energy Policy Act of 2005 (EPACT). To date we have been working at a fast and serious pace to complete the 155 sections assigned to EERE and have completed over one-third of them as of May 27th, 2007. EERE also continues to expeditiously address the backlog of appliance standards, in addition to those established in EPACT. Some selected examples of EPACT authorized activities that EERE has requested initial or continued funding for in FY 2008 and merit mention are: the selection of six cost-shared cellulosic ethanol biorefinery demonstration projects to be funded up to \$385 million as directed in Section 932; the establishment of new EnergyStar® qualification levels for clothes washers as directed in EPACT Section 131; the issuance of grants to establish Advanced Energy Efficiency Technology Transfer Centers as directed in EPACT Section 917; reporting on the establishment of a program to inform the public on various aspects of energy efficiency as directed in Section 134; developing the next generation of low-emission, high efficiency diesel engine technologies as directed in Section 754; providing financial assistance to states to carry out energy efficiency pilot programs; leading the Next Generation Lighting Initiative as directed in Section 912; and requests for the establishment of a loan guarantee office to allow the Department to issue loan guarantees for early commercial projects that employ advanced technologies such as those listed in Title XVII of EPACT 2005.

Senator DOMENICI. We appreciate it. Thank you very much.

Mr. MIZROCH. Thank you.

Senator DOMENICI. Thank you, Mr. Chairman.

The CHAIRMAN. Well, thank you. Oh, Senator Lincoln, didn't see you come in. Go right ahead.

Senator LINCOLN. Thank you, Mr. Chairman. I'll be brief. I know the Secretary has a busy schedule, but we're pleased that you're here.

As you know, in the 1992 energy bill, we established Federal and State fleet requirements to reduce our dependence on foreign oil. Of course, biodiesel can only be 50 percent of that Federal fleet requirement, despite the fact that most of our heavy-duty vehicles are diesel vehicles, which could easily run on biodiesel, probably more easily, until we get the technology for the design of a renewable diesel from other sources. Do you think it's still a good policy to allow biodiesel to account for only 50 percent of that requirement? How soon do you think that people might be running up against a wall on that?

The second question would be: how much do you assist, from the Department of Energy, other agencies in this country, in trying to meet requirements, or to do a better job in setting an example, as the Federal Government should be, in terms of energy conservation?

Mr. MIZROCH. Senator, if I could answer the second question first, the executive order is actually quite sweeping, the one that the President issued on January 24, I believe it was, the day after the State of the Union, and our Federal Energy Management Program collaborated very closely with the CEQ and the White House on that. I think that it specifically requires the Federal agencies to pay very close attention to this. So, I think the answer is that we will be collaborating very closely with other Federal agencies in trying to promote all of these new ideas, both in energy efficiency, renewable energy purchase, and the other things that we're going to be doing, which includes fleets, as well.

So, while we think that the FEMP program has been doing okay, perhaps not as well as it could, we expect considerably more activity through that program. I think some of the provisions in the legislation that you've proposed to reauthorize—to, sort of, permanently authorize that—will help us, as well.

But I think the answer is that with this executive order, we're going to be doing considerably more. It's very, very ambitious. It's going to be quite a challenge to meet, but we're going to take it up.

On your first question about biodiesel, I will answer that broadly, and probably have to get back to you on a more specific answer.

But the Department itself is doing work, as I'm sure you're aware, principally on cellulosic ethanol development. Biodiesel is much more of a conventional product, the same way that ethanol produced from corn is a conventional product. The work that we're doing in biodiesel now is collaborating with ASTM and private-sector regulatory groups to develop codes and standards for the fuel itself.

In terms of the requirement for the fleet, I think your question is more about a production—or is it about a production—

Senator LINCOLN. Well, unless we're prepared to replace a combustible diesel engine fleet immediately, my question is: is 50 percent as a part of that requirement, enough to meet the needs that we're going to have, not only now, but in the future, with combustible diesel engines, which are the majority of our heavy-duty equipment?

Mr. MIZROCH. It would probably be better for me to get back to you with a specific answer on that question, so that I don't misspeak on it.

[The information follows:]

The Energy Conservation Reauthorization Act of 1998 (ECRA) amended the Energy Policy Act of 1992's (EPACT) requirements for Federal alternative fuel vehicle (AFV) purchases to allow Federal fleets to generate one AFV acquisition credit for every 450 gallons of pure biodiesel (B100, equivalent to 2,250 gallons of B20) purchased for use in diesel vehicles more than 8,500 lb gross vehicle weight rating (GVWR) (42 USC 13220). To receive credit for an AFV acquisition, the biodiesel must be neat (B100) or in blends that contain by volume at least 20 percent biodiesel (B20). Federal fleets are allowed to use these credits only to fulfill up to 50 percent of their EPACT AFV purchase requirements. These credits can be claimed only in the year in which the fuel is purchased for use, and they cannot be traded among fleets.

Although biodiesel use is limited in terms of obtaining EPACT credits, its use was not limited under Executive Order (E.O.) 13149, "Greening the Government Through Federal Fleet and Transportation Efficiency," which required Federal fleets to meet the petroleum reduction goals. 65 FR 24607 (April 21, 2000). Nor is biodiesel limited under E.O. 13423, "Strengthening Federal Environmental, Energy, and Transportation Management," for meeting either the petroleum reduction or alternative fuel use goals. 72 FR 3919 (January 24, 2007). Furthermore, this cap has not been a hindrance to biodiesel use as no individual agency as of Fiscal Year 2006 has used enough biodiesel to reach the 50 percent limit.

Senator LINCOLN. Great. Well, I'll look forward to visiting with you and certainly moving forward on that issue, because there's a—

Mr. MIZROCH. Okay.

Senator LINCOLN [continuing]. Tremendous need to be met. I'd just remind you that there were some directives, in the 2002 farm bill, for energy conservation initiatives from the agencies, which—hopefully, the executive order will push people a little bit harder. But there were some directives there, which I don't think we got much results out of.

Mr. MIZROCH. Okay.

Senator LINCOLN [continuing]. But we'll keep pushing.

Thank you, Mr. Secretary.

Mr. MIZROCH. Thank you, Senator.

The CHAIRMAN. Thank you very much.

We have a second panel. Unless members have any burning questions. Senator Sanders, did you have—

Senator SANDERS. A very brief question.

The CHAIRMAN. Yes.

Senator SANDERS. Mr. Secretary, my understanding is that Australia, and, I believe, Ontario, intend to ban incandescent light bulbs. What do you think about that?

Mr. MIZROCH. I'm aware of discussions going on within the industry itself as to whether they, themselves, want to consider a ban on incandescent bulbs, or consider, in the alternative, making them extremely more efficient. I know that one of the manufacturers has done that already. So, there could be an efficiency standard, rather than an outright ban, on incandescents. We're moving ahead, both on the CFLs, to make the light spectrum better. They improve every year. That's one of the big consumer concerns, vis-a-vis incandescent, is how good the light is, the spectrum.

Senator SANDERS. What about LEDs?

Mr. MIZROCH. It's a transformational technology that the Department continues to work on. We see that as being one of the most significant technology developments in decades, or more. The Department's doing a lot of work in this area, and I would just suggest to you that it's a very dynamic area that the market, in part, is going to control, not just the Federal Government. But we're working very closely with industry on all three of the—particularly on the CFLs and LEDs, but I would just suggest to you that the Federal Government doesn't want to make a decision on banning incandescents right now. I don't think that's in our purview, just yet.

Senator SANDERS. Thank you.

The CHAIRMAN. All right. If there are no other burning questions—Senator Thomas, did you have a burning question here?

Senator THOMAS. No, sir, I'm in the dark about that.  
[Laughter.]

The CHAIRMAN. All right.

Why don't we thank this—

Senator SANDERS. Thank you.

The CHAIRMAN [continuing]. Witness and ask the second panel to please come forward. I'll introduce them as they're coming forward.

As Senator Domenici said, our leadoff witness is Mayor Martin Chavez, from Albuquerque, who is here testifying on behalf of the U.S. Conference of Mayors. We very much appreciate him being here. He has been a leader in New Mexico on this whole set of issues of energy efficiency, and not just a leader in our State, but nationwide, as well.

I am advised that the next witness is Mr. Jim Kerr, who is the commissioner with the North Carolina Utilities Commission, and is president of NARUC, the National Association of Regulatory Utility Commissioners. We appreciate him being here.

Alicia Collier is next. She is the director of the Global Energy Policy for Honeywell Building Solutions—Honeywell International, and speaking on behalf of the Federal Performance Contracting Coalition.

Mr. Schjerven, who is the chief executive officer emeritus with Lennox International, speaking on behalf of the Gas Appliance Manufacturers Association, thank you for being here.

Bill Prindle is the acting executive director for the American Council for an Energy Efficient Economy. Thank you for being here.

Kyle Pitsor is the vice president of government relations with the National Electrical Manufacturers Association.

So, we have a very distinguished group of presenters here, and we look forward to each of you giving your testimony. We will include your full testimony in the record. If you would give us about 5 or 6 minutes of summary of your testimony, and then we'll have some questions.

Why don't we start with Mayor Chavez. Thank you, again, for being here.

Senator DOMENICI. Mr. Chairman.

The CHAIRMAN. Yes.

Senator DOMENICI. Mr. Chairman, before we start with the Mayor, I wonder if I might explain to the panel, and to him, that it is time to be on the floor for the competitiveness bill, and I'm going to go and see if I can finish, and come back and close up with you. But I do appreciate all of you. It's a terrific panel. If we can just get our work done in comparison to what you all stand for, we'll be in good shape.

Mayor, we truly thank you for your special effort to help us today.

Thank you all very much.

The CHAIRMAN. Thanks.

Mayor Chavez, go right ahead.

**STATEMENT OF MARTIN J. CHAVEZ, U.S. CONFERENCE OF  
MAYORS AND MAYOR, ALBUQUERQUE, NM**

Mr. CHAVEZ. Thank you, Mr. Chairman and members of the committee, and Senator Domenici, as well. I'm fully cognizant of the obligation of voting. My best job in my entire life was running the elevators up here, in law school.

[Laughter.]

Mr. CHAVEZ. And may end up, yet again, if you still had them, in that position.

[Laughter.]

Mr. CHAVEZ. I'm speaking, today, on behalf of the United States Conference of Mayors. I want to applaud the committee for this initiative. It's a perfect fit with the 10-point plan of the National Conference of Mayors that we approved in our last meeting here in Washington, "Strong cities, strong families, for a Strong America," and particularly endorsed by our national president, Trenton, New Jersey mayor, Douglas Palmer.

I want to briefly talk about some of the broader perspectives on this, because, as you know, America's mayors have helped lead the fight, if you will, to combat climate change. In particular, the Energy and Environment Block Grant Initiative speaks to what we're trying to do. I do want to thank Senators Menendez—and I know the Senator is not here—and Senator Sanders, for your assistance on this. Of course I have got to suck up to my—Senator Bingaman at every—

[Laughter.]

Mr. CHAVEZ [continuing]. Every possible point through the testimony.

Back in 2005, at our annual meeting, Mayor Greg Nickles, the mayor from Seattle, started the initiative to have America's mayors sign onto the Kyoto Protocol. We are close to 500 mayors, now having signed on. Of course, that calls for a reduction in greenhouse emissions 7 percent below 1990 levels by the year 2012. I am pleased to report to you that Albuquerque's emissions are down 63 percent, substantially below the Kyoto Protocol, and we've done it through a number of initiatives that we've had the capacity to do, because we have essentially taxed ourselves, but that other communities don't have that benefit to do. That's why this particular portion of S. 1115 is so very, very important.

In terms of new energy supply, we learned a long time ago—and I think the Senate is cognizant of this—that the cheapest form of new product is conservation. It is certainly the most cost-effective. In Albuquerque, when I first took office a long time ago, we found out that we were facing a substantial shortage of water, and undertook a massive water conservation program, reducing our water use by one-third, while we added new accounts to our rapidly growing city by a full third. We were recently recognized, in London in November, by the World Leadership Forum, winning the World Leadership Awards on Utilities and Water Conservation. Energy is no different. Again, that is why this legislation is of critical importance to America's mayors.

Whether it be LED light conversion—which in Albuquerque, we take 3 percent of all of our capital moneys—we set them aside specifically for energy programs, and that allowed us to invest in LED

light conversion. It costs a little bit more up front, but you save, down the road. But, many, many communities, and particularly the smaller communities and the counties that would be the object of the energy—of this bill—don't have the wherewithal to do that. This is a perfect fit for those communities.

I want to share with you the preliminary survey results of the cities of the mayors that have signed on to the Kyoto Protocol. Whether it be Kyoto or anything else, we know these are just starting points. This is, I think, the most significant part of this legislation; it's a first step, and it's a dramatic first step. We won't get where we need to go unless we have legislation of this nature.

So, here are what America's mayors have said they would use these funds for:

One, formulate and enforce new building codes that encourage energy efficiency. We know the building codes are uniquely local in nature, but they are also very difficult to draft and do in a way that's business-friendly, that doesn't disrupt your economy, but also gives you the savings on carbon emissions.

Retrofit existing buildings to improve the carbon footprint.

Upgrade vehicle fleets.

Increase use of hybrids and clean alternative fuels. Albuquerque today has—43 percent of our fleet is alternative. I listened, for 2 years, to my experts tell me why it couldn't be done, and why that couldn't be done. I finally did it by executive order, the first American city to do so. Lo and behold, 6 months later they've got all types of solutions to the challenge. I think that's really a good part of this legislation. It just says, "Look, let's do this, let's get onboard and do the right thing."

Outreach to business communities to ramp up energy efficiency programs.

Purchase and produce clean alternative energy.

Improve public transportation infrastructure—critical to addressing climate change.

Expansion of car-sharing into residential neighborhoods.

Development of solar water and electric programs to provide lower-cost financing.

Promotion and education to the public and developers.

Development of climate action plans that undertake baseline greenhouse emissions assessments. This is something that's essential if you're going to have a thoughtful program. You have to have baselines as to what your carbon footprint is so that the initiatives are thoughtful.

As I've said, many of America's cities have already undertaken this challenge, but we desperately need the Federal partnership. Some things are uniquely local, but the production of energy, for example, really begs of Federal regulation and involvement.

So, on behalf of America's mayors, we strongly endorse the Energy and Environmental Block Grant set forth in section 605 of this legislation. Then, I want to, on behalf of America's mayors, pledge our continued partnership with the Congress and with the Federal Government. We can only go so far on our own; but we can go all the way, with your assistance.

In closing, I was honored to be the only American mayor invited to the International Conference on Climate Change hosted by

President Jacques Chirac. It was fascinating to have these delegates from all over the world on this tremendous challenge. You may not be surprised to hear that we're not exactly the world darlings on this issue right now in the global community, but they are looking to the United States for the leadership in the development of the technology and the savings. Yet today, they are looking to us, from all over the world. So, we have not lost all opportunity. We have a tremendous opportunity to still lead the world on this issue.

Again, Mr. Chairman, thank you for your leadership. Members of the committee, thanks so much. At the appropriate time, I'm happy to take questions.

[The prepared statement of Mr. Chavez follows:]

PREPARED STATEMENT OF MARTIN J. CHAVEZ, U.S. CONFERENCE OF MAYORS, AND  
MAYOR, ALBUQUERQUE, NEW MEXICO

Mr. Chairman, Senator Domenici, and Members of the Committee, thank you for this opportunity to appear before you today on the critical issue of promoting greater energy efficiency in our nation, its states and local governments.

I appear today on behalf of The United States Conference of Mayors. On behalf of the nation's mayors, I want to commend this Committee for moving forward with S. 1115, especially provisions of the legislation which seek to further empower the efforts of local government officials and state leaders through the establishment of a new Energy and Environment Block Grant initiative. Mr. Chairman and Members of the Committee, enactment of a block grant program to support local and state energy efficiency initiatives is mayors' top legislative priority, as set forth in the Mayors' 10-Point Plan: Strong Cities, Strong Families for a Strong America, as set forth by Conference President and Trenton Mayor Douglas Palmer. As such, this initiative is strongly supported by mayors throughout the nation.

First, let me share some broader perspectives on the legislation before you today. We believe the legislation begins to chart a new direction for federal energy policy. It addresses the many challenges before us by embracing new policies and incentives for key energy sectors and governmental leaders at every level. We are especially supportive of the bill's emphasis on higher efficiency standards for a variety of important equipment and technologies, expanded research efforts, and new energy efficiency and reduction goals.

And, the emphasis on state public utility commissions to ensure that they play a stronger role in advancing local and statewide energy efficiency efforts is important to our longer-term efforts to increase energy efficiency and reduce our nation's overall energy use. Finally, it is bipartisan, which is how we believe the nation will be successful in addressing the monumental challenges before us in this area.

RECORD OF ACTION BY MAYORS

The nation's mayors have been on the forefront of promoting energy efficiency out of our desire, which we know this Committee shares, to become more energy independent and reduce harmful emissions from our communities and regions.

In 2005, at our annual meeting in Chicago, IL, led by Mayor Greg Nickles of Seattle, The U.S. Conference of Mayors passed a comprehensive climate protection policy and encouraged mayors to sign the Mayors Climate Protection Agreement. At that meeting, 141 mayors pledged to begin the process of reducing greenhouse gas emissions and promoting green energy efficiency. Today, I am pleased to announce that more than 460 mayors have signed on to this Agreement, pledging local actions to reduce carbon dioxide emissions by seven percent below 1990 levels by 2012. Some cities are on their way to achieving this goal, but most of them will need additional help in reaching this milestone.

Also, at the Conference, we have adopted a goal with the American Institute of Architects to make all new buildings carbon neutral by 2030. This 2030 Challenge is our way of trying to create momentum and policy consensus on where we must go with the nation's building sector over the next generation.

Mr. Chairman, earlier this month, Newsweek recognized the important role mayors, cities and local governments play in responding to the challenges of addressing climate change, energy efficiency and energy independence ("Mayors Take the Lead" 16 April 2007).

Let me cite some of the efforts now underway in the City of Albuquerque. We are doing everything in our power to protect and preserve our natural environment, understanding we have a responsibility to make wise choices in determining the legacy that will be shared by future generations. Albuquerque has a history of demonstrating environmental responsibility and sustainability. It was an alarming discovery back in the early 1990's that our aquifer was not limitless, prompting one of the nation's most ambitious and successful water conservation programs as well as the biggest public works projects in the City's history—the San Juan Chama surface water diversion project. That forethought and innovative leadership has assured Albuquerque has a sustainable water supply now and for future generations.

In terms of renewable energy and energy conservation, more than 15% of the power used by municipal government comes from wind. We use solar thermal and photovoltaic panels for heating and pumping water at City pools. Traffic signals have been converted to energy efficient LED's and an aggressive lighting retrofit program is reducing the energy used in our facilities. More than 40% of the City's fleet is run on alternative fuels and all new vehicle acquisitions will be fueled with renewable alternative fuels. We harvest landfill gas to fuel a micro turbine that generates electricity to support the gas collection system and for ground water remediation, excess power sold back to the grid.

Other City initiatives include expanding the use of photovoltaic and thermal solar technology on city facilities; the application of Leadership in Energy and Environmental Design (LEED) and 2030 standards to building codes; expanding recycling, targeting zero landfill and expansion of our multi-modal transit system. These initiatives represent but a few of the steps on the way to a sustainable environment. As I talk to my constituents, they want action that provides them the opportunity to live the American life, with all its opportunity, while at the same time preserving our environment.

There is no question that the first step is to address energy efficiency, establish national goals, and give state and local governments the resources to develop community based, grass roots programs that result in real energy savings.

#### PRELIMINARY SURVEY RESULTS

The Conference of Mayors is now surveying more than 400 Mayors who signed the U.S. Mayors Climate Protection Agreement. Specifically, we asked Mayors to indicate how they would use new federal resources provided through an Environment and Energy Block Grant. Based on very preliminary responses, here are some of the activities cities would undertake:

- Formulate and enforce new building codes that encourage energy efficiency;
- Retrofit existing buildings to improve the carbon footprint;
- Upgrade vehicle fleets—increase use of hybrids and clean alternative fuels;
- Outreach to business communities to ramp up energy efficiency programs;
- Purchase or produce clean alternative energy;
- Improve public transportation infrastructure;
- Expansion of car sharing into residential neighborhoods;
- Develop solar water and electric programs that provide lower cost financing;
- Promotion and education to the public and developers; and
- Develop Climate Action Plans and undertake baseline greenhouse gas emissions assessments.

#### BLOCK GRANT PROPOSAL—SECTION 605

As I said before, many cities have already taken the first step in establishing very aggressive local goals of energy efficiency and carbon reduction. But, we need a partnership with the Federal government that requires the Energy Secretary to set higher efficiency standards and undertake other actions that appropriately rely on federal action.

At the same time, as proposed in S. 1115, additional new resources will help local officials develop and expand local energy conservation programs, undertake a new generation of energy audits, revise building codes, increase incentives to adopt new technologies and initiatives and other efforts to promote alternative transportation systems and other changes, all aimed at saving energy and reducing our nation's energy dependency.

Therefore, we strongly endorse the creation of an Energy and Environmental Block Grant at the Department of Energy, as set forth in Section 605, giving State and local governments new resources to establish implementation plans for adopting community energy efficiency programs and the resources to carry them out.

Such programs will unleash a creative and innovative power of local communities to coalesce around national and community goals, yet provide concrete programs that they can participate in to meet them.

Any successful national strategy must have this “bottoms-up” community approach that complements the top-down strategies of tougher energy efficiency standards and other necessary actions here at the federal level. Only by doing both will we get to where we need to be.

#### ENABLING LOCAL LEADERSHIP TO CHANGE HUMAN BEHAVIOR, LOCAL PRACTICES

Let me offer some perspectives about the role of mayors in changing human behavior which is such a critical consideration in dealing with the myriad of energy issues before the nation. In the early 1990s, when our nation faced a landfill crisis, cities and counties rose to the challenge and launched over 5,000 curbside recycling programs, started local procurement programs to buy recycled-content materials, and helped to spearhead a green packaging movement that involved the American Consumers Products industry. For the first time, we made it inside the American home to change behavior of what was as common as separating recyclables from ordinary trash so that it could be recycled.

People said this could not be done, that we could never get the citizenry to change its behavior in response to something as mundane as garbage. But we did. And most of those programs continue today with a national recycling rate of over 25 percent.

#### LOCAL OFFICIALS READY TO MEET THESE CHALLENGES

In our opinion the people and their leaders—mayors and other local officials—are ready and poised again to rise to an even more important challenge of making ourselves more energy independent, while lessening our use of fossil fuels and harnessing the ingenuity that resides within our communities and neighborhoods.

Mr. Chairman, it is at the local level that building codes get re-written, that demonstration programs can be launched, that new technologies can be introduced to neighborhoods, that people can rally to car pool, switch their lights to compact fluorescent bulbs, where businesses can decide to retrofit their boilers, weatherize their commercial establishments, transportation facilities can be reengineered and made available for alternative vehicles and reduced auto dependency, where energy audits can be performed for the local museum, girls and boys clubs, local libraries, and the list goes on and on.

We believe the Energy and Environment Block Grant will unleash a great deal of creativity that will help us get to the goals that you have espoused in S. 1115. Certainly, states and local governments can not do it on our own. We desperately need the Federal government as our partner. But we can, with your assistance and through more local innovation and creativity, provide an essential component to our national energy strategy.

Just to demonstrate the challenge, a study that the U.S. Conference of Mayors commissioned by Global Insight Inc. forecasts that between now and 2030, our nation will build over 39 million new homes and over 20 billion square feet of commercial space. If we are to absorb this kind of economic growth and meet our goals, we must begin now at all levels of government to promote a top down and bottoms approach, relying on the right balance of federal policy directives and incentives aligned with community-based strategies, to help us achieve greater energy efficiency and reduced energy dependence.

#### CLOSING COMMENTS

We believe, therefore, that the nation’s cities and counties play a vital role in our national goal of energy efficiency, energy independence and climate protection. The nation’s mayors support S. 1115, especially its important provisions for an Energy and Environment Block Grant program, as a vital first step in meeting the challenges before the nation. The United States Conference of Mayors endorses it and urges its passage as soon as possible. Mr. Chairman and Members of the Committee, thank you for this opportunity to share our views on this important legislation.

The CHAIRMAN. Thank you very much for being here and your testimony.

Commissioner Kerr, go right ahead.

**STATEMENT OF JAMES Y. KERR II, COMMISSIONER, NORTH CAROLINA PUBLIC UTILITIES COMMISSION, AND PRESIDENT, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS (NARUC)**

Mr. KERR. Thank you, Mr. Chairman, Ranking Member Domenici, and members of the committee.

Following the Mayor's lead, I would like to note the presence of our Senator Burr on this committee; and, although he is, I think, at home today, I want to thank him, on the record, for his service to our great State, his steadfast support of our Commission, and for his personal support and friendship.

My name is Jim Kerr. I'm a member of the North Carolina Utilities Commission, and president of the National Association of Regulatory Utility Commissioners.

NARUC appreciates the opportunity to appear before this committee today to work with this committee on this particular piece of legislation, as well as on the other important issues that this committee will be dealing with in this Congress.

The issues which we are discussing today are important to NARUC. It's important to the States that represent the membership of NARUC, and to the citizens that we serve.

Quite simply, energy efficiency is an important part of the formula of meeting the challenges that we face as States, as State regulators, as citizens of our States. NARUC as an organization, and the individual States that make up our membership have traditionally, and continue to be, very supportive of energy efficiency policies. We are supportive of this legislation, which has been introduced last week, with a few clarifications, which I will get to at the conclusion of my summary.

Let me speak briefly to the challenges we face. Despite the progress that was made in—with the passage of EPAct05, we, at the State level, continue to face significant challenges. Energy demand is growing. The cost of generation, both the fuel component, as well as the capital component, is increasing. Natural-gas prices continue to be increasing, and are increasingly volatile. We continue to be challenged by reliability issues in certain parts of the country. We, as States, as a Nation, and, as the Mayor has mentioned, as the world, continue to be growingly concerned about the risk posed by carbon. We have many pending large transition and generation investments that are needed in an uncertain investment world.

While not an answer to all of these problems, we, as State regulators, believe that energy efficiency offers many benefits in trying to meet these challenges. It offers environmental benefits, economic benefits, utility system benefits, and risk-management benefits through the diversification of utility portfolios.

As I mentioned, NARUC and the individual State members have actively supported energy efficiency policies. We are among the founding members of the leadership group of the National Action Plan on Energy Efficiency, which, in my written testimony, we speak more about. But this is a collaborative effort of State utility regulators, industry, other stakeholders, that has been facilitated by the Department of Energy and the Environmental Protection Agency, as an effort whose goal was to create a sustainable, aggres-

sive, national commitment to energy efficiency. I would like to commend DOE and EPA for their support of the States through this collaborative—this has not been a top-down effort, where the Federal agencies have told the States what they thought they ought to do, but, rather, have provided a framework and resources to support a collaborative process, and it has been very successful. In fact, Assistant Secretary Karsner was in Raleigh last week at the North Carolina Summit on Energy Efficiency, and we appreciate his personal commitment to the Action Plan, and for the work that he's doing in support of States' efforts on energy efficiency.

Last week, the North American Energy Standards Board met. NARUC was part of that process, working on the development of standardized business practices and measurements related to energy efficiency. NARUC, Edison Electric Institute, and Consumer Advocates are working on a collaborative process focusing on rate-making and rate design issues related to efficiencies. NARUC has passed specific resolutions supporting the action plan, appliance efficiency standards in the last energy bill, innovative rate design to encourage energy efficiency, transformer efficiency standards, and advanced metering infrastructure.

We have entered into a collaborative process with the FERC on demand response. We have participated in the drafting of DOE's section 139 report, which was issued last month, at the end of March, whose principal conclusion was that State and regional policies should capitalize on opportunities to use low-cost energy efficiency to meet growing demands and enhance system reliability.

I was asked to, and I want to, briefly mention a few matters going on in my home State, principally because they're illustrative of many of the questions which you have answered—or, which you have asked today from the podium.

North Carolina was the first State to use a public benefit fund for the support of energy efficiency, and we have used these funds to support a nonprofit corporation, Advanced Energy Corporation, whose sole purpose is to work on energy efficiency issues, not just in North Carolina, but around the world. We, at the Commission, are currently reviewing our integrated resource planning process to better prioritize and integrate energy efficiency and demand-side management with our traditional supply side resources in the planning process.

A month ago, we approved Duke Energy's request to build a single 800-megawatt super-critical pulverized coal unit in North Carolina. The original request was to build two units. We approved the building of one 800-megawatt unit. As part of that order, our Commission included the following two conditions: first, that Duke Energy is required to invest 1 percent of its retail revenues in energy efficiency in the demand-side management annually, and that they are required to retire older coal-fired units on a megawatt-for-megawatt basis to account for the actual load reductions achieved through those investments. We have, in the Piedmont Natural Gas last rate case, approved a decoupling ratemaking mechanism on a 3-year experimental basis. We have commissioned a study of a renewable portfolio standard which includes an element of energy efficiency. Just last month, it has been announced, in North Carolina, a very unique public/private partnership involving Duke En-

ergy, Progress Energy, Environmental Defense, the Sierra Club, and a private foundation, exploring specifically how State government can lead the way on energy efficiency as the largest consumer of energy in the State and as a political leader.

Finally, there is draft legislation pending in our legislature which would consider an REPS, which would be an RPS standard that would have a 2½ percent set-aside for energy efficiency, or megawatts, as part of the RPS, and it also addresses potential cost-recovery issues, including capitalization and the opportunity to earn on energy efficiency investments and possible incentives for those investments. Again, we are proud of the work that we are doing, and we appreciate, very much, the way that this legislation, which you have introduced, is supportive, principally, of those State efforts.

We have filed testimony in which we articulate in greater detail our support for the legislation. I would raise three points that we believe need further clarification.

First, section 205 in the energy efficiency standards, which have been the subject of some questions here this afternoon. We, as a group of State regulators, are of course concerned about any efforts at Federal pre-emption of State efforts which may go beyond what the Federal standards might be. We would prefer that any Federal standards be viewed as a floor, and that States be allowed to adopt more strict standards, if appropriate. We also would appreciate the opportunity to work with the committee to see—to assure that any existing State standards would be grandfathered if and when the DOE were to adopt its standards.

Second, the section 503(d)(4), dealing with the sales of energy from Federal facilities—I believe Senator Thomas asked about that—I would say that we share the concern that I perceived in his question, and we believe that, at a minimum, it should be clarified that any such sales would have to be made consistent with, and subject to, State and Federal laws and regulations.

Finally, section 603, having to do with integrated resource planning and rate design issues being added to the list of PURPA standards: again, as a representative of State organizations, I would clarify that these are matters purely of State jurisdiction and State law. We would prefer that they not be addressed at all. However, we do believe that the approach of including these standards in a PURPA-type State shall consider these issues in carrying our responsibilities is certainly the appropriate way to address these important issues.

So, thank you, again, for the opportunity. I'll look forward to answering any questions.

[The prepared statement of Mr. Kerr follows:]

PREPARED STATEMENT OF JAMES Y. KERR, II, COMMISSIONER, NORTH CAROLINA PUBLIC UTILITIES COMMISSION, AND PRESIDENT, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

Good Afternoon Mr. Chairman, Ranking Member Domenici, and Members of the Committee.

My name is Jim Kerr. I am a Commissioner on the North Carolina Utilities Commission and I also serve as the President of the National Association of Regulatory Utility Commissioners (NARUC). I am testifying today on behalf of NARUC and I greatly appreciate the opportunity to appear before you today. The issues that you are addressing here are very important to NARUC's membership and my State, and

I am grateful to have this opportunity to present our views on energy efficiency and, in particular, your legislation, Mr. Chairman.

I would like to summarize my testimony and have my full statement entered into the record.

NARUC is a quasi-governmental, non-profit organization founded in 1889. Its membership includes the State public utility commissions serving all States and territories. Our mission is to serve the public interest by improving the quality and effectiveness of public utility regulation. Our members regulate the retail rates and services of electric, gas, water, and telephone utilities. Indeed, we are obligated by law to ensure that the establishment and maintenance of such utility services as may be required by the public convenience and necessity, and that such services are provided under rates—subject to terms and conditions of service—that are just, reasonable, and nondiscriminatory.

I would like to discuss, in detail, efforts at the State level for implementing energy efficiency programs and, Mr. Chairman, the legislation you and Ranking Member Domenici introduced last week.

Since 1973, energy use in the United States has increased by 33%, but we now use half as much energy per dollar of economic activity as we did then. To run today's economy without the energy efficiency improvements that have taken place since 1973, we would need 43 percent more energy supplies than we currently use—more energy than we currently generate from any single supply source like nuclear, gas, coal, or renewables.<sup>1</sup>

Clearly, energy efficiency is already playing a considerable role in meeting our country's growing demand, but the potential for an even greater savings remains.

A 2000 study estimated that energy efficiency policies and programs could cost-effectively reduce U.S. demand for electricity by 24 percent and demand for natural gas by 12 percent by 2020.<sup>2</sup> This is about half of the current projected increase in electricity and natural gas demand. In short, energy efficiency has grown in acceptance from being considered “nice thing to do for society” to becoming more recognized as a real resource; some even call it “the fifth fuel.”

For the record, NARUC has consistently supported and encouraged State energy efficiency policies and it is our belief that energy efficiency programs can, in some instances, be the quickest, cheapest, and cleanest energy resource. If broadly adopted, energy efficiency programs can have many far-reaching societal benefits, including:

- *Economic*.—Reduced energy intensity provides competitive advantages and frees financial resources for investment in non-energy goods and services;
- *Environmental*.—Saving energy reduces air pollution, the degradation of natural resources, risks to public health, and the threat of global climate change;
- *Infrastructure*.—Lower demand lessens constraints and congestion on the electric transmission and distribution systems; and
- *Security*.—Energy efficiency can lessen our vulnerability to events that cut off energy supplies.

NARUC members have seen the benefits and are responding by exploring aggressive investments in energy efficiency as a resource. NARUC itself passed a resolution in 2005 encouraging States and other policymakers to review their existing rate designs to determine if they encourage energy conservation and energy efficiency so as to moderate natural gas demand and reduce upward pressure on natural gas prices.

Additionally, NARUC was heavily involved in the drafting of the Energy Department's recent report on State and Regional Policies that Promote Energy Efficiency Programs Carried Out by Electric and Gas Utilities. The report, mandated by Section 139 of the Energy Policy Act of 2005, offers a list of recommendations for States, industry groups, and other stakeholders to consider when implementing energy efficiency programs. The report also summarized State energy efficiency activities.

We have also been active in our efforts to promote Advanced Metering Infrastructure (AMI) throughout the country. AMI is a system that records customer consumption of electricity on an hourly or even more recurring basis and provides dynamic pricing that can afford consumers the opportunity to better manage their energy intake. The NARUC Board of Directors at our Winter Committee Meetings in

<sup>1</sup>Department of Energy, “State and Regional Policies that Promote Energy Efficiency Programs Carried Out by Electric and Gas Utilities.”

<sup>2</sup>Interlaboratory Working Group, “Scenarios for a Clean Energy Future,” Oak Ridge National Laboratory, Lawrence Berkeley National Laboratory.

February approved a resolution that offered recommendations for States that are facilitating cost-effective AMI technologies.

My home State of North Carolina is actively engaged in pursuing energy efficiency programs. For instance, my fellow commissioner Jimmy Ervin and I participated in the recent North Carolina Summit on Energy Efficiency. The Summit served as a venue for North Carolina policymakers and stakeholders to share information and best practices for implementing energy efficiency programs, and also discuss initiatives for raising awareness and developing a broad coalition of support for related initiatives.

Also, NARUC and many member States, along with federal regulators and a sizeable number of industry representatives, are participating in the National Action Plan for Energy Efficiency. This Action Plan is a multi-year, multi-sector effort aimed at creating a national commitment to energy efficiency. I will go into more details about the Action Plan later in my testimony.

Coinciding with the National Action Plan's activities is an effort by the North American Energy Standards Board to establish a multi-year process that aims to measure savings from energy efficiency programs. NAESEB held a meeting earlier this month on this issue and the National Action Plan will help facilitate this project.

Before I go into more detail about the National Action Plan, I would like to discuss the important legislation you, Mr. Chairman, and Ranking Member Domenici introduced last week. NARUC would like to commend you both for your leadership in moving energy efficiency policy to the forefront of the nation's energy policy debate by introducing the bipartisan legislation, S. 1115, and holding this hearing.

We believe that this bill is a generally positive step and there are many provisions in S. 1115 that NARUC can support. I will limit my comments today to address those provisions we believe are most pertinent to our member commissions.

#### TITLE II—EXPEDITING NEW ENERGY EFFICIENCY STANDARDS

NARUC is supportive of the proposals and policies included in Title II, to the extent that they are intended to permit State action and standards that go beyond those contemplated in this Title. Cost-effective and technically feasible energy efficiency standards are an important tool for achieving energy savings, improving environmental quality, and reducing energy bills and prices for consumers. NARUC has always supported meaningful energy efficiency standards at the national level and, during the debate over the Energy Policy Act of 2005, we urged Congress to enact cost-effective standards that would result in the greatest energy savings. Additionally, NARUC has supported the upgrading of National Efficiency Standards while encouraging and supporting State efforts on standards to maximize energy efficiency.

While NARUC believes that appliance standards are indeed a highly effective way to improve end-user efficiency, we have also supported improvements in system efficiency for delivering electricity through transmission and distribution networks. By ensuring that fewer losses occur in the transmission and distribution of electricity to appliances, we have the opportunity to ensure that electricity is delivered and used in the most efficient manner possible. In fact, NARUC this past February passed a resolution supporting new distribution transformer efficiency standards that are being developed in concert with the electric power industry and the energy efficiency advocacy community.

#### TITLE IV—SETTING ENERGY EFFICIENCY GOALS

NARUC is highly supportive of the provisions found in sections 402 and 403 of Title IV, as these goals coincide with NARUC's efforts as part of the above-referenced National Action Plan on Energy Efficiency. Again, I will go into more detail about this project later in my testimony.

#### TITLE V—PROMOTING FEDERAL LEADERSHIP IN ENERGY EFFICIENCY AND RENEWABLE ENERGY

While NARUC agrees that the federal government must "get its own house in order" to play a leading and productive role in this endeavor, we do have a question regarding language in section 503(d)(4)(C). Is it the intent of this language to permit federal government facilities, beyond the Power Marketing Administrations, to sell electricity in both wholesale and retail markets, without regard to federal and State regulations? If so, we would be rather troubled by this provision and we would suggest that the language be clarified by noting that the government sales would be subject to all applicable State and federal law and regulation.

## TITLE VI—ASSISTING STATE AND LOCAL GOVERNMENTS IN ENERGY EFFICIENCY

NARUC strongly supports the provisions found in sections 601 and 602, and has indeed benefited, as have many of our members, from the programs included in these sections.

The U.S. Department of Energy's Weatherization Assistance Program has served more than 5.7 million low-income families and is one of the most effective energy efficiency programs in the United States. Low-income families spend 16 percent of their annual income on energy, compared with 5 percent for other households, and the typical Weatherization recipient is a single mother with two children earning \$8,000 per year. According to DOE, families who have their homes weatherized will generally save between \$300 and \$400 each year on energy bills allowing them a better opportunity to pay their future energy bills. Families who do not receive Weatherization services must make hard choices between heating and cooling their homes and other necessities, such as food, clothing and medicine.

Additionally, NARUC has benefited from direct support from the State Energy Programs. In 2004, for example, we received funding and technical assistance from the DOE to develop Model Interconnection Standards & Procedures. These standards provide a clear and consistent process for interconnecting new generating units to the transmission grid. Moreover, NARUC members have benefited from interaction with State Energy Offices and Air Quality Agencies through projects undertaken between 2000 and 2003 that linked these key State government sectors on energy and air quality issues.

NARUC is generally supportive of section 603 and technical assistance provided in section 604, though we note that the decoupling issue is retail by nature and is clearly under State jurisdiction. We recognize that the best approach toward promoting energy efficiency programs for any utility, State, or region may likely depend on local issues, preferences, and conditions. By placing decoupling language under the Public Utility Regulatory Policies Act of 1978, a State may move forward if it is in their best interest and the technical assistance will help where many commissions are currently overburdened with implementation of the Energy Policy Act of 2005.

NARUC has begun exploring rate designs that align utility returns with the delivery of energy efficiency. In August 2006 NARUC began an ongoing dialogue with State agencies regarding design types and lessons learned from different approaches. NARUC is developing additional research on aligning rate designs with demand-side resources, and this summer will release a brief for Consumer Advocates on Decoupling, and participate in developing the National Action Plan Leadership Group's guidebook on the topic.

I would now like to take this opportunity to discuss the National Action Plan for Energy Efficiency in some detail. As stated above, the National Action Plan aims to create a sustainable, aggressive national commitment to energy efficiency from all sectors, including gas and electric utilities, State and federal utility regulators, and partner organizations. We believe that this commitment could save Americans billions of dollars on energy bills over the next 10 to 15 years, contribute to energy security, and improve our environment.

The Action Plan was developed by more than 50 leading organizations representing a very diverse set of perspectives. It is a multi-year collaborative and includes participation from the Department of Energy, the Environmental Protection Agency, State regulators, industry, and consumer groups. NARUC is one of two founding partners and our First Vice President, Commissioner Marsha Smith of Idaho, is the State Co-Chair of the Action Plan Leadership Group. Jim Rogers of Duke Energy is the Industry Co-Chair. These organizations have pledged to take specific steps to make the Action Plan a reality.

The Action Plan itself was released in July 2006 during the annual NARUC Summer Meetings. This document made five recommendations to energy policymakers:

1. Recognize energy efficiency as high-priority resource;
2. Make strong, long-term commitments to implement cost-effective energy efficiency as a resource;
3. Broadly communicate benefits of, and opportunities for, energy efficiency;
4. Promote sufficient, timely, stable program funding where cost-effective; and,
5. Review, adopt policies to align utility incentives with delivery of energy efficiency, and modify rate practices to promote energy efficiency investments.

NARUC members have made commitments to implementing the Action Plan's recommendations. For example, the State of Arkansas issued "Resource Planning Guidelines" and ordered their jurisdictional utilities to begin implementing cost-ef-

fective energy efficiency programs. California, meanwhile, issued a Memorandum of Understanding demonstrating the State's commitment to develop, promote, and implement the Action Plan's recommendations. Nearly all of the State's energy stakeholders signed the MOU, including the Governor, the State's PUC, the California Energy Commission, and most of the State's investor-owned and publicly-owned utilities. Also, Iowa's Utilities Board specifically endorsed the Action Plan's recommendations as well, as did State regulators in Connecticut, Florida, Hawaii, Kansas, Minnesota, New England, New Jersey, New York, Ohio, Oregon, Utah, Vermont, Washington, and the Southeast.

This year, the National Action Plan Leadership Group is taking a grass-roots approach, working with regulators across the country to implement the recommendations. Currently, the Leadership Group is working on a number of projects, including communications plans, promotional strategies, regulatory solutions to reduce impediments, and ways to encourage utility participation. Also, the participants are developing guidances on how energy efficiency opportunities can be captured through energy resource planning and procurement processes, changes in building codes, as well as in rates, utility incentives, planning, and cost-benefit studies. In addition, the participants are also developing Evaluation Guides to account for energy and cost savings from energy efficiency.

For the next year and beyond, the National Action Plan participants will study methods to align utility incentives with the best levels of cost-effective energy efficiency programs and will develop a set of metrics that can demonstrate the actual success of their commitments to energy efficiency.

As you can see, Mr. Chairman and Ranking Member Domenici, State regulators are already embracing energy efficiency as a critical resource to meet growing demand. But we have only started to tap into the great potential energy efficiency holds and this hearing and legislation are both very timely and appropriate. We very much appreciate your attention and thank you for the opportunity to share our views on S. 1115. The NARUC membership is committed to working with you and this Committee as this legislation moves forward.

#### ATTACHMENTS

##### RESOLUTION TO REMOVE REGULATORY BARRIERS TO THE BROAD IMPLEMENTATION OF ADVANCED METERING INFRASTRUCTURE

WHEREAS, The Energy Policy Act of 2005 amended the State ratemaking provisions of the Public Utilities Regulatory Policies Act of 1978 (PURPA) to require every State regulatory commission to consider and determine whether to adopt a new standard with regard to advanced metering infrastructure (AMI); and

WHEREAS, Advanced metering, as defined by Federal Energy Regulatory Commission (FERC), refers to a metering system that records customer consumption hourly or more frequently and that provides daily or more frequent transmittal of measurements over a communication network to a central collection point; and

WHEREAS, The implementation of dynamic pricing, which is facilitated by AMI, can afford consumers the opportunity to better manage their energy consumption and electricity costs through the practice of demand response strategies; and

WHEREAS, Effective price-responsive demand requires not only deployment of AMI to a material portion of a utility's load, but also implementation of dynamic price structures that reveal to consumers the value of controlling their consumption at specific times; and

WHEREAS, AMI deployment offers numerous potential benefits to consumers, both participants and non-participants, including:

- greater customer control over consumption and electric bills;
- improved metering accuracy and customer service;
- potential for reduced prices during peak periods for all consumers;
- reduced price volatility;
- reduced outage duration; and,
- expedited service initiation and restoration; and

WHEREAS, The use of AMI may afford significant utility operational cost savings and other benefits, including:

- automation of meter reading;
- outage detection;
- remote connection/disconnection;
- reduced energy theft;
- improved outage restoration;

- improved load research;
- more optimal transformer sizing;
- reduced demand during times of system stress;
- decreased T&D system congestion; and,
- reduced reliance on inefficient peaking generators; and

WHEREAS, Sound AMI planning and deployment requires the identification and consideration of tangible and intangible costs and benefits to a utility system and its customers; and

WHEREAS, Cost-effective AMI may be a critical component of the intelligent grid of the future that will provide many benefits to utilities and consumers; and

WHEREAS, It is important that AMI allow the free and unimpeded flow and exchange of data and communications to empower the greatest range of technology and customer options to be deployed; and

WHEREAS, The deployment of cost-effective AMI technology may require the removal and disposition of existing meters that are not fully depreciated and may require replacement of, or significant modification to, existing meter reading, communications, and customer billing and information infrastructure; and

WHEREAS, Regulated utilities may be discouraged from pursuing demand response opportunities by the prospect of diminished sales and revenues; now, therefore, be it

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its February 2007 Winter Meetings in Washington, D.C., recommends that commissions seeking to facilitate deployment of cost-effective AMI technologies consider the following regulatory options:

- pursue an AMI business case analysis, in conjunction with each regulated utility, in order to identify an optimal, cost-effective strategy for deployment of AMI that takes into account both tangible and intangible benefits;
- adopt ratemaking policies that provide utilities with appropriate incentives for reliance upon demand-side resources;
- provide for timely cost recovery of prudently incurred AMI expenditures, including accelerated recovery of investment in existing metering infrastructure, in order to provide cash flow to help finance new AMI deployment; and,
- provide depreciation lives for AMI that take into account the speed and nature of change in metering technology; and be it further

RESOLVED, That the Federal tax code with regard to depreciable lives for AMI investments should be amended to reflect the speed and nature of change in metering technology; and be it further

RESOLVED, That NARUC supports movement toward an appropriate level of open architecture and interoperability of AMI to enable cost-effective investments, avoid obsolescence, and increase innovations in technology products.

#### RESOLUTION ON DISTRIBUTION TRANSFORMERS ENERGY CONSERVATION STANDARDS

WHEREAS, The investor-owned and public power utilities represented by the Edison Electric Institute (EEI) and the American Public Power Association (APPA), and the energy efficiency advocacy community, represented by Natural Resources Defense Council, the American Council for an Energy-Efficient Economy, the Alliance to Save Energy, Northeast Energy Efficiency Partnerships and the Appliance Standards Awareness Project have agreed to jointly recommend new national standards for distribution transformers; and

WHEREAS, Cost-effective and technically feasible energy efficiency standards are an important tool for achieving energy savings, improving environmental quality, and reducing energy bills and prices for consumers; and

WHEREAS, The recommended joint standards will ensure the highest technologically achievable energy savings that are economically justified; now, therefore, be it

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its February 2007 Winter Meetings in Washington, D.C., endorses the tiered approach to the efficiency standards agreed to by the Edison Electric Institute (EEI) and the American Public Power Association (APPA), and the energy efficiency advocacy community, represented by Natural Resources Defense Council, the American Council for an Energy-Efficient Economy, the Alliance to Save Energy, Northeast Energy Efficiency Partnerships and the Appliance Standards Awareness Project.

## RESOLUTION ON ENERGY EFFICIENCY AND INNOVATIVE RATE DESIGN

WHEREAS, The National Association of Regulatory Utility Commissioners (NARUC), at its July 2003 Summer Meetings, adopted a Resolution on State Commission Responses to the Natural Gas Supply Situation that encouraged State and Federal regulatory commissions to review the incentives for existing gas and electric utility programs designed to promote and aggressively implement cost-effective conservation, energy efficiency, weatherization, and demand response; and

WHEREAS, The NARUC at its November 2003 annual convention, adopted a Resolution Adopting Natural Gas Information "Toolkit," which encouraged the NARUC Natural Gas Task Force to review the findings and recommendations of the September 23, 2003 report by the National Petroleum Council on Balancing Natural Gas Policy—Fueling the Demands of a Growing Economy and its recommendations for improving and promoting energy efficiency and conservation initiatives; and

WHEREAS, The NARUC at its 2004 Summer Meetings, adopted a Resolution on Gas and Electric Energy Efficiency encouraging State commissions and other policy makers to support expansion of energy efficiency programs, including consumer education, weatherization, and energy efficiency and to address regulatory incentives to inefficient use of gas and electricity; and

WHEREAS, These NARUC initiatives were prompted by the substantial increases in the price of natural gas in wholesale markets during the 2000-2003 period when compared to the more moderate prices that prevailed throughout the 1990s; and

WHEREAS, The wholesale natural gas prices of the last five years largely reflect the fact that the demand by consumers for natural gas has been growing steadily while, for a variety of reasons, the supply of natural gas has had difficulty keeping pace, leading to a situation where natural gas demand and supply are narrowly in balance and where even modest increases in demand produce sharp increases in price; and

WHEREAS, Hurricanes Katrina and Rita, in addition to damaging the States of Alabama, Mississippi, Louisiana, and Texas, significantly damaged the nation's on-shore and offshore energy infrastructure, resulting in significant interruption in the production and delivery of both oil and natural gas in the Gulf Coast area; and

WHEREAS, The confluence of a tight balance of natural gas supply and demand and these natural disasters has driven natural gas prices in wholesale markets to unprecedented levels; and

WHEREAS, The present high and unprecedented level of natural gas prices are imposing significant burdens on the nation's natural gas consumers, whether residential, commercial, or industrial, and will likely be injurious to the nation's economy as a whole; and

WHEREAS, The recently enacted Energy Policy Act of 2005 contains a number of provisions aimed at encouraging further natural gas production in order to bring down prices for consumers, but these actions, together with any further action on energy issues by Congress, are unlikely to bring forth additional supplies of natural gas in the short term; and

WHEREAS, Energy conservation and energy efficiency are, in the short term, the actions most likely to reduce upward pressure on natural gas prices and to assist in bringing energy prices down, to the benefit of all natural gas consumers; and

WHEREAS, Innovative rate designs including "energy efficient tariffs" and "decoupling tariffs" (such as those employed by Northwest Natural Gas in Oregon, Baltimore Gas & Electric and Washington Gas in Maryland, Southwest Gas in California, and Piedmont Natural Gas in North Carolina), "fixed-variable" rates (such as that employed by Northern States Power in North Dakota, and Atlanta Gas Light in Georgia), other options (such as that approved in Oklahoma for Oklahoma Natural Gas), and other innovative proposals and programs may assist, especially in the short term, in promoting energy efficiency and energy conservation and slowing the rate of demand growth of natural gas; and

WHEREAS, Current forms of rate design may tend to create a misalignment between the interests of natural gas utilities and their customers; now therefore be it

RESOLVED, That the National Association of Regulatory Utility Commissioners (NARUC), convened in its November 2005 Annual Convention in Indian Wells, California, encourages State commissions and other policy makers to review the rate designs they have previously approved to determine whether they should be reconsidered in order to implement innovative rate designs that will encourage energy conservation and energy efficiency that will assist in moderating natural gas demand and reducing upward pressure on natural gas prices; and be it further

RESOLVED, That NARUC recognizes that the best approach toward promoting energy efficiency programs for any utility, State, or region may likely depend on local issues, preferences, and conditions.

The CHAIRMAN. Thank you very much.  
Ms. Collier, please go right ahead.

**STATEMENT OF ALICIA COLLIER, DIRECTOR, GLOBAL ENERGY POLICY, HONEYWELL BUILDING SOLUTIONS, HONEYWELL INTERNATIONAL, ON BEHALF OF FEDERAL PERFORMANCE CONTRACTING COALITION (FPCC)**

Ms. COLLIER. Good afternoon, and thank you, Mr. Chairman and the committee, for this opportunity to testify today.

My name is Alicia Collier, and I am the director of global energy policy for Honeywell's Energy Services Group. But I'm here on behalf of the Federal Performance Contracting Coalition, and we're a group of energy services companies. We're responsible for over 90 percent of the energy savings performance contracts that are being performed on Federal installations today.

I'd like to mention each of our members. They include: Ameresco, Chevron Energy Solutions, Constellation Energy Projects and Services Group, Honeywell, Johnson Controls, Noresco, and Siemens Building Technologies.

Now, the FPCC is extremely supportive of S. 1115 and the Federal energy efficiency provisions contained. We're especially encouraged by the energy savings performance contracting provisions that will help to advance more of these sorts of projects within Federal installations, and, as a result, will reduce the energy used on these installations and increase the amount of renewables that are being used on Federal sites.

I'd like to focus the comments today on section 503, which specifically addresses Energy Savings Performance Contracts. I'll highlight three of the provisions contained within that section.

The first one has to do with financing flexibility. What this section allows agencies to do is to combine appropriated dollars with the financing dollars under ESPCs. What this is going to do is to add flexibility to these contracts, and it will make it possible for agencies to meet the more aggressive energy goals that have been put before them. Specifically, it will allow for the inclusion of renewables, which is important to all of us.

Second, we strongly support the idea of eliminating the sunset provision for ESPCs. This was originally set up as a pilot project, but, for over 10 years, it's been successfully utilized by Federal agencies, and it's become, really, the primary way that Federal Government agencies are meeting their energy efficiency goals. So, it's time to make it a permanent program.

Third, is a conversation that I'm sure we're going to have, and we've already had some discussion about, and that is making cogeneration and renewable energy allowable under the ESPC program. Now, there's an added ability that will allow agencies to sell excess power under this situation. What it does is, it gives the flexibility for an agency or an installation to build renewables on their site and not be concerned about fluctuations in consumption, in the ability to sell off that excess power. So, that's the way we perceive that particular section in that particular provision.

In addition to supporting the provisions in S. 1115, the FPCC has some ideas of areas where we can see more, better, and faster ESPCs. We've been working with the Department of Energy in this area, and I'm very pleased with the support that they've provided, and their interest in increasing the pace, the size, and the scope of these contracts.

We've got three specific suggestions for your consideration:

The first is eliminating the congressional notification requirement for individual projects under ESPC. What we would suggest in lieu of that would be to require agencies to report, on an annual basis, the number of ESPC projects, their size, their scope, and their value.

Second, we would suggest establishing a program fund that would help to pay specifically for renewables under ESPCs. This, again, would result in more renewables on Federal facilities.

The third item would have to do with renewable energy credits. The EAct encourages the agencies to not only build, but also use, renewables on their installations, and we think that there's some legislative language that could help clarify the sale of RECs and how that impacts the agency's ability to take renewable energy credits toward their goal.

In conclusion, the FPCC is very pleased with the emphasis on Federal energy efficiency contained within S. 1115. We believe that the next step is to ensure that agencies start to use this contract vehicle as a matter of course. What we like to say in the FPCC is that we want the fear of inaction to be greater than the fear of action.

We hope to have the continued support of this committee to urge oversight for the necessary committees to ensure the energy efficiency and the implementation of renewables becomes and remains a front-burner issue for the entire Federal Government.

Thank you, again, for this opportunity.

[The prepared statement of Ms. Collier follows:]

PREPARED STATEMENT OF ALICIA COLLIER, DIRECTOR, GLOBAL ENERGY POLICY, HONEYWELL BUILDING SOLUTIONS, HONEYWELL CORPORATION, AND ON BEHALF OF FEDERAL PERFORMANCE CONTRACTING COALITION

Thank you for the opportunity to testify today. My name is Alicia Collier and I am the Director of Global Energy Policy, National Energy Solutions for Honeywell. I appear before you today on behalf of the Federal Performance Contracting Coalition (FPCC), a group of Energy Service Companies that perform 90% of the Energy Savings Performance Contracting (ESPC) for the Federal government. Our members are Ameresco, Chevron Energy Solutions, Constellation Energy Projects and Services Group, Honeywell, Johnson Controls, Noresco and Siemens Building Technologies.

We are very pleased with the Federal energy provisions of S. 1115 and are encouraged to see the Committee's continued commitment to increasing the energy efficiency of our government's own facilities. We are particularly pleased with the Committee's interest in advancing Energy Savings Performance Contracts. We believe that this underutilized program is critical to meeting the Federal government's energy efficiency and renewable energy goals. Many of the provisions in S. 1115 will help generate more ESPC projects and increase energy efficiency in federal buildings.

Most of the Committee members are likely aware of ESPCs because of the major effort in EACT 2005 to reauthorize the program. The program works as follows: under ESPCs, the private sector installs new energy efficient equipment in federal facilities at no upfront cost to the government. (Examples of equipment include: new energy efficient lighting, building controls, boilers, chillers and renewable energy measures.)

Federal agencies pay off this investment over time with the funds saved on utility costs. And, the private sector contractors guarantee the energy savings. By law, the government never pays more than they would have paid for utilities if it had not entered into the ESPC. In addition to generating energy, water and dollar savings, years of deferred maintenance at federal facilities are successfully addressed by the ESPC program.

We are very supportive of the Federal energy efficiency provisions in S. 1115. In particular, we are encouraged by the following:

- Section 504, which increases energy efficiency goals by requiring a 30 percent reduction in energy consumption at Federal facilities by 2015, codifying the new executive order 13423. Federal agencies will have to increasingly rely on ESPCs if they are expected to meet these new higher goals.
- Section 502, which increases the requirement for the purchase of renewable energy for federal facilities. We encourage you to clarify that the installation of on-site generation of renewable energy should be the path forward, not merely the purchase of green power off the grid. On site power contributes to energy security and adds new renewable energy assets to the national mix.
- Section 503 addresses ESPCs and is therefore of great interest to us.
  - We support the retention of savings provisions that allow facilities to retain 100% of the savings on energy efficiency installation. Your elimination of old language from the code will eliminate the confusion in the federal government over the retention of savings.
  - Financing Flexibility, which would allow agencies to mix appropriated and finance dollars under an ESPC, is critical to meeting the new efficiency and renewable energy goals. We support its inclusion because only with the ability to mix appropriated and private sector dollars will we be able to achieve the government's renewable energy goals. We continue to be concerned about agency adoption of this provision and encourage the Committee to reach out to other authorizing committees to ensure adoption of financing flexibility throughout all agencies of the Federal government.
  - Eliminating the sunset provision is key. Thank you. This program was initially set up as a pilot program. It has been used very successfully by many of federal agencies for over 10 years. It has proven its value and should become a permanent program because ESPC has become the means by which most agencies are able to attain their efficiency goals.
  - The addition of cogeneration and renewable energy as allowable Energy Conservation Measures under ESPCs will be a great benefit to the government. The ability to sell the power generated is a significant new component that will allow for more renewable energy generation on federal facilities, thereby enhancing energy security, reducing energy use and greenhouse gas emissions.
  - Clarification that water savings are included as allowable energy conservation measures is also appreciated as this has been a point of confusion among some energy managers.
  - We support the idea of ESPCs for non-building applications and feel that the study and the ability to include secondary savings is a good first step in identifying the potential to reduce energy in mobile applications through ESPCs. Secondary savings, such as worker productivity, could also be included in traditional, buildings ESPCs and would further encourage agencies to utilize the program by showing greater benefit.
- Sec. 505 on Combined Heat and Power is helpful. CHP is an energy conservation measure with a long term payback and because of that, it lends itself well to being bundled with shorter payback conservation measures to create a viable ESPC.
- Sec. 506 sets Federal Building Energy Efficiency Performance Standards, which we support because they push all building renovations to a higher energy efficiency level. Unless there are significant new appropriated dollars made available, we believe that ESPCs and other private financing will be the major means through which agencies comply with this section.

In addition to supporting these provisions of S. 1115, the FPCC feels that there are other areas where we can focus on "more, better and faster" when it comes to Energy Savings Performance Contracting. We have been working with the Department of Energy in this area and are very pleased with their willingness to focus agencies on increasing the pace, size and scope of these types of contracts.

Below are some thoughts from the Federal Performance Contracting Coalition on potentially expanding S. 1115:

- We advocate eliminating the Congressional Notification requirement for individual projects. This requirement was originally included in legislation because the program was a pilot project. Instead, we would like to see annual reporting to Congress on the number, size, energy conservation measures, and financial value on all ESPC contracts. Most of this information is already gathered by the Department of Energy's Federal Energy Management Program and would therefore not require new reporting mandates for Federal agencies.
- We suggest language establishing a program fund to help offset the high cost of renewable energy measures in alternatively financed projects. Renewable Energy measures must be bundled with traditional energy efficiency measures to qualify under this proposed program. The effect would be to leverage appropriated dollars for on-site renewable energy projects, which could substantially increase the number of projects. This program administered by the Department of Energy's Office of Energy Efficiency and Renewable Energy. We would be happy to provide further information on how such a fund could be initiated and administered.
- EPACT set up the ability for Federal agencies to count double their on-site renewable energy production towards their renewable energy acquisition goals. In an effort to make renewables cost effective, many Federal agencies that install renewables on-site need to sell their commercial renewable energy credits (RECs) to help pay for the project. There is some confusion about whether selling those RECs means giving up credit towards the Federal renewable energy goal. Legislative language could clarify this ability.

In conclusion, we are very pleased with the emphasis on Federal energy efficiency and the positive focus on ESPCs and other privately financed energy retrofit activities. Congress and the Administration have been working along side our industry to knock down barriers to doing "more, better, and faster" ESPCs. We believe that the next step is to ensure that the agency personnel start to adopt ESPCs as a matter of course. As the members of the FPCC like to say, we want to make the "fear of inaction greater than the fear of action". It is our hope that the Members of this Committee will continue to play a leadership role in urging oversight from all relevant committees to ensure that energy efficiency and the implementation of renewable energy becomes and remains a front burner issue for all of the Federal government.

Again, thank you for your continued support and the opportunity to testify today.

The CHAIRMAN. Thank you very much.

Mr. Schjerven, go right ahead.

**STATEMENT OF ROBERT E. SCHJERVEN, CHIEF EXECUTIVE OFFICER EMERITUS, LENNOX INTERNATIONAL, INC., ON BEHALF OF THE GAS APPLIANCE MANUFACTURERS ASSOCIATION (GAMA), ARLINGTON, VIRGINIA**

Mr. SCHJERVEN. Thank you, Mr. Chairman.

Mr. Chairman, members of the committee, my name is Bob Schjerven. I'm the chief executive officer emeritus of Lennox International, Incorporated. I have over 40 years of experience in the heating, ventilation, air-conditioning, and refrigeration industry. I'm speaking today on behalf of the Gas Appliance Manufacturers Association, or GAMA.

GAMA is the national trade association for manufacturers of residential and commercial furnaces, boilers, water heaters, other gas and electric appliances, and oil-fired, as well.

GAMA's members employ more than 190,000 workers across the United States, and our members' facilities are found in 43 of the 50 States. Speaking for Lennox, alone, we have major manufacturing facilities in several States, including Arkansas, South Carolina, and Tennessee.

GAMA has been a strong supporter of energy efficient products, and also an advocate for educating the public on the importance of energy conservation and energy-saving appliances. GAMA has

worked with State and national organizations to develop and maintain Federal standards and a national certification and enforcement process for residential furnaces, boilers, water heaters, and space heaters.

As a result of that broadbased support for national standards, our country has been able to conserve a significant amount of energy. Now, S. 1115 would amend the law to authorize the DOE to prescribe design requirements, consider new performance measurements, and open the door to regional standards, breaking the successful and productive agreement by environmentalists, the industry, and the States.

Abandoning a single national uniform energy standard in favor of up to three regional standards is not a move with which our industry can agree. While the majority of my comments today will focus on section 202, GAMA has serious concerns with sections 201, 203, and 205, and I'll talk about these just briefly at the end of my comments.

Today, enforcement of the national energy standards is directed at the manufacturing level. Through DOE-approved certification programs, we find that the standards are straightforward in order to enforce and to maintain. A product that's offered for sale in our country that does not meet the Federal standard is unlawful on its face, period. GAMA's certification programs assist the DOE by verifying products meet applicable Federal standards. If uniform national standards are replaced by regional standards, then standards enforcement would have to shift to the retail level of the distribution chain. It's difficult to imagine that the DOE would have the resources to enforce standards at this level, and GAMA certification programs would then be of little assistance to the DOE in enforcing regional standards, since neither GAMA nor the manufacturers would have control over where the products are installed.

Faced with the potential for multiple regional standards, the challenges of certification and enforcement, we feel, would be enormous. Most of our products are sold to distributors, who, in turn, sell to contractors, who, in turn, sell to consumers.

Once our products leave our warehouses, they are no longer within our exclusive control. A regional or local enforcement infrastructure would have to be created. What level of consistency could we expect if the enforcement effort were then forced to be mandated down to State building departments which receive no additional compensation or manpower for such an undertaking?

The economic impact of regional standards to both the industry and to consumers, we feel, should be seriously considered. Regional standards will greatly increase the complexity of ongoing inventory control and distribution procedures for manufacturers and wholesalers, and, as stated previously, with no guarantee that a product certified for one region would not find its way being installed in another region.

Unable to absorb these increased costs, manufacturers and wholesalers will be forced to increase the price of their products, ultimately hurting U.S. consumers and reducing the energy-savings opportunity.

To that point, in the face of increased costs for new higher-efficiency equipment, it's becoming clear that many consumers will

choose to simply repair older, much-less-efficient appliances, rather than buy the new, more-costly, more efficient appliances. We can see evidence of this trend already under the new 13 SEER national standard for residential air-conditioning systems. The cooling segment of our industry has seen a significant decrease in the demand for new 13 SEER residential air-conditioning system coincide with exactly with, at exactly the same time, an increase in the demand for parts to repair the older, less-efficient systems that have been installed for a number of years. As a result, older equipment that uses more energy stays in use longer, rather than being replaced by newer, higher-efficiency equipment.

Although, admittedly, it's still early in our tracking of this trend, what's happening on the cooling side of our business, we feel, will certainly occur for the heating side of our industry, as well.

Now, GAMA has some additional concerns with S. 1115. section 201 authorizes the DOE to prescribe design requirements in addition to performance standards for the full range of NAECA-covered products. Section 203 directs the DOE to prescribe furnace fan efficiency standards. While we're confident that our engineering teams can certainly meet new efficiency performance standards, prescriptive requirements on design, or on specific components, we feel, would effectively limit their ingenuity and innovation in doing so, and at a time when meaningful technological innovation, we think, is a critical global competitive advantage.

These proposed standards would also come at an added cost to industry and to consumers. We feel strongly that any additional authority that would be granted to the Department of Energy to prescribe product design requirements should be limited to the DOE's adoption of consensus standards such as the new boiler requirements that are contained in the bill.

Finally, section 205 allows Federal pre-emption to lapse where the DOE has concluded that a national standard for subclass of a federally covered product is not justified or cannot be rationally determined. We feel this provision would unduly limit the DOE's discretion and undermine the entire Federal standard system. We strongly believe that the DOE should have exclusive authority to regulate products which are covered by Federal law.

In conclusion, GAMA strongly supports the current system of uniform national standards administered by the DOE, and we urge Congress not to upset the delicate, balanced, and universally beneficial agreement, that was embodied in NAECA, by opening the door to regional standards.

Mr. Chairman, thank you very much for the opportunity to present an executive summary of our views, and our full testimony, of course, is being read into the record.

Thank you, sir.

[The prepared statement of Mr. Schjerven follows:]

PREPARED STATEMENT OF ROBERT E. SCHJERVEN, CHIEF EXECUTIVE OFFICER EMERITUS, LENNOX INTERNATIONAL INC., ON BEHALF OF THE GAS APPLIANCE MANUFACTURERS ASSOCIATION, ARLINGTON, VIRGINIA

Mr. Chairman, Members of the Committee, I'm Robert Schjerven, chief executive officer emeritus of Lennox International Inc. Through its subsidiaries, Lennox International is a leading provider of climate control solutions for the heating, air conditioning, and refrigeration markets around the world. I have over 40 years of experi-

ence in the heating, ventilation, air conditioning and refrigeration industry. My company and my industry have asked me to discuss with you the “Energy Efficiency Promotion Act of 2007,” S. 1115.

I am speaking on behalf of the heating appliance industry represented by the Gas Appliance Manufacturers Association, or GAMA. GAMA is the national trade association for manufacturers of residential and commercial furnaces, boilers and water heaters, and other gas, oil-fired and electric appliances. I had the pleasure of serving as the chairman of GAMA from 2000 to 2001. GAMA’s members employ more than 190,000 workers across the U.S., and our members’ facilities are found in 43 of the 50 states. Speaking for Lennox alone, we have major manufacturing facilities in several states including Arkansas, South Carolina, and Tennessee.

I’m confident you won’t find an industry more supportive of energy efficiency than the U.S. heating appliance industry. GAMA, our industry’s collective voice, has been a strong supporter of energy-efficient products and an advocate for educating the public on the importance of energy conservation and energy-saving appliances. GAMA was one of the principal proponents of the National Appliance Energy Act of 1987 (NAECA). Over the following years to the present, GAMA has worked with state and national organizations to develop and maintain federal standards and a national certification and enforcement process for residential furnaces, boilers, water heaters and space heaters. As a result of that broad-based support for national standards, our country has been able to conserve a significant amount of energy. Now, S. 1115 would amend the law to authorize the DOE to prescribe design requirements, consider new performance measures, and open the door to regional standards—breaking a successful and productive agreement by environmentalists, the industry, and the states.

It is our understanding S. 1115 was intended as a legislative package composed of consensus agreements on energy efficiency standards to demonstrate the concern for energy conservation we all support, and the progress that can be made when we all work together to arrive at an agreement that serves all our interests. I must emphasize in the strongest possible terms: S. 1115 is not a consensus agreement. Of particular concern is Section 202, allowing for regional energy efficiency standards. Abandoning a single national, uniform energy efficiency standard in favor of up to three regional standards is not a move with which our industry can agree. While the majority of my comments today will focus on Section 202, GAMA has also expressed serious concerns with Sections 201, 203 and 205, which I will address briefly near the end of my comments.

Today, enforcement of the national standards is directed at the manufacturing level and, through DOE approved certification programs, standards are fairly simple to enforce. A product offered for sale in our country that does not meet the federal standard is unlawful on its face. GAMA’s certification programs assist the DOE by verifying products meet applicable federal standards. If uniform national standards were replaced by regional standards, standards enforcement would have to shift to the retail level. It is difficult to imagine the DOE would have the resources to enforce standards at this level, and GAMA’s certification programs would be of little assistance to the DOE in enforcing regional standards, since neither GAMA nor manufacturers have control over where products are installed.

Faced with the potential for multiple regional standards, the challenges of certification and enforcement would be enormous. Most of our products are sold to distributors, who in turn sell to contractors, who in turn sell to consumers. Once our products leave our warehouses, they are no longer in our exclusive control—without any way for the manufacturer to guarantee a furnace certified for one region will not somehow find its way to another. A regional or local enforcement infrastructure would have to be created. Who would be the enforcers of multiple standards? How would those enforcers be established and maintained, and at what cost? What level of consistency could be expected if the enforcement effort were mandated down to State building departments, which receive no added compensation or manpower for such an undertaking?

The economic impact to both the industry and consumers should also be seriously considered. Multiple standards will greatly increase the complexity of ongoing inventory control and distribution procedures for manufacturers and wholesalers—and, as stated previously, with no guarantee that a product certified for one region will not find its way to another. Unable to absorb these increased costs, manufacturers and wholesalers will be forced to increase the price of their products, ultimately hurting U.S. consumers and reducing the energy savings opportunity.

In the face of increased costs for new higher-efficiency equipment, it is becoming clear many consumers will choose to simply repair older, less efficient appliances rather than buy new, more efficient ones. We can see evidence of this trend under the new 13 SEER national standard for residential air conditioning systems. As pre-

mium, higher efficiency products, 13 SEER systems mean a higher initial cost to the consumer. Despite heavy industry efforts to promote the long-term energy savings of installing a higher efficiency system, the cooling segment of our industry has seen a significant decrease in the demand for new 13 SEER residential air conditioning systems, coinciding with an increase in the demand for parts to repair older systems. As a result, older equipment that uses more energy stays in use longer, rather than being replaced by newer, higher-efficiency equipment. Although it is still early in our tracking of this trend, what is happening on the cooling side of our business will occur to the heating side of our industry as well.

GAMA has additional concerns with S. 1115. Section 201 authorizes the DOE to prescribe design requirements, in addition to performance standards, for the full range of NAECA-covered products. Section 203 directs the DOE to prescribe furnace fan efficiency standards. While we are confident our engineering teams can meet new efficiency performance standards, prescriptive requirements on design or on specific components would effectively limit their ingenuity and innovation in doing so—and at a time when meaningful technological innovation is a critical global competitive advantage. These proposed standards would also come at added cost to the industry and to consumers. We feel strongly that any additional authority granted to the DOE to prescribe product design requirements should be limited to DOE adoption of consensus standards, such as the new boiler requirements contained in the bill.

Finally, Section 205 allows federal preemption to lapse where DOE has concluded that a national standard for a sub-class of a federally covered product is not justified or cannot be rationally determined. I have already addressed our concerns over allowing regional efficiency standards, and we have many similar concerns regarding Section 205. This provision would unduly limit the DOE's discretion and undermine the entire federal standards system. We strongly believe the DOE should have exclusive authority to regulate products covered by federal law.

I state with a great deal of pride our industry's commitment to energy efficiency, and to a single certifiable and enforceable national energy efficiency standard, is second to none. Our industry works hard to produce products to suit every installation situation and consumer's desires for the lowest possible operating costs. Moreover, we feel it is of the highest importance to make energy efficiency more easily understandable and attractive to the public. We strongly support the current system of uniform national standards administered by DOE, and urge Congress not to upset the delicately balanced and universally beneficial agreement embodied in NAECA by opening the door to regional standards.

Mr. Chairman, thank you for the opportunity to present the views of our industry on energy efficiency, specifically S. 1115. I'm pleased to answer any questions you or the Members might have, and of course the expertise of our industry through GAMA is at your service to help you arrive at the appropriate decisions in this important matter. Thank you.

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

**STATEMENT OF WILLIAM PRINDLE, ACTING EXECUTIVE DIRECTOR, AMERICAN COUNCIL FOR AN ENERGY EFFICIENT ECONOMY (ACEEE)**

Mr. PRINDLE. Good afternoon, Mr. Chairman, members of the committee. Thank you for inviting me here today.

My name is Bill Prindle, acting executive director of the American Council for an Energy Efficient Economy, more usually pronounced "A-C-Triple E." We're a national nonprofit organization that focuses specifically on energy efficiency as a national energy policy priority.

I also, parenthetically, want to thank Lennox for developing the Lennox pulse furnace in the 1980's. I've had one in my basement for 18 years, and it's going great guns. So, thank you for that.

[Laughter.]

Mr. SCHJERVEN. You're welcome.

Mr. PRINDLE. My theme for today is that energy efficiency is, more than ever, the first fuel in our race for clean and secure en-

ergy. Efficiency is the first fuel, not just because it's the fastest to deploy, or the least expensive, or the most abundant resource; it's the first fuel, because if we want to deploy clean and domestic energy sources, we first have to curb the growth in our energy demand, if we want to have a hope of bringing enough of those resources to market.

Efficiency is already a major force in our economy. Some recent analysis we've done indicates that we, as Americans, currently spend somewhere in the neighborhood of \$200 billion a year on energy-efficient products and services. That's a lot of money. In fact, it's more than the entire amount we spend in the same period of time on all our energy supply investments, everything from power plants to pipelines and refineries. So, the demand side of our energy economy is actually larger than the supply side; it's just invisible, because it's hidden inside of millions of appliances and building systems and vehicles and so on.

Even though efficiency is a large economic force today, it could be a substantially larger contributor to our economy. We estimate as much as another \$200 billion of annual spending could be generated with cost-effective investment. But, because we do have substantial market barriers that are large and persistent, and because we have regulatory obstacles, particularly in the utility sector, it's going to take substantial new policy commitments to mine this unique resource that we have in our country.

We commend the committee for bringing forth the Energy Efficiency Promotion Act as among its first orders of business for this Congress. We support the Act's overall goals and provisions. Of course, we also have a few recommendations for some revisions and additions.

Titles 1 and 2 focus primarily on lighting and appliance standards. This is one of our specialties. We support the several consensus-based standards for a number of products that are in the bill, continuing on the tradition that the committee started in the Energy Policy Act of 2005. Title 2 also contains some provisions we think are important for the committee to consider, to enhance the Department of Energy's ability to set the best possible energy efficiency standards for the country.

Among these provisions are, in section 201, to allow more than one energy efficiency metric to be used in the setting of a standard. Experience has shown us that it makes sense to do this in many cases. In fact, one of the consensus agreements in the bill for residential boilers does include more than one energy efficiency metric. The Department of Energy told us they couldn't take it as written, because it didn't comport with their interpretation of the law, so it would help if the committee and Congress could clarify that.

We do support regional standards for certain kinds of heating and cooling equipment. DOE has been unable, in its interpretation of the law, to do this in the past, even when it would like to do so. The recent notice of proposed rulemaking on furnaces contained essentially an open invitation from the Department for States to bring forward applications for waivers of pre-emption. DOE basically said, "We understand that the cold States need high-efficiency furnaces, so please apply for waivers." However, we think that would be an undesirable situation. It would result in a patchwork

of, “This State has it, that State doesn’t.” We think it would be easier if Congress authorized DOE to predetermine which regions would get the higher-efficiency equipments. There is a precedent in Federal law for doing this. Currently, standards for manufactured housing are set nationally, but applied regionally, and enforced at the State and local level. So, we think this can be managed through labeling and other established methods.

There’s a provision to clarify the intent of the law regarding Federal pre-emption of State appliance efficiency standards. While I think we all agree that the preference is for one set of pre-emptive Federal standards, this section simply makes it crystal clear where the line can be drawn, so that States’ rights in this matter are not infringed. The history of appliance standards in this country over the last 30 years contained chapter after chapter in which State initiative was the key to getting Federal standards to occur. So, if the Federal Government wants appliance standards to continue to progress, it needs to leave States’ rights intact.

We also support section 206’s requirement for labeling of consumer electronic equipment. In our analysis, this whole class of consumer electronics is the fastest-growing energy use in the average house. It doesn’t take a genius to see that.

One recent estimate is that if you connect the high-end TV and home entertainment system, you can easily generate the energy consumption of several refrigerators. So, this is an important issue.

In title 4, the bill takes important steps to set national energy efficiency savings goals. We support those goals, particularly within the oil savings requirements in section 401. We would recommend that fuel economy be specifically called out. In our estimate, it’s quite possible, and cost-effective, to save 12 billion gallons of fuel through fuel economy in 2017, 45 billion gallons of gasoline in 2025 through fuel economy, and 68 billion gallons in 2030.

We also recommend, in the general context of title 4, that an energy efficiency resource standard be set for the United States. I know this issue has come up before this committee before. We simply reiterate this is an important issue if we want to make a dent in the many problems we face in the electricity sector. Several States have taken steps in this direction. But we need a national standard if we’re going to really ramp up progress in this essential area.

One way we would invite the committee to look at this is that an efficiency resource standard for the country can be Congress’s best downpayment on carbon emissions in the utility sector, because a carbon cap-and-trade system, which may be under the purview of another committee, is not, by itself, going to generate energy efficiency investment.

The appliance standards in this bill could save 50 billion kilowatt hours. A national efficiency resource standard could save more than 400 billion kilowatt hours, more than eight times what the standards are doing. So, it’s important to look at.

Finally, I just wanted to touch on the Federal leadership requirements in title 5. We support, in particular, section 505, the analysis of mine heat and power sites, and we would urge Congress to start with the capital power plant, which currently generates no electricity. If the capital power plant were simply converted to a com-

bined heat and power system, the net energy efficiency of Congress's energy supply could be more than doubled through that one project. So, we'd strongly urge you to take a look at that.

I'll stop now, and turn the mike over to my colleague to the left. [The prepared statement of Mr. Prindle follows:]

PREPARED STATEMENT OF WILLIAM PRINDLE, ACTING EXECUTIVE DIRECTOR,  
AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY (ACEEE)

#### SUMMARY

##### *Introduction*

Energy efficiency is the "first fuel" in America's race for a clean and secure energy future. Energy efficiency has saved consumers and businesses trillions of dollars in the past three decades, including more than half a trillion dollars in 2006 alone. These efforts should now be accelerated in order to:

- Save American consumers and businesses even more money;
- Change the energy supply and demand balance to reduce energy prices;
- Decrease America's addiction to oil, particularly oil imports;
- Strengthen our economy (since energy savings generate American jobs and capital investment); and
- Reduce the risks of global warming by moderating carbon dioxide emissions growth.

##### *The Urgency and the Opportunity for Efficiency Policy*

America's greatest energy challenges—energy security and global warming—are converging to force historic changes in U.S. energy and environmental policy. Our growing dependence on imported oil and natural gas, combined with high and volatile fuel prices threaten both our economic health and our geopolitical strength. The recent IPCC Fourth Assessment reports on the growing evidence of climate change, coupled with the Supreme Court's recent decision that carbon dioxide is a pollutant regulated under the Clean Air Act, increase the urgency and clarify the legal basis for national policy action to reduce greenhouse gas emissions.

Energy efficiency is the one resource that addresses both the energy security and climate challenges, while enhancing economic prosperity. Domestic energy supplies with low carbon content will take time to develop; but we can start now to accelerate efficiency investment, which will enable low-carbon domestic supplies to begin reducing energy imports and carbon emissions. If we do not use efficiency as the "first fuel" in the race for clean and secure energy, clean energy supply technologies may not be able to be deployed fast enough to meet runaway energy demand.

ACEEE research shows that new energy efficiency policy initiatives could make a big difference on the energy security and global warming fronts. For example:

- A 2005 ACEEE analysis found that reducing natural gas use by about 4% over five years could reduce natural gas prices by over 20%. Reducing demand for oil and for refined petroleum products is also likely to reduce prices.
- A 2006 ACEEE study finds that we can reduce U.S. oil use by more than 5 million barrels per day by 2020. That's equivalent to almost doubling current U.S. oil production—which no serious petroleum expert views as possible. Improvements to passenger vehicles account for more than 3 million barrels per day of savings, but more than 2 million barrels per day of savings are available in the residential, commercial, and industrial sectors, and in heavy vehicles and airplanes.
- Another 2006 ACEEE study found that the Regional Greenhouse Gas Initiative (RGGI) cap and trade system for power-sector carbon dioxide emissions in the northeastern U.S. can have a positive impact on the regional economy provided increased energy-efficiency policy commitments are a key part of implementation efforts.

##### *Past Energy Policy Acts, and the "Efficiency Gaps" They Left Unfilled*

The Energy Policy Act of 2005 contained some useful efficiency provisions, particularly new equipment efficiency standards and energy efficiency tax incentives. Other provisions authorized in the Act may help as well, but virtually all of these lack funding or other critical follow-up actions. Overall, ACEEE now estimates that the efficiency provisions in this law will reduce energy use in 2020 by 1.8 quadrillion Btu, which is 1.5% of projected national energy use. More than 75% of the savings are from equipment efficiency standards and efficiency tax incentives. Experi-

ence with the Energy Policy Act of 1992 shows a similar pattern—most of the savings came from a few provisions, and the majority of provisions proved to be more show than substance.

However, federal energy policy over the past twenty years has failed to address two of the core energy challenges in our economy: surging electricity demand and rapidly rising motor fuel usage. These two sectors are key elements to solving our energy security and climate problems. It is urgent that Congress take strong, prompt, unambiguous action in these areas. Had Congress adopted the major electricity and oil efficiency provisions that were deliberated in the development of EPAct 2005, ACEEE estimates that 2020 savings would have been up to four times higher.

*The Energy Efficiency Promotion Act*

ACEEE commends the Committee for leading the way in the 110th Congress with an energy efficiency bill. It reflects the principle that efficiency needs to be the first fuel in our energy resource policy process. Our comments focus on the following parts of the bill:

1. *Title I: Lighting Technologies.*—We support the reflector lamp standard contained in Section 102, which is based on a consensus agreement among ACEEE, manufacturers, and other stakeholders. The other provisions are also useful, including Sense of the Senate resolution in Section 104 that we hope will soon lead to a consensus agreement on a national standard to phase out the least efficient general service incandescent light bulbs, of which more than a billion are sold each year and pave the way for an eventual transition to dramatically more efficient light sources. We also recommend a new section calling for a study and plan for reaching a higher tier of energy performance for general service lighting that will meet or exceed the performance of today's compact fluorescent products with no compromise in light quality and continued consumer choice in the market.

2. *Title II: Efficiency Standards.*—This title contains consensus-based standards for residential boilers, industrial electric motors, and residential appliances, developed collaboratively among ACEEE, manufacturers, and other stakeholders. It also contains important provisions we support which enhance the Department of Energy's flexibility and capacity to create efficiency standards which best meet the statutory goals of "maximum energy savings which . . . [are] technically feasible and economically justified." These provisions authorize regional standards for heating and cooling equipment, clarify the intent of the law regarding federal pre-emption of state appliance efficiency standards, allow for flexible application of more than one efficiency metric for a given product if justified, and allow DOE to expedite rulemakings based on consensus agreements. We also support Section 206's requirement for FTC Energy Guide labeling of consumer electronic equipment. In our analysis, this class of products is the fastest-growing energy use in American homes, and American consumers need energy use information to make informed choices on these products.

3. *Title III: Efficient Vehicles.*—ACEEE supports the priorities identified in this title for vehicle efficiency technology research and deployment. We support the authorization of loan guarantees to facilities for the manufacture of parts for fuel-efficient vehicles, as well as incentives for manufacturers and suppliers to retool to produce advanced technology vehicles. We note however that the discussion of advanced lean burn technology should clarify that fuel economy for diesels is to be compared with that of gasoline vehicles on an energy-equivalent basis. This issue of gasoline-equivalence of diesel was not properly resolved in the EPAct 2005 tax credits, despite Senate intent; it has caused confusion in the implementation of the credits and should be clarified through this bill.

We also support the allocation of resources to developing domestic capability in energy storage for vehicles and to advancing electric drive technologies. However, it should be noted that DOE has spent hundreds of millions of dollars in the past on technologies of this kind without accelerating domestic manufacturers' production of vehicles that use them. Within the scope of this bill, we suggest that part of the funding proposed in this section be used for a competition to produce a plug-in hybrid meeting certain performance and cost criteria. This would help to ensure some real-world progress on vehicle efficiency would follow from the proposed technology investment of over \$400 million per year.

4. *Title IV: National Energy Efficiency Goals.*—While this title contains non-binding goals, we want to emphasize the need to set binding national targets for energy efficiency. While competitive markets will ultimately deliver the technologies and practices to reach these goals, markets do best when they have

clear and simple targets to meet. We applaud the Committee for setting an energy productivity goal for the nation; the 2.5% annual improvement represents nearly a 50% improvement in current productivity growth, and would sharply reduce energy demand growth overall.

We especially support the energy savings targets in section 401, though we recommend that the fuel economy aspects of this section be more specific. We note that the President's Twenty in Ten proposal, on which the 2017 target for the section appears to be based, relies very heavily on a loosely-defined set of alternative fuels, and only moderately accelerates fuel economy improvement. While the feasibility of deploying alternative fuels infrastructure is unproven, fuel economy technologies and costs are well known, and therefore a greater emphasis on fuel economy provides a better balance of risk for the nation. Accordingly, ACEEE recommends that fuel economy targets be set so as to save at least 12 billion gallons of fuel in 2017, 45 billion gallons in 2025, and 68 billion gallons in 2030.

We also recommend that a new section be created that sets electricity savings targets for distribution utilities, such that covered utilities would be required to save 10% of electricity sales by 2020. Many states have set such Energy Efficiency Resource Standards (EERS), often in coordination with renewable energy standards. We believe that setting efficiency standards is essential to the success of any renewable energy policy, because moderating demand growth is needed to allow clean supply sources to make a discernible difference in fossil fuel energy use.

*5. Title V: Federal Leadership.*—ACEEE supports the provisions of this title, especially the permanent authorization of the Energy Savings Performance Contracting (ESPC) program, and the assessment of Combined Heat and Power opportunities at federal facilities. We recommend that Congress place a special priority on installing CHP technology at the Capitol powerplant, which could be accomplished through an ESPC or similar vehicle.

*6. Title VI: State and Local Initiatives.*—ACEEE supports the provisions of this title, especially section 603's requirements for utilities and states to include energy efficiency in resource planning, and to reform ratemaking policies to make energy efficiency a better business proposition for utilities. We recommend that the bill also include Regional Transmission Organizations (RTOs) among the entities covered by this section. This section should also be linked ultimately to a federal Energy Efficiency Resource Standard (EERS) that sets quantitative targets for energy savings for utilities, with the goal of saving 10% of electricity sales by 2020. Sections 139 and 140 of EPAct 2005 called for a study and pilot program for EERS. The study is complete, and shows that these policies are gaining acceptance and enjoying success in a number of states. Given the increased urgency to address carbon emissions from electric utilities, this should be a high priority for Congress in 2007.

#### *Energy Savings*

ACEEE estimates that the appliance and equipment efficiency standard provisions in this bill together can produce savings as follows:

- *Electricity.*—At least 50 billion kilowatt hours per year, or enough to power roughly 4.8 million typical U.S. households.
- *Natural gas.*—170 million therms per year, or enough to heat about a quarter million typical U.S. homes.
- *Water.*—At least 560 million gallons per day, or about 1.3% of total daily potable water usage.
- *Dollars.*—More than \$12 billion in net benefits for consumers.

We also estimate that significant additional savings would result from the sections that improve DOE authority to set better standards.

#### *Conclusion*

ACEEE supports the Energy Efficiency Promotion Act as a major additional step on the road to a sustainable energy future. We recommend a number of ways that this bill can be augmented, within its existing provisions, by adding new provisions, and through additional legislation.

#### INTRODUCTION

ACEEE is a nonprofit organization dedicated to increasing energy efficiency as a means of promoting both economic prosperity and environmental protection. We were founded in 1980 and have contributed in key ways to energy legislation adopt-

ed during the past 25 years, including the Energy Policy Acts of 2005 and 1992 and the National Appliance Energy Conservation Act of 1987. I have testified before the Committee several times and appreciate the opportunity to do so again.

Energy efficiency improvements have contributed a great deal to our nation's economic growth and increased standard of living over the past 30 years. Energy efficiency improvements since 1970 accounted for approximately 75 quadrillion Btus of saved energy in 2005, which is about three-quarters of U.S. energy use and three times as much as total energy supply growth over the same period. In this sense, energy efficiency can rightfully be called our country's largest energy resource. If the United States had not dramatically reduced its energy intensity over the past 30 years, consumers and businesses would have spent about \$700 billion more on energy purchases in 2005.\*

Energy efficiency has also become a major force in the economy in terms of infrastructure investment. ACEEE ongoing research indicates that total energy supply infrastructure investment in the United States in 2005 was approximately \$100 billion. Energy efficient technology spending, from high-efficiency lighting to hybrid cars, was in the range of \$200 billion in the same period. This means that America spends many times more money on energy-using technology than on energy supply technology. However, this remarkable truth is masked, by the fact that efficiency is typically hidden inside our buildings, vehicles, and factories in millions of products, components, and systems. Yet collectively, these efficiency investments support a much larger fraction of the economy than do all the energy supply sectors combined.

Even though the United States is much more energy-efficient today than it was 30 years ago, there is still enormous potential for additional cost-effective energy savings. Some newer energy efficiency technologies have barely begun to be adopted. Other efficiency measures could be developed and commercialized rapidly in coming years, with policy and program support. For example, in a study from 2000, the Department of Energy's national laboratories estimate that increasing energy efficiency throughout the economy could cut national energy use by 10 percent or more in 2010 and about 20 percent in 2020, with net economic benefits for consumers and businesses.<sup>1</sup> Studies for many regions of the country have found similar if not even greater opportunities for cost-effective energy savings.<sup>2</sup> A recent analysis by McKinsey Global Institute found that U.S. energy demand growth through 2030 could be fully met through cost-effective energy efficiency improvements. Our ongoing research indicates that current estimates of \$200 billion in annual spending on efficient technology could be doubled to \$400 billion, with strong public policies and increase private investment.

Unfortunately, a variety of market barriers keep energy efficiency investment from being accelerated. These barriers fall in two main categories: (1) principal-agent or "split incentive" barriers, in which, for example, home builders must invest added capital in efficient homes, but receive none of the energy savings benefits; and (2) transaction costs, which stem from inability of average consumers or businesses to make "economically optimum" decisions in time-and-information-limited real world conditions. A recent ACEEE study for the International Energy Agency found that, in the major residential and commercial end-use markets in five countries, half or more of the energy used is affected by these kinds of market barriers.<sup>3</sup> This finding suggests that public policies, beyond pricing policies, are needed to overcome such barriers.

In addition, basic forces in the economy work against the tendency of higher energy prices to moderate energy demand. This principle of "price elasticity of demand", while economically correct, is countered by "income elasticity of demand", under which rising incomes cause consumers to be less affected by rising prices. A large segment of our population continues to buy low-mileage, high priced vehicles with little concern for fuel costs. For less-affluent consumers, "cross-elasticities" come into play that cause them to keep using energy as an essential service, but to cut back on other goods and services to balance their household budgets. Economists have documented the slowing of retail sales among low- and moderate-income people in response to rising energy prices. Both the income elasticity and cross-elas-

\* Graphic has been retained in Committee files.

<sup>1</sup> Interlaboratory Working Group, 2000, *Scenarios for a Clean Energy Future*. Washington, DC: Interlaboratory Working Group on Energy-Efficient and Clean-Energy Technologies, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy.

<sup>2</sup> For a summary of many of these studies, see Nadel, Shipley and Elliott, 2004, *The Technical, Economic and Achievable Potential for Energy-Efficiency in the U.S.—A Meta Analysis of Recent Studies*. Washington, DC: American Council for an Energy-Efficient Economy.

<sup>3</sup> Prindle et al. 2007. *Quantifying Market Barriers in the End Use of Energy*. Draft report to the International Energy Agency. American Council for an Energy-Efficient Economy.

ticity effects suggest that energy prices alone won't balance our energy markets, and we need stronger energy policies if we want to stabilize energy markets without wrecking our economy.

Recent developments in our energy markets indicate that the U.S. needs to accelerate efforts to implement energy efficiency improvements:

- Oil, gasoline, natural gas and coal prices have risen substantially in recent years. For example, residential natural gas prices in 2005 averaged \$13.83 per thousand cubic feet, up 61% from the average price three years earlier (prices averaged \$8.57 per thousand cubic feet in 2002).<sup>4</sup> Likewise retail gasoline prices are up 87% relative to three years ago (\$2.917 per gallon 6/19/06 versus \$1.558 per gallon 6/16/03).<sup>5</sup> Even more dramatically, Powder River Basin coal has more than doubled in price since three years ago (spot prices of \$13.80 per short ton in May, 2006, up from about \$6 per short ton in May, 2003).<sup>6</sup> Energy efficiency can reduce demand for these fuels, reducing upward price pressure and also reducing fuel-price volatility, making it easier for businesses to plan their investments. Prices are determined by the interaction of supply and demand—if we seek to address supply and not demand, it's like entering a boxing match with one hand tied behind our back.
- A recent ACEEE analysis found that gas markets are so tight that if we could reduce gas demand by as little as 4% over the next five years, we could reduce wholesale natural gas prices by more than 20%.<sup>7</sup> This analysis was conducted by Energy and Environmental Analysis, Inc. using their North American Gas Market Model, the same analysis firm and computer model that was employed by DOE and the National Petroleum Council for their 2003 study on U.S. natural gas markets.<sup>8</sup> These savings would put over \$100 billion back into the U.S. economy. Moreover, this investment would help bring back U.S. manufacturing jobs that have been lost to high gas prices and also help relieve the crushing burden of natural gas costs experienced by many households, including low-income households. Importantly, much of the gas savings in this analysis comes from electricity efficiency measures, because much of the marginal electric load is met by natural-gas fired power plants.
- The U.S. is growing increasingly dependent on imported oil, with imports accounting for more than 60% of U.S. oil consumption in 2005, of which more than 40% came from OPEC countries.<sup>9</sup> The U.S. Energy Information Administration estimates that imports will account for 68% of U.S. oil use in 2020.<sup>10</sup> While moderate amounts of new oil are available in hard-to-reach areas of the U.S., much greater amounts of oil are available by increasing the efficiency with which we use oil. A January 2006 report by ACEEE found that the U.S. can reduce oil use by as much as 5.3 million barrels per day in 2020 through improved efficiency, including more than 2 million barrels per day in industry, buildings, heavy duty vehicles and airplanes.<sup>11</sup> In other words, there are substantial energy savings outside of the highly contentious area of light-duty vehicle fuel economy. These 5.3 million barrels per day of oil savings are nearly as much as we presently import from OPEC (OPEC imports were 5.5 million barrels per day in 2005).<sup>12</sup> Energy efficiency can slow the growth in oil use, allow-

<sup>4</sup>Energy Information Administration, 2006, *Natural Gas Navigator: U.S. Natural Gas Residential Price*. [http://tonto.eia.doe.gov/dnav/ng/ngpri\\_sum\\_dcu\\_nus\\_m.htm](http://tonto.eia.doe.gov/dnav/ng/ngpri_sum_dcu_nus_m.htm). Visited June 20. Washington, DC: U.S. Dept. of Energy.

<sup>5</sup>Energy Information Administration, 2006, *Petroleum Navigator: U.S. All Grades All Formulations Retail Gasoline Prices*. [http://tonto.eia.doe.gov/dnav/pet/hist/mg\\_tt\\_usw.htm](http://tonto.eia.doe.gov/dnav/pet/hist/mg_tt_usw.htm). Visited June 20. Washington, DC: U.S. Dept. of Energy.

<sup>6</sup>Energy Information Administration, 2006, *Coal News and Markets, Week of May 5, 2006*. <http://www.eia.doe.gov/cneaf/coal/page/coalnews/coalmar.html#spot>. Washington, DC: U.S. Dept. of Energy.

<sup>7</sup>Elliott and Shipley, 2005, *Impacts of Energy Efficiency and Renewable Energy on Natural Gas Markets: Updated and Expanded Analysis*. <http://www.aceee.org/pubs/e052full.pdf>. Washington, DC: American Council for an Energy-Efficient Economy.

<sup>8</sup>National Petroleum Commission. 2003, *Balancing Natural Gas Policy—Fueling the Demands of a Growing Economy: Volume I Summary of Findings and Recommendations*. Washington, DC: U.S. Department of Energy.

<sup>9</sup>Energy Information Administration, 2006, *Monthly Energy Review May 2006*. Washington, DC: U.S. Dept. of Energy.

<sup>10</sup>Energy Information Administration, 2006, *Annual Energy Outlook*. Washington, DC: U.S. Department of Energy.

<sup>11</sup>Elliott, Langer and Nadel, 2006, *Reducing Oil Use Through Energy Efficiency: Opportunities Beyond Cars and Light Trucks*. Washington, DC: American Council for an Energy-Efficient Economy.

<sup>12</sup>See note #9.

ing a larger portion of our needs to be met from sources in the U.S. and friendly countries.

- Economists have increasingly raised concerns that the U.S. economy is slowing and that robust growth rates we have experienced in recent years will not be sustained. Energy efficiency investments can help spur additional economic growth; they often have financial returns of 30% or more, helping to reduce operating costs and improve profitability. In addition, by reducing operating costs, efficiency investments free up funds to spend on other goods and services, creating what economists call the “multiplier effect”, and helping the economy broadly. This stimulates new economic activity and job growth in the U.S., whereas most of every dollar we spend on oil flows overseas. A 1997 study found that due to this effect, an aggressive set of efficiency policies could add about 770,000 jobs to the U.S. economy by 2010.<sup>13</sup>
- Overall, the U.S. has ample supplies of electricity at present, but demand is growing and several regions (such as southwest Connecticut, Texas, New York, and California) are projecting a need for new capacity in the next few years in order to maintain adequate reserve margins.<sup>14 15</sup> Energy efficiency resource policies can slow demand growth rates, postponing the date that additional capacity will be needed.
- Greenhouse gas emissions continue to increase. Early signs of the impact of these changes are becoming apparent in Alaska and other Arctic regions.<sup>16</sup> And several recent papers have identified a link between warmer ocean temperatures and increased hurricane intensity.<sup>17 18</sup> Energy efficiency is the most cost-effective way to reduce these emissions, as efficiency investments generally pay for themselves with energy savings, providing negative-cost emissions reductions. The term “negative-cost” means that, because such efficiency investments produce net economic benefits, they achieve emission reductions at a net savings for the economy. This important point has been missed in much of the climate policy analysis modeling performed to date. Too many economic models are incapable of characterizing the real economic effects of efficiency investments, and so forecast inaccurate economic costs from climate policies. Fortunately, this kind of flawed policy analysis is beginning to be corrected. For example, a May 2006 study just released by ACEEE found that the Regional Greenhouse Gas Initiative (RGGI—the planned cap and trade system for greenhouse gases in the northeastern U.S.) can have a small but positive impact on the regional economy provided increased energy-efficiency programs are a key part of implementation efforts.<sup>19</sup>

Energy efficiency also draws broad popular support. For example, in a March 2005 Gallup Poll, 61% of respondents said the U.S. should emphasize “more conservation” versus only 28% who said we should emphasize production (an additional 6.5% volunteered “both”).<sup>20</sup> In an earlier May 2001 Gallup poll, when read a list of 11 actions to deal with the energy situation, the top four actions (supported by 85-91% of respondents) were “invest in new sources of energy,” “mandate more energy-efficient appliances,” “mandate more energy-efficient new buildings,” and “mandate more energy-efficient cars.” Options for increasing energy supply and delivery generally received significantly less support.<sup>21</sup>

However, energy efficiency alone will not solve our energy problems. Even with aggressive actions to promote energy efficiency, U.S. energy consumption is likely

<sup>13</sup> Alliance to Save Energy et al., 1997, *Energy Innovations: A Prosperous Path to a Clean Environment*. Washington, DC: American Council for an Energy-Efficient Economy.

<sup>14</sup> North American Electric Reliability Council, 2005, *2005 Long-Term Reliability Assessment: The Reliability of Bulk Electric Systems in North America*. Princeton, NJ: North American Electric Reliability Council.

<sup>15</sup> New York Independent System Operator, 2005, “The NYISO Issues Reliability Needs Assessment.” Press release of December 21. Schenectady, NY: New York Independent System Operator.

<sup>16</sup> Hassol, 2004, *Impacts of a Warming Arctic: Arctic Climate Impact Assessment*. <http://www.acia.uaf.edu>. Cambridge University Press.

<sup>17</sup> Webster, Holland, Curry and Chang, 2005, “Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment.” *Science*, 309, 16 September, 1844-1846.

<sup>18</sup> Emanuel, 2005, “Increasing Destructiveness of Tropical Cyclones over the Past 30 Years.” *Nature*, 436, 4 August, 686-688.

<sup>19</sup> Prindle, Shipley and Elliott, 2006, *Energy Efficiency’s Role in a Carbon Cap-and-Trade System: Modeling Results from the Regional Greenhouse Gas Initiative*. Washington, DC: American Council for an Energy-Efficient Economy.

<sup>20</sup> Gallop, 2005, “Gallop Poll Social Series—The Environment.” Princeton, NJ: The Gallop Organization.

<sup>21</sup> Moore, David, 2001, “Energy Crisis: Americans Lean toward Conservation over Production.” Princeton, NJ: The Gallup Organization.

to rise for more than a decade, and this growth, combined with retirements of some aging facilities, will mean that some new energy supplies and energy infrastructure will be needed. But aggressive steps to promote energy efficiency will substantially cut our energy supply and energy infrastructure problems, reducing the economic cost, political controversy, and environmental impact of energy supply enhancements.

#### THE ENERGY POLICY ACT OF 2005

The Energy Policy Act of 2005 (EPAct 2005) made some useful progress on energy efficiency. Particularly notable were sections that established new consensus federal efficiency standards on 16 products and that created energy efficiency tax incentives. Other useful provisions include extension of authority for Energy Saving Performance Contracts in federal facilities and a variety of reports that hopefully will help spur future policy action. For example, the EPAct 2005 provision requiring DOE to submit a plan to Congress on steps it will take to catch-up on overdue efficiency standard rulemakings was timed just right and DOE has now prepared and begun to implement this plan. In addition, a variety of promising initiatives were authorized in EPAct 2005, but to have an impact, need to be followed by appropriations. Unfortunately, most of the new provisions requiring funding have not been included in the FY 2007 or 2008 budget requests nor in appropriations bills. Given recent developments, such as the lack of funding for many of the EPAct 2005 provisions, ACEEE now estimates that the energy efficiency sections of EPAct 2005 will reduce U.S. energy use by about 1.8 quadrillion Btu (“Quads”) in 2020, reducing projected U.S. energy use in 2020 by 1.5%. Of these savings, more than 75% will come from the two key provisions—equipment efficiency standards and energy-efficiency tax incentives.<sup>22</sup>

EPAct 2005 overlooked two critical policy issues: energy efficiency targets for the electricity sector and the oil sector. These two sectors are critical for energy security and global warming, and efficiency needs to be the first-priority policy in these areas. However, the final bill did not include any specific oil or electricity saving targets, even though the Senate version included an oil savings target and Senate deliberations discussed setting utility energy efficiency targets. If the United States is serious about addressing its energy security and global warming problems, it must set specific and strong policies to moderate demand growth for oil and electricity.

#### KEY PRIORITIES FOR THE ENERGY EFFICIENCY PROMOTION ACT

ACEEE applauds the Committee for its timely and thorough approach in bringing an energy efficiency bill forward. Our specific comments focus in on those sections that we find to contain the greatest energy savings potential, and that are important to supporting effective policy implementation.

*Title I: Lighting technologies.*—ACEEE supports the overall aims of this section, and also recommends certain additions.

- We support the reflector lamp standard contained in Section 102, which is based on a consensus agreement among ACEEE, manufacturers, and other stakeholders. Reflector lamps, increasingly common in recessed lighting fixtures in today’s homes, represent a growing portion of the residential lighting market, and this standard will help moderate the impact of this end use
- We also support the Sense of the Senate provision in Section 104, which we hope will soon lead to a consensus agreement on a national standard to phase out the least efficient general service light bulbs, of which more than a billion are sold each year, and pave the way for an eventual transition to dramatically more efficient light sources. ACEEE is working with the Alliance to Save Energy, the Natural Resources Defense Council, Philips Lighting, Osram Sylvania, General Electric, the American Lighting Association, and others to develop this agreement.
- We also recommend a new section calling for a study and plan for reaching a higher tier of energy performance for general service lighting that will meet or exceed the performance of today’s compact fluorescent products without compromise on light quality and with continued consumer choice in the market.

<sup>22</sup>Nadel, Prindle and Brooks, 2006, “The Energy Policy Act of 2005: Energy Efficiency Provisions and Implications for Future Policy Efforts” in Proceedings of the 2006 ACEEE Summer Study on Energy-Efficiency in Buildings. Washington, DC: American Council for an Energy-Efficient Economy.

*Title II: Efficiency Standards.*—This title contains consensus-based standards for residential boilers, industrial electric motors, and residential appliances, developed collaboratively among ACEEE, manufacturers, and other stakeholders. It also contains several provisions we support to improve the Department of Energy’s ability to set standards that will save more energy and better balance the needs of states with federal authority.

- Section 201 is designed to allow DOE to set standards which capture different aspects of a product’s efficiency performance. For example, DOE determined it lacked administrative authority to adopt the consensus boiler standard contained in S. 1115 because that proposal called for two prescriptive requirements and a minimum efficiency rating. Several other products are currently subject to multiple standard requirements including commercial clothes washers, ceiling fans and heat pumps. For some products, it makes better engineering, economic and energy-efficiency sense to establish a standard which may combine multiple performance and prescriptive elements. Our analysis is that this added flexibility in DOE’s authority will save more energy and reduce costs.
- Section 202 authorizes the Department of Energy to set regional standards for residential heating and cooling equipment. In our experience with rulemakings for central air conditioners and furnaces, DOE’s professed inability to set regional standards has frustrated otherwise cost-effective standards from being proposed. DOE recognized this problem in its recent Notice of Proposed Rulemaking for residential furnaces, in which it invited states that need higher-performance furnaces to apply for waivers of pre-emption under the law. Several states have already moved in this direction. This section simply enables DOE to set regional standards directly, rather than relying on the cumbersome and uncertain process of waiver applications. A state-by-state waiver process will result in a patchwork of standards, whereas regional standards as allowed for in S. 2111 would result in no more than three large, contiguous regions. Since 1978 manufactured housing has been subject to very successful regional efficiency and other standards set by the Department of Housing and Urban Development. A similar system which relies on manufacturer labeling of products and state enforcement would work for climate sensitive appliances like central air conditioners and heating equipment. States routinely adopt federal minimum standards into building codes, providing an already in-place system of state-based enforcement.
- Section 203 requires DOE to conduct a rulemaking to determine if standards for furnace fans are warranted. Congress authorized DOE to consider furnace fan energy saving standards in 2005, but the Department subsequently decided to not schedule a rulemaking. Given the Department’s history of delays, we think it imperative that the Congress give DOE a hard deadline for action. We estimate that this rulemaking could offer very large energy and economic savings.
- Section 204 would allow an expedited DOE standard rulemaking based on consensus agreements. While we agree with the Department on the desirability of this provision, we prefer the bill’s language to an alternative version proposed by the Department. We believe the bill’s current language better reflects due process and would expedite rules more effectively. We also remind the Committee that the DOE language was rejected by Congress in 2005.
- Section 205 clarifies the intent of the law regarding federal pre-emption of state appliance efficiency standards. Federal law has struck a balance over the years between federal and state roles on appliance standards. While the general consensus is that federal states are preferable to a patchwork of state standards, states have also retained the right to advance standards for products not covered by federal law, and for covered products up to the effective date of the federal standard. History shows that state initiative has led to many of the advances in federal policy on appliance standards. In fact, it was state action on standards following the 1982 DOE “no-standard standard” rule that ultimately led to the National Appliance Energy Conservation Act of 1987. Since then, state initiatives have helped to spur consensus agreements for federal standards on many other products. The language in this section simply clarifies key aspects of this federal-state relationship. We also recommend that the Committee consider language that would “sunset” pre-emption if the federal government fails to promulgate standards within Congressionally-prescribed timeframes, and that would require DOE to conduct new rulemakings on covered products within a defined period following the effective date of a given standard. We believe these additional provisions will keep U.S. appliance efficiency standards policy moving forward, while striking the right balance between federal and

state roles. Given the increasing urgency of accelerating the pace of energy efficiency technology improvement, it is appropriate for Congress to ensure that federal appliance efficiency standards keep up with and support technology innovation.

- Section 206 sets requirement for FTC Energy Guide labeling of consumer electronic equipment. We support this provision because, in our analyses, this class of products is the fastest-growing energy use American homes, and American consumers need energy use information to make informed choices on these products. A Natural Resources Defense Council report indicates that the largest televisions on the market today can use more energy than the average refrigerator.<sup>23</sup> Coupled with other components in high-performance home entertainment systems, these products threaten to offset many of the energy savings the U.S. has achieved through its standards programs. Labeling these products, based on their full operating mode as well as on standby mode, is an important first step in addressing this problem.
- Section 209 raises the minimum efficiency requirements for electric motors covered by the Energy Policy Act of 1992 to the highest NEMA Premium available in the marketplace. In addition, the proposal expands the scope of motors covered to include most of the industrial electric motors of 500 horsepower and lower. ACEEE participated with NEMA in reaching consensus on this proposal, and ACEEE feels that the provision provides a balance between the interest of motor users and the need for greater energy efficiency among a product that consumes over two-thirds of the industrial electricity in the country.

*Title III: Efficient Vehicles.*—ACEEE generally concurs with the priorities identified in this title for vehicle efficiency technology research and deployment. Despite the downward trend of DOE funding for research on lightweight materials for automotive applications in recent years, we believe there is substantial remaining potential to improve fuel economy through the use of such materials. Indeed, this is why we and others worked to ensure that DOT's CAFE reform for light trucks did not result in a system tying fuel economy requirements to vehicle weight, which would have eliminated auto manufacturers' incentive to incorporate lightweight materials into their products to raise corporate fuel economy.

ACEEE supports the authorization of loan guarantees to facilities for the manufacture of parts for fuel-efficient vehicles, as well as incentives for manufacturers and suppliers to retool to produce advanced technology vehicles. We note however that the discussion of advanced lean burn technology should clarify that fuel economy for diesels is to be compared with that of gasoline vehicles on an energy-equivalent basis. Otherwise, the requirement that the vehicle have fuel economy at least 125% of baseline fuel economy to qualify for the manufacturing incentive becomes much more lenient for diesels (11-14% less stringent) in terms of efficiency, due to the high Btu content of diesel fuel. While its high energy density does lead to an additional (non-efficiency) benefit for diesel in terms of petroleum reduction, carbon emissions produced by diesel combustion are higher per gallon, so that no climate benefits follow from high fuel density. It is important to take this opportunity to begin to establish the principle that petroleum reduction policies should support, not undermine, policies to address climate change. This issue of gasoline-equivalence of diesel was not properly resolved in the EPAct 2005 tax credits, despite Senate intent; it has caused confusion in the implementation of the credits and should be clarified through this bill.

We also support the allocation of resources to developing domestic capability in energy storage for vehicles and to advancing electric drive technologies. However, it should be noted that DOE has spent hundreds of millions of dollars in the past (e.g. in the Partnership for a New Generation of Vehicles) on technologies of this kind without accelerating domestic manufacturers' production of vehicles that use them. That experience demonstrates the importance of using R&D dollars to support a policy of mandatory fuel economy increases, rather than as a substitute for such a policy. Within the scope of this bill, we suggest that part of the funding proposed in this section be used for a competition for parts/automaker teams to produce a prototype plug-in hybrid meeting certain performance and cost criteria (assuming large volume production). This would help to ensure some real-world progress on vehicle efficiency would follow from the proposed investment of over \$400 million per year in battery/electric drive technologies.

*Title IV: National Energy Efficiency Goals.*—While this title contains non-binding goals, which we support, we also want to emphasize the need to set binding national

<sup>23</sup>Horowitz, Noah et al. 2005. *Televisions: Active Mode Energy Use and Opportunities for Energy Savings*. Natural Resources Defense Council Issue Paper, 2005.

goals for energy efficiency. While competitive markets will ultimately deliver the technologies and practices to reach these goals, markets do best when they have clear and simple targets to meet. We applaud the Committee for setting an energy productivity goal for the nation; the 2.5% annual improvement represents nearly a 50% improvement in current productivity growth, and would sharply reduce energy demand growth overall.

We especially support the energy savings targets in section 401, though we recommend that the fuel economy aspects of this section be more specific. We note that the President's Twenty in Ten proposal, on which the 2017 target for the section appears to be based, relies very heavily on a loosely-defined set of alternative fuels, and only moderately accelerates fuel economy improvement. While the feasibility of deploying alternative fuels infrastructure is unproven, fuel economy technologies and costs are well known, and therefore a greater emphasis on fuel economy provides a better balance of risk for the nation. ACEEE recommends that fuel economy targets be set so as to save at least 12 billion gallons of fuel in 2017, 45 billion gallons in 2025, and 68 billion gallons in 2030.

We also recommend that a new section be created that sets electricity savings targets for distribution utilities, such that covered utilities would be required to save 10% of electricity sales by 2020. Such Energy Efficiency Resource Standard (EERS) are simple, market-based mechanisms to encourage more efficient generation, transmission, and use of electricity and natural gas. EERS-type laws and regulations are now in operation in several states and countries. Texas's electricity restructuring law created a requirement for electric utilities to offset 10% of their demand growth through end-use energy efficiency. Utilities in Texas have already exceeded their targets there is discussion about raising them. Hawaii and Nevada recently expanded their renewable portfolio standards to include energy efficiency. Connecticut and California have both established energy savings targets for utility energy efficiency programs (Connecticut by law and California by regulation) while Vermont has specific savings goals in the performance contract with the nonprofit organization that runs statewide programs under a contract with the Public Service Board. Pennsylvania's new Advanced Energy Portfolio Standard includes end-use efficiency among other clean energy resources. Colorado's largest utility has energy savings goals as part of a settlement agreement approved by the Public Service Commission. And Illinois and New Jersey are planning to begin programs soon. EERS-like programs have been working well in the United Kingdom and the Flemish region of Belgium. Italy has recently started a program, and another is about to start in France. Details on each of these programs are provided in a March 2006 ACEEE report.<sup>24</sup>

While many EERS are separate from a renewable portfolio standard, another option would be to combine renewable energy and energy efficiency in a single portfolio standard. However, if this is done, the portfolio target should be significantly higher than if only renewable energy or if only energy efficiency were included. Specifically, a combined RPS-EERS should not reduce any previously-set targets for renewable energy generation. For example, a combined efficiency/renewables target might be 15-20% of 2020 sales, which is a higher target than the 10% of 2020 electricity sales that the Senate has previously passed as a renewable portfolio standard.

*Title V: Federal Leadership.*—ACEEE supports the provisions of this title, especially the permanent authorization of the Energy Savings Performance Contracting (ESPC) program, and the assessment of Combined Heat and Power (CHP) opportunities at federal facilities. We recommend that Congress place a special priority on installing CHP technology at the Capitol powerplant, which could be accomplished through an ESPC or similar vehicle.

*Title VI: State and Local Initiatives.*—ACEEE supports the provisions of this title, especially section 603's requirements for utilities and states to include energy efficiency in resource planning, and to reform ratemaking policies to make energy efficiency a better business proposition for utilities. We recommend that the bill also include Regional Transmission Organizations (RTOs) among the entities covered by this section. This section should also be linked ultimately to a federal Energy Efficiency Resource Standard (EERS) that sets quantitative targets for energy savings for utilities, with the goal of saving 10% of electricity sales by 2020. Sections 139 and 140 of EPAct 2005 called for a study and pilot program for EERS. The study is complete, and shows that these policies are gaining acceptance and enjoying success in a number of states. Given the increased urgency to address carbon emissions from electric utilities, this should be a high priority for Congress in 2007.

<sup>24</sup>Nadel, 2006, *Energy Efficiency Resource Standards: Experience and Recommendations*. Washington, DC: American Council for an Energy-Efficient Economy.

## ENERGY SAVINGS

ACEEE has estimated the energy and water savings from the appliance standards provisions of the bill.

*Consensus standards.*—The following standards are included based on agreements between efficiency advocates and manufacturers. Annual savings summarized below (at the level achieved when all equipment in use complies).

- Residential boilers—170 million therms natural gas per year, net present benefits of \$2.5 billion.
- Incandescent reflector lamps—6 billion kilowatt hours per year, net present benefits of \$5 billion.
- Clothes washer, dishwashers and dehumidifiers—560 million gallons of water per day; energy and dollar savings TBD.
- Motors—8 billion kilowatt hours per year, net present benefits of \$500 million.

*New rulemakings.*—The legislation provides for DOE rulemakings to set standards for the following products. Potential energy savings from such rulemakings (assuming appropriately strong DOE rules) are as follows:

- Refrigerators—14 to 23 billion kilowatt hours per year, net present benefits TBD.
- Residential furnace fans—13 billion kilowatt hours per year; \$4.1 billion net present benefits.
- Clothes washers and dishwashers—savings to be determined at a later date.

*Provisions to strengthen the appliance standards program.*—Various standards pending before U.S. DOE for rulemakings have the potential to reduce energy consumption by nearly 200 billion kilowatt hours per year, roughly the amount of power generated by 65 large power plants (500 megawatts each). The pending legislation does not directly affect most of these rulemakings, but will enhance significantly the ability of DOE to set appropriately strong standards. Provisions designed to provide the Secretary of Energy greater flexibility in setting standards include limited authority for regional standards for climate-sensitive products, authority to use multiple efficiency metrics for a given product and authority for expedited rules.

*Total potential savings*

- *Electricity.*—At least 50 billion kilowatt hours per year, or enough to power roughly 4.8 million typical U.S. households
- *Natural gas.*—170 million therms per year, or enough to heat about a quarter million typical U.S. homes.
- *Water.*—At least 560 million gallons per day, or about 1.3% of total daily potable water usage.
- *Dollars.*—More than \$12 billion in net present benefits for consumers.

## CONCLUSION

Energy efficiency is the “first fuel” in America’s race for a clean and secure energy future. Energy efficiency has saved consumers and businesses trillions of dollars in the past three decades, including more than half a trillion dollars in 2006 alone. These efforts should now be accelerated to meet America’s greatest energy challenges—energy security and global warming. These twin problems are converging to force historic changes in U.S. energy and environmental policy. Energy efficiency is the one resource that addresses both the energy security and climate challenges in the near term, while enhancing economic prosperity. Domestic energy supplies with low carbon content will take time to develop; but we can start now to accelerate efficiency investment, which will enable low-carbon domestic supplies to begin reducing energy imports and carbon emissions. If we do not use efficiency as the “first fuel” in the race for clean and secure energy, clean energy supply technologies may not be able to be deployed fast enough to meet runaway demand.

ACEEE supports the Energy Efficiency Promotion Act as a major additional step on the road to a sustainable energy future. We recommend a number of ways that this bill can be augmented, within its existing provisions, by adding new provisions, and through additional legislation.

This concludes my testimony. Thank you for the opportunity to present these views. We look forward to responding to any questions or providing any additional information that the committee may require to complete this important legislation.

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

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

Mr. PITSOR. Chairman Bingaman, members of the committee, good afternoon. I'm Kyle Pitsor, vice president for government relations with the National Electrical Manufacturers Association. I'm pleased to present our association's views on S. 1115, and our industry's continuing engagement in advancing energy efficiency in the residential, commercial, industrial, and government arenas.

NEMA member companies manufacture the products and technologies used in the generation, transmission, distribution, control, and end use of electricity, and are at the heart of our national effort to reduce dependence on fossil fuels, cleaner environment, and a higher standard of living.

Federal leadership at energy efficiency in government-owned and leased buildings is key, since the national government is the largest user of electricity in the country. We fully support the government procurement requirements and mandates of energy-efficient lighting products in section 102, the enactment Federal building codes and standards, and the expansion and permanency of the Energy Savings Performance Contracts contained in section 503 of the bill.

State-of-the-art energy efficient products and technologies are widely available, yet their deployment and use are not at the level they should be. S. 1115 addresses this challenge in several respects, and I'd like to comment on those.

First, the bill calls for a national education campaign to increase awareness and knowledge of today's products, in section 403. Consumer education at all levels must be a national priority, and NEMA stands ready to assist in that national effort.

Second, new mandatory energy-efficiency efficient product standards are proposed. The standards are based on consensus agreements negotiated among manufacturers, environmental groups, and other stakeholders. For NEMA, these new standards include new standards for incandescent reflector lamps typically used in residential downlighting, contained in section 102 of the bill, and electric motors used in manufacturing and industrial processes, contained in section 209 of the bill. We support these provisions.

Third, while we support legislating these consensus standards agreements, we also note that it's not practical to require Congress to pass legislation each time a consensus agreement is reached or developed. That is why we support amending the Energy Policy and Conservation Act to provide a new route through an expedited rulemaking process, as suggested in section 204 of the bill. The benefits of an accelerated process for adopting consensus agreements by the Department of Energy are numerous, and will provide for greater flexibility and responsiveness to market and technology changes as they occur.

Fourth, NEMA's presently engaged in negotiations on new lighting standards, which are discussed in the Sense of the Senate language in section 104 of the bill. Lighting represents 20 to 22 percent of the Nation's electricity consumption. We would be making significant progress toward a comprehensive proposal, Mr. Chairman, aimed at eliminating the least efficient incandescent A-line

lamps in the 40- to 100-watt range through the use of performance-based technology-neutral efficiency standards. We note the historic nature of such an undertaking by our industry, and that full market transformation will likely take a decade to complete. We hope to provide you and this committee with a negotiated proposal in the very near future.

One aspect of the bill materially changes a significant and long-standing principle in Federal pre-emption for overseeing energy efficiency standards, and we believe provision 205 conflicts with the policies contained in EPCA. Congress provided in EPCA, in the EPCA statute, for certain exceptions and exemptions to Federal pre-emption for federally covered products. We do not believe that the provisions of 205, as drafted, are appropriate, and, if enacted, would radically flip the carefully constructed comprehensive national policy underlying the Federal statute.

Fifth, we particularly welcome the Bright Tomorrow Lighting Prize competition and provision, in section 103, to establish a competitive performance-based prize for new LED lighting and for the Federal Government to be early adopters of this technology through purchasing guidelines.

Finally, Mr. Chairman and members of the committee, I'd like to close by noting that one of the barriers to wider deployment and use of energy efficient products and technologies are initial cost concerns. This applies both in the residential and the commercial industrial markets. Congress provided for certain tax incentives, like the commercial buildings tax deduction, in the Energy Policy Act of 2005, but most of those incentives expire at the end of 2008, and some in 2007. Renovation and retrofitting existing homes and buildings with today's technologies, and building in energy efficiency in the initial construction of new homes and buildings, lock these energy savings in and provide performance, going forward. Tax incentives, such as credits, deductions, and accelerated depreciation, are powerful tools to make this happen, and go hand in hand with the significant energy efficiency promotion provisions contained in this bill.

Mr. Chairman, thank you for your steadfast leadership and support on energy efficiency, and we'd welcome any comments.

[The prepared statement of Mr. Pitsor follows:]

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

Chairman Bingaman, Ranking Member Domenici, and Members of the Committee, on behalf of the National Electrical Manufacturers Association (NEMA), I am Kyle Pitsor, NEMA vice president of government relations. NEMA is the trade association of choice for the electrical manufacturing industry. Founded in 1926 and headquartered near Washington, D.C., its approximately 450 member companies manufacture products used in the generation, transmission and distribution, control, and end-use of electricity. These products are used in utility, medical imaging, industrial, commercial, institutional, and residential applications. Domestic production of electrical products sold worldwide exceeds \$120 billion. In addition to its headquarters in Rosslyn, Virginia, NEMA also has offices in Beijing, Sao Paulo, and Mexico City.

I am pleased to be here today to present our Association's views on this important energy efficiency bill, and to offer our industry's continuing support in advancing energy efficiency in the marketplace.

The electrical manufacturing community stands at the very heart of our national effort to achieve a reduced dependence on fossil fuels, a cleaner environment, and a higher standard of living across the globe. Energy efficient technologies exist, and

NEMA companies are actively engaged in the research, development, manufacturing and promotion of them. What we all must strive for is wider recognition, deployment, and use of today's state-of-the-art products and technologies, and support for emerging technologies. It is for these reasons that NEMA is very pleased to testify today on S. 1115 and provisions which, we believe, will significantly improve efficiency in buildings, homes, and products while reducing our nation's use of fossil fuels and saving consumers money.

We would like comment on several titles and provisions in the bill.

#### PROMOTING LIGHTING TECHNOLOGIES (TITLE I)

As the largest user of energy in the Nation, the federal government must set the example of energy efficiency in its facilities and buildings through procurement and building standards. The Energy Policy Act of 2005 calls for federal purchasing of Energy Star® and Federal Energy Management Program (FEMP) designated products. Section 101 in the bill strengthens the procurement provision through the establishment of purchasing guidelines with a date certain for all general-purpose lighting. We fully endorse this Section.

We are pleased that negotiated consensus standards for certain incandescent reflector lamps have been included in Section 102. These consensus standards are the result of our industry working with non-governmental and stakeholder organizations to arrive at definitions and standards that will further strengthen the national energy conservation standards program. These certain lamps, typically used in residential downlights (recessed can fixtures), are presently not subject to federal energy efficiency standards initially established by the Energy Policy Act of 1992. Due to technology and market changes, the time has come to federally regulate the products described in Section 102.

The Bright Tomorrow Lighting Prize (Section 103) offers a challenging and exciting opportunity for advancing the commercialization of new solid-state lighting products for the general market. We support the use of Section 1008 of EPACT 2005 for this competitive, technology-driven prize for new LED lights that can retrofit into existing medium-screw base sockets. Further, we endorse the proposal's direction that federal purchase guidelines are to be developed based on awards under the challenge. Again, federal government leadership in purchasing and using new lighting technologies is important to the marketplace. The Next Generation Lighting Industry Alliance (administered by NEMA) is the designated industry partner per EPACT Section 912 to the Department of Energy's Solid State Lighting R&D program. The Alliance views Section 103 as a complementary market deployment with respect to the DOE SSL program. The results of the past few years suggest that there are no fundamental reasons why solid-state lighting light sources cannot achieve efficiencies of 10-12 times that of today's inefficient incandescent lamp, and 2 times that of fluorescent technologies.

The bill contains a Sense of the Senate provision (Section 104) concerning new energy efficiency standards for lighting products. Lighting use in the U.S. consumes some 20-22 percent of all electricity generated. Thirty percent of the energy consumed in an office building is used for lighting, and 5-10% of residential energy use is for lighting. There is an array of lamp (light bulb) technologies—incandescent (including halogen), fluorescent, high intensity discharge, and solid state.

I am pleased to report that on April 3, 2007, the member companies of the NEMA Lamp Section announced a joint industry commitment to support public policies that will transform the U.S. market to more energy-efficient lighting within a decade. This joint position came about in response to a growing number of proposals at the international, state and local levels that would eliminate the presence of certain general-service incandescent lamps in the marketplace.

NEMA views such a market transformation as a matter of national importance that should come about through a federal solution in order to avoid confusion in the marketplace. Central to this commitment is the setting of standards that will eliminate the least efficient products from the market, based on the following six principles:

- The market transformation must be orderly and target as a starting point the least efficient medium screw base A-line incandescent lamps from 40 through 100 watts in widespread use today.
- Performance standards must be used to accomplish the transformation.
- Performance standards must be technology-neutral.
- The market transformation will take up to a decade.
- The set of A-line incandescent lamps to be addressed includes clear, frost, soft white and enhanced spectrum. Performance standards will be needed for each of these types.

- The market transformation should begin with strategies that will save the most energy.

We note that in the absence of a federal solution, states and localities should follow these principles when deliberating on this matter.

Prior to the April 3 announcement and subsequent to it, NEMA lamp members have been engaged in a series of negotiations with non-governmental organizations (NGOs), environmental advocacy groups, state government representatives, and industry organizations with an aim to develop a standards consensus proposal for submittal to this Committee and Congress. Those negotiations are on-going at the time of preparing this testimony, and we will report to the Committee on their status.

#### EXPEDITING NEW ENERGY EFFICIENCY STANDARDS (TITLE II)

NEMA supports a robust national energy conservation standards program under the Energy Policy and Conservation Act (EPCA) as amended. We believe that a strong national program of standards, test procedures and labeling/information disclosure is the most effective means to maximize energy savings for the Nation and the consuming public. Products are manufactured and distributed on a national (and sometimes global) basis, and it is key that energy conservation product regulation occur at the federal level.

The bill provides in the Section 204 amendment to EPCA to provide the Secretary of Energy the authority to conduct an expedited rulemaking based on an energy conservation standard or test procedure if submitted as a "consensus proposal". The benefits of accelerating adoption of consensus proposals benefit the Nation when more efficient, competitive products enter the marketplace at an earlier date than would otherwise be the case if handled in the regular DOE rulemaking proceedings. In addition, manufacturers benefit by improvement in their planning processes occasioned by the increased certainty of earlier finalization of consensus standards. Finally, federal regulators and all stakeholders would benefit from reduced burdens of paperwork, unnecessary rounds of otherwise mandated process and procedures, and legal costs. NEMA supports an "expedited rulemaking" authority and commends the Committee for including this meaningful modification to the statute. We do recommend changing the term from "joint comment" to "joint petition" to clarify that the consensus proposal does not have to be submitted only during the time period for which DOE has an open rulemaking for the product(s) addressed in the consensus proposal.

The bill contains several important consensus proposals and technical corrections for legislative enactment. As the association that represents the manufacturers of lighting and motors products, NEMA is pleased to have worked with various stakeholders to develop these consensus standards proposals. As noted earlier, Section 102 would add certain incandescent reflector lamps to federal energy regulation. Technical corrections (Section 208) include one for the color rendering index (CRI) for certain fluorescent lamps, and we also have submitted a definitional clarification regarding mercury vapor ballasts which we hope the Committee will include in the bill as it proceeds to mark-up. Both of these are consensus proposals involving the manufacturers and NGOs.

Mr. Chairman, I am very pleased to note that Section 209 provides for legislative enactment of new and expanded efficiency standards for industrial electric motors. Electric motors consume 65-70% of the electrical energy used in commercial and industrial motor-driven systems, like pumps, fans, and compressors. As a consequence, increases in motor efficiency translate to significant energy savings for industrial and manufacturing facilities. We estimate the savings attributable to these joint recommendations to be 8 billion kilowatt hours by 2030, with a net energy savings to consumers of almost \$500 million.

NEMA developed the first standard and levels for an "energy efficient" electric motor in 1987, which were included in the Energy Policy Act of 1992. In 2003, NEMA established new "premium efficiency" motor levels and has undertaken a significant marketing and promotion effort for NEMA Premium®. Section 209 includes important expansion of electric motors that will be subject to federal efficiency requirements, including adoption of premium efficiency for the bulk of the 1-200 horsepower general-purpose motors.

One aspect of the bill (Section 205 "Preemption Limitations") as introduced, however, would materially change a significant and longstanding principle in federal preemption for overseeing energy efficiency standards, and we believe represents an open and irreconcilable conflict with other provisions and policies of the Energy Policy Conservation Act, as amended.

As such, NEMA cannot support this provision as drafted, and we would like to work with the Committee and staff to address concerns that brought about this pro-

vision, and seek to find alternative solutions. If unchanged, the provision weakens rather than improves the “comprehensive national energy policy” enacted by Congress in 1975 to implement EPCA (S. Conf. Rep. No. 94-516 at 116 (1975)).

The twin cornerstones of this comprehensive national policy are (1) the establishment of national standards for energy efficiency, testing and information disclosure for “covered products,” and (2) express Federal preemption of State laws and regulations respecting energy efficiency standards, testing, and information disclosure for those covered products. The exceptions to Federal preemption were intentionally narrow: State petitions for waivers required that States show there were “unusual and compelling State and local interests” that were “substantially different in nature and magnitude from those of the Nation generally, so that achieving the waiver would be difficult. State procurement standards would be permitted; and a narrowly drawn exception for State and local building codes must meet seven requirements.

For many covered products, Federal standards have been established by Congress in the various acts; in the case of other covered products, Congress has delegated to the Department of Energy and the Federal Trade Commission the authority to determine uniform national standards and policy. In both cases, conscious decisions are made to exclude from regulation a subset of the covered products because the expected energy savings is small compared to the burden of achieving that savings. For example, in 1992, when Congress enacted energy efficiency standards for electric motors, it specifically excluded from regulation certain definite purpose and special purpose motors. At the same time, Congress excluded from regulation certain “special applications” of general service fluorescent lamps and general service incandescent lamps, and delegated to the Secretary of Energy the authority to further determine by rule that standards “would not result in significant energy savings because such lamp is designed for special applications or has special characteristics not available in reasonably suitable lamp types.”

Proposed Section 205 establishing certain limitations on preemption where the product is excluded or not directly affected by a Federal standard would radically flip the carefully constructed “comprehensive national policy” underlying the Energy Policy and Conservation Act and permit States to regulate, for example, where Congress or the Secretary of Energy have declared that there shall be no regulation because regulation will not result in significant energy savings or substitutes are not available. It would allow States to regulate after the Secretary of Energy, in the course of a rulemaking to prescribe standards for new covered products or in any amended standards, has evaluated the projected amount of energy savings, technical feasibility of a standard, economic impact on manufacturers, the decline in the performance of products, and any lessening of competition, and other factors has determined that a subset of a covered product should be excluded from regulation.

When a State or an interested citizen believes that the exclusions from federal regulation should be revisited, Congress should insist, as it always has, that the interested parties bring the policy debate on this important Federal question to Congress or the Secretary of Energy. If enacted, Section 205 would open a wide door to the development of “a patchwork of numerous conflicting State requirements,” H.R. Rep. No. 100-11 at 19 (1987), that Congress has always eschewed. Section 205 is in direct conflict with the preemption provisions in the Energy Policy Conservation Act, as amended, at 42 U.S.C. § 6297(d) relating to waiver because it allows States to regulate covered products without any consideration of the national interest. Section 205 conflicts with the central premise and purpose of the Act that energy efficiency is a national issue that requires a national solution.

#### SETTING ENERGY EFFICIENCY GOALS (TITLE IV)

The bill calls for the development of a strategic plan for national goals for energy savings in the transportation sector, particularly the reduction of gasoline usage. The deployment of intelligent transportation systems (ITS), technologies, and communication protocols on and by our Nation’s highways and intersections offers a significant opportunity to reduce traffic congestion, idling, and delays for the commuting public and the delivery of goods and services.

The CHAIRMAN. Well, thank you all very much for your testimony. I think it’s been very useful. Let me ask just a few questions, and call on my colleagues to ask whatever questions they have.

First, Mayor Chavez, again, thank you for being here, and for your leadership on this set of issues. On these grants that we are providing, or calling for, here in the legislation, what’s your reac-

tion to us considering putting some more specific criteria in for what the grant funds could be used for? Be a little more specific. It seems the language we've got in here now is pretty general. Do you have any thoughts on that?

Mr. CHAVEZ. Well, Mr. Chairman, there are some proven modalities, in terms of reducing greenhouse emissions. Methane capture is extraordinarily productive. That's one of the principle things that we did in Albuquerque that led us to such a low level of carbon emission, at least as a municipality. We now capture our methane. We used power generators, and we believe, shortly, we'll be selling electricity back into the grid. So, my recommendation would be that you look at the technologies and modalities that are most effective, and emphasize those, with some degree of specificity, leaving some room, as well, for creativity at the local level, because I think some new ideas may percolate up to the top.

The CHAIRMAN. All right, good.

Commissioner Kerr, let me ask you, on this energy efficiency resource standard which is being discussed, I know some States have adopted that, or some version of that. We have various people—Mr. Prindle and others—urging that the Congress step in and direct, essentially, that all utilities have to meet an energy efficiency resource standard, the concern being that if we don't do it at the national level, States will not get around to it, or will basically continue to talk about it, and for a very long period of time, when it could be implemented. What's your reaction to that? Is there a way that we can cause State utility regulatory commissions to do this, short of just doing it ourselves?

Mr. KERR. You didn't quite ask the question I thought you were going to ask, but I had an answer.

[Laughter.]

The CHAIRMAN. Well, you go ahead and answer the question you wanted me to ask, if you'd rather.

[Laughter.]

Mr. KERR. I think it's very complicated, on both the renewable portfolio standard and an efficiency standard—a national approach is very difficult. There are unique aspects, not just regional, but system-specific aspects, and I think it is not the right idea for the Federal Government to become too prescriptive in that area.

The characteristic of the local demand—and it is really a State-level responsibility and matter of engineering fact as to how that is best met. So, I think it would be problematic for the Federal Government to become too prescriptive.

My suggestion would be something such as you have attempted to do in this bill with respect to integrated resource planning and with respect to rate design issues, two areas clearly and historically State areas, but to try to represent the policy, or to articulate the consideration of the policy goal in that area. I believe that there is momentum at the State level to look at these issues. I tried to highlight that in my testimony. I gave you one example, but we can certainly provide this information and give you some updated information what is going on in the various State levels.

But I think it is very problematic for the Federal Government to weigh in, in such a prescriptive manner, for reasons of legal juris-

diction, to not having the ability to be as sensitive to the specific characteristics of the situation in any given—

The CHAIRMAN [continuing]. Well, obviously, you're aware of the concern—the competing forces that we have on us. I mean, on the one side, we've got people saying, "Greenhouse gases are about to ruin the planet," and, on the other hand, we've got State regulatory commissions saying, "Now, this has traditionally been our job, so don't get involved. We don't want you being prescriptive." We don't want to be too prescriptive, but we do want to be prescriptive enough. So—

Mr. KERR. Well, and I think the answer to that, Senator, is that the proof is in the pudding. I mean, if we collectively, through our efforts and the Federal efforts, aren't making the progress we need to make, then perhaps we've lost the opportunity to complain about the Federal Government becoming too prescriptive. I think we all are playing catch-up, to some extent, with respect to climate policy. So, I think to go too far too fast—if we got down the road in 4 or 5 years, and efforts weren't being made—

But I will give you an example, in terms of why I think it is troubling—very quickly. We, in North Carolina, have a unique load. We have a broad summer peak because of the characteristics of air-conditioning and our large manufacturing sector, and that is a load that is most cost-effectively serviced principally through baseload generation, and we don't have a real spiky peak that can be effectively managed through a lot of energy efficiency. It doesn't mean that it isn't an answer that we need to explore and work on, but our peak is, for instance, very different than Florida's peak, because of their use of strip heating. My point is, it is a technically difficult thing to do in a very broad sense. What I would like for us to do, and the challenge that I think you've put before us, is to assure you and the other members of Congress that we take as seriously as you do both the climate policy issue, as well as the importance of issues like efficiency. I hope I've demonstrated that through our testimony, and we certainly will accept that challenge if you'll allow us the opportunity to work on it ourselves.

The CHAIRMAN. All right.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

I appreciate the testimony of all of you. It was very interesting.

I want to go back to what I was discussing with the Secretary, and that's the issue of the Federal pre-emption and national standard versus regional standard. Coming from the State of Alaska, I have a very keen interest in making sure that the furnaces that we've got in our homes have an efficiency level and meet a standard that perhaps you don't have down there in Albuquerque, Mr. Mayor. So, I guess I'm looking at this from the perspective of—regional standards appear to make a fair amount of sense, for instance, in your northern States, your southern States. But we don't want to lose the cost efficiencies that are gained that you have in meeting one national standard as a manufacturer. So, I guess the question that I'd throw out—and I'll let anybody jump in here, and maybe we'll start with you, Mr. Schjerven—is it possible to have regional standards that still address northern-climate/southern-climate issues and maintain certain cost efficiencies? Or do you think

that it is not physically possible once you leave a one-size-fits-all standard?

Mr. SCHJERVEN. Well, Senator, let me couch my answer in these terms. First of all, our industry has stepped up to the plate on every front that we have products, and we have very good technology, and we consistently push the envelop in high efficiency. Those products are certainly available today, and are being purchased today.

When you think of the nuts-and-bolts issues that might drive cost with respect to regional standards, it comes in a couple of different places. First of all, you see the deployment of inventory then becomes a bit of an issue, particularly when you are in your peak season, where you've got perhaps less—throughout the entire industry, you've got less product in the overall pipeline. Restricting product for use in different categories or different regions certainly exacerbates that problem. It's not just a manufacturing problem, it would be a problem, for example, for many of the large wholesalers that are out there who serve contractors in multiple States. Those that would be close to the demarcation point between one region or another would be faced with a considerable issue, a considerable problem. There would be costs associated with that, and that's fairly clear. We see that modeled, in a small way, again, during peak seasons, when you see all manufacturers struggling to be sure that they've got enough of the product that they need in the locales that are needing it, because certain types of products are more in vogue in certain parts of the country than others.

Senator MURKOWSKI. So, is there any way to get around this? Any of the others? Commissioner, you mentioned that perhaps the Federal standard being the floor that is set, and then States can add on. Now, I'm trying to understand if we can still have the efficiencies—the cost efficiencies that you're speaking to, Mr. Schjerven, and yet still allow for some kind of regional standard. I think you said it, Mr. Mayor, you said that the standards there are very local.

Mr. SCHJERVEN. I think—

Senator MURKOWSKI. How do we bridge this?

Mr. SCHJERVEN. If I might add one more thing. What the industry has seen over the past several years is a steady increase in the percentage of higher-efficiency products—again, you can look at air-conditioning, or you can look at furnaces, as well—as more and more education takes root and goes across the kitchen tables, we say, when the contractor is actually talking with the homeowner, who is making the decision about what products they're going to put in their home for replacement. We are seeing—and very noticeable—and percentage, in terms of double-digit, if you will, year-over-year increase in the rate at which people are opting for the higher-efficiency product, higher than what the current standard would be. So, I think that bodes well, first of all, for two things: for the future, as well as the efficacy of the education program that the industry has undertaken, and continues to undertake, to educate consumers and you get the pull-through.

Speaking specifically with respect to furnaces, one of the major cost issues that are associated with this for the consumer is the cost of installation of the higher-efficiency furnaces. Once you pass

the point where you have what we call condensing furnaces, the installation costs are increased by quite a bit, as you need to dispose of condensate and do other things with venting of the combustion products. So, for that reason, the consumer, when they go to the higher-efficiency tier of products, it's not just the quality of the product themselves, which, because of those components, as well as materials, that are used, are higher in cost, somewhat. But the installation costs are significant, the delta—

Senator MURKOWSKI. But then, that gets to the concern that you raised in your testimony, that the higher cost of the new appliances will deter people from purchasing them in the first place, which cycles back to, we don't purchase, we don't move forward with the energy-efficient appliances.

Mr. SCHJERVEN. It's a very good point. In the case of the furnaces, I think what's really important to look at is, homeowners that are replacing furnaces are typically replacing furnaces that have been in their home for 15 or 20 years, perhaps longer. These furnaces, in terms of efficiency, are much lower than the furnaces that we currently see at the 7 percent level, for example. So, even if they were to opt and make the decision, then, to go with the lower of the higher-efficiency-category products, having that choice, make that economic choice would take out of service the vastly inefficient furnaces that were produced yesteryear, you know, 20 more years ago.

So, in fact, we do get what we want to get, I think, in terms of the society, as people upgraded to higher-efficiency furnaces, but, still, the market forces are allowed to work, at that point in time, and they can decide what they want to do.

Senator MURKOWSKI. Mr. Chairman, my time is out. I think we've still got some really difficult issues to work out between how we move to a regional standard, or if we can move to a regional standard. But if somebody else wants not pick that up, that would be great.

The CHAIRMAN. Thank you very much.

Senator Sanders.

Senator SANDERS. Thank you, Mr. Chairman.

Again, thank you all very much for being with us today.

Let me just begin with Mayor Chavez. Thank you very much for being here. Congratulations for all of the very exciting work that you're doing in Albuquerque. I am of the belief that we are on the cusp of some very radical changes in energy efficiency, that we can make some major breakthroughs. We're seeing cities and towns all over the State of Vermont taking some giant steps forward.

I believe, as a former mayor, that, in fact, in our Federalist form of government, that cities and towns and States can play huge roles. That's why I've been very active in supporting the Energy Environmental Block Grant.

Mr. Mayor, why don't you give us some ideas regarding what you think the impact of an Energy Environmental Block Grant will mean to the States, cities, and towns all over America, and moving forward in energy efficiency, sustainable energy, and so forth.

Mr. CHAVEZ. Well, Mr. Chairman, Senator, thank you for the question. Obviously, the goal is the containment of carbon emissions, and so you have to go to the source of those emissions. It cer-

tainly would be worthwhile to have a single farm in northern Iowa be energy efficient. But if you really want to maximize the initiative, you need to go, really, where the population centers are, and that's what I believe these block grants to do, is, they go to the populations at the right level, and then above.

The development of baselines for each of these communities is extraordinarily important, as I said in my direct testimony, so that you can monitor, measure the progress made against carbon emissions, and then you can just—you can tick off the different modalities, whether it's fleet conversion—one of the most important of—

Senator SANDERS. Let me ask you a simple question. If Albuquerque had a few million dollars coming in from the Federal Government, what would that mean to your community? What would you be able to do?

Mr. CHAVEZ. Mr. Chairman, Senator, we would complete the capture of methane from our landfills. That's the single biggest thing that I think every urban—

Senator SANDERS. Now, in Vermont, what we're doing—we have a huge landfill near the Canadian border—we are providing electricity to 5,000 homes from the methane we're capturing. Is that what you're talking about?

Mr. CHAVEZ. Absolutely.

Senator SANDERS. Okay. You need some resources, to do that.

Mr. CHAVEZ. Absolutely. Many of these investments, we know that there's a tremendous business financial model for them, but it's the up-front—the investment that is very difficult for the local government.

Senator SANDERS. Now, I noticed in your remarks that 15 percent of the power used by the municipal government comes from wind. Do you see potential for wind and for solar paneling? Do you, in New Mexico, perhaps, or in Albuquerque?

Mr. CHAVEZ. Mr. Chairman, Senator, we are blessed with a lot of sun in New Mexico, and, unfortunately, this time of year, a lot of wind. I would be remiss if I didn't mention, as well, at least speaking on behalf of the National Conference of Mayors, that we've taken the position that nuclear ought to be on the table. It's not my personal belief, but that is the position of the Conference of Mayors. In fact, Albuquerque's energy portfolio is about 30 percent alternative—15 percent wind, 15 percent nuclear.

Senator SANDERS. But do you see substantial possibilities for wind and solar?

Mr. CHAVEZ. Mr. Chairman, Senator, there's no doubt that coal is going to be with us for a long time, more efficient ways of extraction of energy from coal, but I don't see any reason why we can't set a goal, move toward it, and use the—whether it's—

Senator SANDERS. I mean, California is talking about installing 1 million solar units in the next 10 years. Is that a model that you think that the rest of the country could look at?

Mr. CHAVEZ. Mr. Chairman, Senator, yes. Then, hydrogen absolutely needs to be in the conversation.

Senator SANDERS. Okay. Okay.

Mr. Kerr, if I might ask you a question, there is always—seemingly at least—a conflict, in terms of energy efficiency and a utility. Utilities make their money by selling a product, and we're saying,

“We want you to sell less of that product,” which seems to be a bit of a contradiction. I know that in Vermont, what ended up happening, with the exception of the city where I used to be the mayor, where we’re doing a very strong job in energy efficiency, the legislature ended up saying that we wanted another agency to be working on energy efficiency, because they thought there was just too much of a conflict between the utilities and the goal of energy efficiency. What do you think about that?

Mr. KERR. I think that it’s a complicated question, because there are several different elements of it. First, under most State laws that franchise these electric utilities, there is some element of running an efficient operation. In other words, there is some inherent, in just your basic franchise, obligation to include efficiency, if it’s a most reasonably cost resource. That said, traditional ratemaking has tended to be volumetric; in other words, the customers generally don’t like fixed facility fees—your monthly \$15 to cover some of the fixed cost of having the service available. Therefore, rates have been fairly volumetric; and so, a large part of the fixed cost and profit are tied to sales volumes. That’s the disincentive that you see, or that is argued exists, and I think it’s probably true, but there are other aspects of that. The utilities earn on their rate base; and so, they are often more incented in their earnings—from an earnings perspective, to invest in plants in the ground than negawatts—

Senator SANDERS. Let me just ask you this, and my time is expired. To your knowledge—you, obviously, are familiar with many utilities in North Carolina and around the country. How many of them are aggressively, for example, trying to replace incandescent light bulbs with compact fluorescents? Is this something that many utilities are doing?

Mr. KERR. I don’t know the answer to that. I would say that Duke Energy, in North Carolina, its chairman/CEO, Jim Rogers, has been a national leader in trying to elevate the discussion on efficiency as a fifth fuel in the utility portfolio. So—

Senator SANDERS. But you’re not aware of—I mean, see, we talk about low-hanging fruits.

Mr. KERR. Yes.

Senator SANDERS. This is pretty low-hanging.

Mr. KERR. I think that there are—I don’t know of the specific programs. We certainly can try to get that information to you Senator.

Senator SANDERS. Okay. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Lincoln.

Senator LINCOLN. Thank you, Mr. Chairman. Thank you so much for your leadership in this hearing today. I think it’s been most helpful. We all seem to get excited about the opportunities and the possibilities of what we can do about taking care of this wonderful planet we’ve been blessed with, and the environment, and a whole host of things, but we also sometimes forget to realize that the most immediate impact we can make is the conservation.

I’m reminded often, because I have twin boys that are 10 years old, and trying to get them to turn the switch off—their light off

in their room when they just leave the room seems monumental at this point. But we're getting there.

So, I'm pleased that we're having this hearing, and certainly grateful to all of you all here at the panel.

I just had three questions, Mr. Chairman. I hope I get to all of them.

I've certainly been a long supporter of programs that increase energy efficiency of appliances, and have many of your members in my State—Whirlpool, as well as Emerson Electric and Baldor—a whole host of different manufacturing. One that we are particularly proud of is our Lennox facility, and it's located in Arkansas, and we have been so excited about some of the great work that they've been doing, particularly with another one of our corporate citizens in Arkansas, and that's Wal-Mart. I took a tour of the facility, where they were going beyond Federal standards on behalf of a customer that had requested that. I guess that I'd like to ask Mr. Schjerven, in terms of that, Wal-Mart, in seeking to achieve greater energy efficiency, came to Lennox for a product, and it was interesting to see the balance, in talking with both the workers and the plant folks, of putting on an additional line that would produce that product. There's a point, a balance, at which industry has to reach, in terms of making sure that it's going to be cost-effective for you, in the long run, to be able to create a new product, go beyond those standards, develop the technology, and yet everybody benefits from that, because as you develop that new technology it becomes apparent in other—you know, other products that you produce for other people because you've developed that technology for one.

I noticed, in your testimony, that you had some serious concerns—and this touches a little bit on what Senator Murkowski was talking about—the concerns in the bill as it relates to regional standards for efficiency. I was fortunate enough to see where the consumer actually drove industry, which I think is the appropriate way for that to happen. But if those regional standards exist, you, all of a sudden, may be required to produce certain products for areas where you may see peaks and valleys, in terms of demand, and what have you.

But I'd just like to hear from you, and any others that would like to comment, about what you believe your industry can, or can't, really certify, in terms of compliance with regional standards, and why you think it is important to centralize those standards. I've seen it from touring your—the plants and realizing how important it is to meet the consumer's needs, and yet not producing something that, again, is going to cause people to use an old appliance, as opposed to a newer standard, which is really going to get us where we're going. But anything you want to comment there would be great.

Mr. SCHJERVEN. Well, thank you, Senator. Thank you for the kind comments about our operation, as well.

The reality of what you saw, the investment that you make in manufacturing facilities is replicated—when you think of regional standards—throughout the distribution organization, whether it's owned by a factory or whether you're talking about the wholesale or distributor level, or even as far as the inventory and

warehousing process that individual contractors go through. So, there is a replication of costs and concern as you look at that.

I guess, from an industry standpoint—and I just really need to be clear on this, because this industry is more than willing, and more than moderately able, to do whatever it takes to go ahead and comply and to reduce the amount of energy that's consumed. When you look at the milestones that we've gone through as an industry, I think that is aptly borne out.

So, it's not a matter of unwillingness, at all; it's a matter of failing to see how some of those aspects in this very complicated legislation really, when the rubber hits the road, can get done, you know, correctly, and done smoothly.

As far as producing high-efficiency products, I think everyone in our industry, from a manufacturing standpoint, is delighted to produce a lot of high-efficiency products, because it represents, in some ways, the pinnacle of the technology, and we're just, you know, really proud to do that. But we also feel that what we've seen in the marketplace is that the consumer is, in most cases, quite able to make that economic decision about what is best for them. We have seen, through education, more and more of these consumers then opt for higher- and higher-efficiency products. In the case of the furnace, it's an interesting dilemma, because our products, unlike other appliances, are not plug-and-play, you might say; rather, the installation process is a significant part of the cost to the consumer, and also a significant part of—or a significant determinant about how well that system operates for the consumer. That being the case, when you look at the high-efficiency—the highest-efficiency products on the furnace side, it drives much—additional complexity, in terms of the installation in the home, as well as it does drive increased cost, because of materials and some components that we use inside. So, it's a very complicated issue to deal with. It doesn't yield the simplistic answers.

I guess just one concern that we, as an industry, have is, we want to see this legislation effected in a way that absolutely does what we want to do for the country, both in the short term and the long term. But, by the same token, we think that's important, on something that is this complex, that we take the appropriate amount of deliberate work with the people sitting around the table who are experts in all of their different areas to drive legislation that really will work, will really get the job done.

Senator LINCOLN. Absolutely.

Mr. SCHJERVEN. Just not seeing—in the case of the pre-emption, if you will, it's just not clear to us how that thing can be effected smoothly. Yes, we are concerned about the consumers, at the end of that, retaining their choice and driving the market forces.

Senator LINCOLN. Well, I appreciate that. I also see it in terms of the effect it may have on your competitiveness, as well, if you're having to meet multiple regional standards, as opposed to a centralized standard. To me, it seems like it would put you at a disadvantage, competitively, internationally, as we see more and more of our technologies and our intellectual properties being lost in other countries, and we'd hate to see that happen.

Mr. Chairman, I just have one more brief question. May I ask it? Great, thanks.

Mr. Prindle, you mentioned electronics. I was sorry that Senator Murkowski left. She has two older boys, and she always prompts me on what I need to be aware of down the road, I guess. This week, however, in elementary school, it is Turn Off Electronics Week. It's not for the sake of conservation. It's their minds that we are asking them to use in different ways—go outside and do some things, as well.

But you mentioned that consumer electronics—we've been visited by a couple of electronics groups up here who are talking about the idea that there is a real opportunity there for conservation, and that perhaps putting competitiveness into their industry, or providing incentives for those electronics industry folks to actually compete with one another in order to be able to reach that. What do you feel like is the best way in the electronics industry, that you can see greater conservation?

Mr. PRINDLE. We think competition would work very well in that circumstance, since what the section calls for is simply some consistent labeling, so the consumers can see, "Oh, this TV is going to use 500 kilowatt hours, this TV will use 300 kilowatt hours. Which one would I rather buy? How much more do I like that high-definition picture than this one compared to the energy cost?" Because right now, you can't tell.

Senator LINCOLN. So, transparency is your—

Mr. PRINDLE. Right. I mean, that was one of the first things Congress did in the 1970's, was simply give consumers labeling information so they can compare products. That's what enables competition to work, when you're competing based on consistent information. So, we need to complete the test procedures, and then we need to get some kind of labeling that allows consumers to make those simple comparisons while they're out shopping. Because what most consumers don't realize is that the biggest TVs out there today consume more energy than a refrigerator.

Senator LINCOLN. That's amazing.

Mr. PRINDLE. They don't get that.

Senator LINCOLN. Yeah. That's great. Well, thanks so much.

Just a compliment to Mayor Chavez. We have two of our larger communities in Arkansas that have been capturing, from landfills, methane gas, and it's been very productive, both in their ability to attract industry in their industrial park, where they can provide a consistent energy source at a lower price, sometimes. But also, just the enthusiasm. I was at one of the dedications, and the enthusiasm of the community to see that there's something productive coming out of that operation, and that there is such great potential there. It's wonderful. So, we appreciate you leading the way on that, and hope you'll keep it up.

So, thanks, Mr. Chairman.

Senator SANDERS [presiding]. Thank you.

Let me just throw out a question or two, and then we'll let you go.

Mr. Schjerven, if I can begin with you, Lennox is in the business of manufacturing products for heating, air-conditioning, and refrigeration markets.

Mr. SCHJERVEN. Yes, sir.

Senator SANDERS. Educate me, please. How close are we, in terms of what people are purchasing today and what you are producing, to the kind of optimum that we could reach in energy efficiency? Do we still have a long way to go, in your judgment? I gather we've made some progress in refrigeration.

Mr. SCHJERVEN. Well, in fact, we've made good progress, I think, not only on the heating side, but certainly on the air-conditioning side—refrigeration, as well. You see—for example, in the case of refrigeration, you see that it's not just in the core technology, it's also in the utilization of control systems that make these devices much smarter and able to go ahead and drive much better efficiency because of it.

In terms of, "How far can you go?" if you look at heating products, and you look at the highest-efficiency products that are marketed today, you're talking efficiencies in the neighborhood of about 94 percent, plus or minus. So, you know, you're very close. There is a gap between those high-efficiency and the other higher-efficiency products, which is the low side, which would be the 78 percent, which is the lowest standard that's out there today. Those are at least double the efficiency—at the low level, have doubled the efficiency of many of the products which are currently installed in people's homes, which have been running for 20, 25, 30 years. So, it's for that reason, and the point that I may have botched a little bit, but the point that I did try to make earlier was that I think the consumer having the choice, even if they're driven because of the economic decision that they think is best for them, in terms of payback, to the lower of the higher-efficiency products, it still represents a quantum improvement, and they would be motivated to go ahead and do that; whereas, if you're looking at only a product offering that is at the highest level of efficiency, that might drive a different economic decision to go ahead and repair, in which case, they would continue to run that older, much lower—

Senator SANDERS. Let me ask you this.

Mr. SCHJERVEN. Sure.

Senator SANDERS. I assume that, in most cases, the higher-efficiency product is more expensive. Is that a fair assumption?

Mr. SCHJERVEN. Yes, not only to purchase, but also to install—

Senator SANDERS. Right.

Mr. SCHJERVEN [continuing]. Correct.

Senator SANDERS. In your judgment, what role could Federal tax credits or Federal financial incentives provide—and help the consumer? Is that a significant—

Mr. SCHJERVEN. I think that's a very good question. I think it could be. In fact, if you look—not just on furnaces, but if you look over the spectrum of equipment over the last 20 years, we've certainly seen programs at different levels, whether it was with respect to tax provision or, in the case of utilities, driving, you know, the purchase of a higher-efficiency product through rebates of some sort. In all those cases, that creates much larger interest in the minds of the people. Of course, it reduces the number of years for payback, and makes what might have been an unthinkable decision—

Senator SANDERS. Well, I am impressed—I don't know if any of you are familiar with it—and if you are, you can jump right up—

in California, as best as I can understand—which is leading the country in this way—if you put solar paneling on, you’re going to get a rebate of about \$10,000 to cover whatever it costs, maybe one-third of the whole product. I mean, that’s a very significant rebate.

Mr. SCHJERVEN. Certainly would be.

Senator SANDERS. Do you think, if some of us—not everybody—thinks that global warming is a huge problem, and that this country has got to address it in a very bold way, and that it really is not acceptable that we continue to have huge amounts of inefficient products causing greenhouse gas emissions, do you think that the Federal Government should be active—more active, perhaps—in terms of incentives and tax credits to help people who don’t have the money to purchase—

Mr. SCHJERVEN. Yeah, I certainly think that that could be a possibility. But, you know, there’s other incentives, as well that work. I had mentioned education before, but one program that I think has been—not just only for our group of appliances in our particular industry, but for all appliances—has been the ENERGY STAR program that EPS and DOE have put together. We’ve been a large proponent of that. In fact, our company has been an ENERGY STAR partner, 4 out of the last 5 years.

Senator SANDERS. All right, but the beauty of the ENERGY STAR program is transparency, I gather. You know what you’re buying, and you know what you can save, down the pike.

Mr. SCHJERVEN. Right. That’s exactly right.

Senator SANDERS. Right.

Mr. SCHJERVEN. But I think those kind of programs, possibly in conjunction with other programs, such as the possibility that you had mentioned, could definitely drive that breakeven point down, and, you know, make other—still keeping the marketplace working as a marketplace, but driving the end result that we’re all looking for.

Senator SANDERS. Well, I think it’s interesting, because—I think it was Mr. Prindle who made the point, a moment ago, that people who are purchasing these new big televisions are probably not aware, in many cases, that that television is consuming more electricity than their fridge is, right?

Mr. PRINDLE. That’s right.

Senator SANDERS. All right, I asked Mr. Schjerven that question: how do other people feel about the potential to move forward, and the use of tax credits? We are seeing—we do that now. If want to buy an energy efficient car, a hybrid, you’re going to get a tax credit. That’s something that’s going to be discussed in the Finance Committee. Is that important? Is that an important part of a program, do you think?

Yes, Mr. Pitsor.

Mr. PITSOR. Yes, Senator. NEMA has experience with commercial buildings tax deduction, which is a deduction that’s available to commercial building owners for new construction, as well as for renovating and retrofitting existing buildings. We represent the lighting manufacturers. About 2 billion square feet of new construction is built each year, and about 2 billion square feet is renovated each year. We have found that this commercial buildings tax deduction has been very helpful in providing a way for building own-

ers to help offset the cost of doing renovation work, which is—the installed base is where we want to tackle. That’s where the energy-inefficient product is still installed. Getting that out and putting in the new equipment and new technologies, is the hurdle, and we have found that deduction to be helpful. It was only for a short time period, and part of the concern is, it doesn’t provide enough planning for building——

Senator SANDERS. So, you would be supportive of a longer——

Mr. PITSOR. A longer time period. It’s a performance-based standard, so you have to show that you actually are making the effort and that the building is going to meet the new requirements, to qualify for the decision.

Senator SANDERS. Wait, before I get to Mr. Prindle, Mr. Pitsor, you represent light manufacturers?

Mr. PITSOR. Yes.

Senator SANDERS. Let me ask you this: not to put you on the spot here, but one issue that has concerned me as we move toward sustainability and energy efficiency. Some of us would like to see these new products manufactured in the United States of America, new jobs created here. When I look at light bulbs, the new ones especially, I don’t see many of them manufactured in America. Could you tell me about that? Are we planning to manufacture the new energy-efficient light bulbs in America?

Mr. PITSOR. Well, we have a broad range of—you have the incandescent bulb, the inefficient product; you have CFLs, you have the new LED——

Senator SANDERS. Are any CFLs manufactured in the United States——

Mr. PITSOR. By and large, most of those are made overseas, because of the electronics involved in the base and the cost of producing the CFL.

Senator SANDERS. Can’t we figure that out in this country?

Mr. PITSOR. Well, we can figure it out. We did the research and engineering here. But in terms of getting the cost down to a price that the consumers are interested in to replace—there’s a cost-driven basis here.

Senator SANDERS. Well——

Mr. PITSOR. But in the LED area, I think there’s an area where we see a lot of U.S. production in LEDs today, and that’s going to grow, and that is an area where we see a lot of promise.

Senator SANDERS. I spoke, a couple of weeks ago, to a gentleman from Philips. Could you give me an idea when you expect LEDs to be commercially available, you know, for homes and so forth?

Mr. PITSOR. I wish I had that clear crystal ball for that. We’ve seen radical improvements in the technology. Cost is still a problem there, as well as perfecting a white LED, a white-emitting LED. The DOE has an R&D program that our members are very active with, trying to find those breakthroughs.

Senator SANDERS. Do you think 5 years or so?

Mr. PITSOR. Five to 10 years.

Senator SANDERS. Well, that’s a big difference—5 or 10 years is a big difference.

Mr. PITSOR. Right. Then——

Senator SANDERS. But these will be huge breakthroughs, in terms of energy efficiency, won't they?

Mr. PITSOR. Absolutely. And we see niche areas today where these are starting to take place. But, in general lighting, like for lighting of this hearing room, that's down the road.

Senator SANDERS. Okay.

Mr. Prindle, did you want to—

Mr. PRINDLE. Yes, I wanted to reply to your question, Senator, on tax incentives. We certainly support tax incentives, and, with NEMA and others, have supported the EXTEND Act that's currently in the Senate, S. 822. However you have to understand that tax incentives are targeted at the high end of the energy performance market. The tax incentives for new homes, for example, are targeted for homes that are 50 percent better than code. The data that we have, so far, indicates that maybe no more than 8- or 9,000 homes apply for that credit, in 2006, out of more than a million that we built in the United States. We think that's small—helpful, but small-impact. On the other hand, appliance standards cover the entire market. That's why they're important. On that point, most furnaces are specified, not by consumers, but by homebuilders for new homes. Homebuilders have no incentive to specify high-efficiency furnaces.

Senator SANDERS. They could just as soon put in the cheaper model and—

Mr. PRINDLE. Absolutely.

Senator SANDERS [continuing]. Less efficient.

Mr. PRINDLE. So, what you see is the lowest market share for high-efficiency furnaces is in the new construction market. That's why appliance standards and building codes, between them, somehow have to deal with that fundamental market-barrier problem.

Senator SANDERS. Okay.

Yes, Ms. Collier.

Ms. COLLIER. Senator, I would just like to answer that question from the perspective of the Federal Government, and that is that renewable tax incentives, as well as State renewable incentives, are absolutely critical to getting renewables and to ESPCs. So, it's critical that we see those continue so that we can more effectively—

Senator SANDERS. And long term so that there is—

Ms. COLLIER. Yes.

Senator SANDERS [continuing]. Dependability, and all that. Okay.

Mr. KERR. Mr. Chairman, I was just going to add in—

Senator SANDERS. Please.

Mr. KERR [continuing]. Following up on our earlier discussion, where we talked about really eliminating the disincentive, the throughput issue, part of what NARUC is working on, and working with EEI and Consumer Advocates on is—you can eliminate the disincentive, but then it is to create the right positive incentive to make the investments on efficiency, whether it be rebate programs, weatherization, and whatnot. We are working on—and these are complicated issues, but there is—to assure that those moneys are, first of all, recovered. Second, is to look at the appropriate ways to allow those expenditures to be capitalized and earned on, similar to a supply side option, a plant in the ground, try to bring effi-

ciency investments on par with other supply side resources. Then, third, it is to explore appropriate incentives. I believe that section 603 of this bill, dealing with rate design-type issues, is the appropriate way. I mean, these are issues principally of State law. But the point is, to your fundamental point in your question, getting the economics right to incentivize folks to invest in efficiency, as opposed to the other options that might be out there. We're investing a tremendous—

Senator SANDERS. But I'd give you an example of what I mean. I don't know if it's true or not, but I have been told that if, tomorrow, we gave away—every person in America—compact fluorescent light bulbs—we bought 'em, we gave 'em away—America would save money. We would save—obviously, there's a cost, in millions of light bulbs, and, on the other hand, the reduction in electrical use would, long term, save us money. I mean, I think, seated where you are seated today, in previous weeks have been people telling us that this planet faces some very, very dire circumstances if we do not act boldly. We have got to be thinking big-time outside of the box. What we thought about 5 years ago is no longer useful.

So, I think I can speak for the whole committee and—or maybe not, I don't know, but I will—

[Laughter.]

Senator SANDERS [continuing]. In thanking you for being here, for sure, and hoping that we can think boldly in trying to address one of the great crises facing our planet.

Thank you very much for being here.

[Whereupon, at 5:15 p.m., the hearing was adjourned.]



## APPENDIXES

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### APPENDIX I

#### Responses to Additional Questions

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##### RESPONSES OF WILLIAM PRINDLE TO QUESTIONS FROM SENATOR DOMENICI

###### REGIONAL STANDARDS

*Question 1.* ACEEE supports the imposition of regional standards for space heating and cooling products. Would you disagree that the more efficient products are already on the market? What benefits do you see from the use of regional standards? How would you address the issue of enforcement?

Answer. ACEEE supports providing DOE authority to consider regional standards where such standards could result in improved energy and economic benefits. Yes, more efficient products are already on the market, providing a sound basis for stricter energy standards in large regions where they are most cost effective. For example, in northern states, high efficiency natural gas furnaces enjoy between about 30% and 70% market share, depending in part on the extent to which states and utilities have rebated or otherwise promoted the technology. But for large market segments, (e.g. rental housing, new construction) the purchaser remains focused on lowest possible first cost, even when more efficient equipment is very cost effective. Standards are the best way to assure a good level of minimum efficiency appropriate for each region.

ACEEE has estimated that a regional standard for natural gas furnaces set at 90% annual fuel utilization efficiency (AFUE) applied in the northern half of the country would save 1.7 billion therms per year when fully implemented, enough to heat about 3.1 million typical homes. Consumers would save on net about \$8 billion over about 20 years.

State building codes provide a ready enforcement mechanism for regional standards. Two indications of state interest: Three states have already adopted stricter-than-national standards for furnaces and the National Association of State Energy Offices supports the proposal for regional standards. Once DOE sets a regional standard, states can adopt it into their building codes and state appliance standards, taking on the task of enforcement. Manufacturers would assist in enforcement by marking products as appropriate for either the northern or southern region. Manufacturers would continue to certify product performance through their trade associations as they have historically.

###### EXPEDITED RULEMAKING

*Question 2.* ACEEE supports S. 1115's provision to expedite rulemakings for consensus standards and does not support the Department's competing proposal. Please compare the two proposals and explain your position on this issue.

Answer. We are concerned that the Department's proposed language violates precepts of good, open public process because it does not require the Secretary to respond on a public record to comments received in opposition to a purported "consensus" proposal. If the Secretary determines that a comment in opposition to a so-called "consensus proposal" is not "significant and legally relevant," the previously published final rule stands. We think a process that does not require the Department to explain its response to comments on a public record is bad public process.

We have discussed with the Department these concerns and we believe they now understand this problem with their proposed approach. With respect to the approach in the Senate bill, we understand the Department would like to be able to extend the time periods allowed for each step of the expedited process provided for

in the Senate bill. We are not opposed to providing the Department authority to grant itself limited one-time extensions at each step of the process.

#### STANDARDS FOR COMPONENT PARTS

*Question 3.* ACEEE supports the imposition of efficiency standards for component parts—in particular for furnace fans. How much energy savings do you expect from the furnace fan product? Is it appropriate to regulate both the product and the product's component?

Answer. Section 223 of the bill reported by the committee (S. 1321), "Furnace fan rulemaking," carries a misleading title. The underlying law calls for an electricity efficiency performance standard, not a component standard. The bill section, as amended in committee, sets a deadline of 12/31/2014 for DOE to act on the provisions of 325(0)(3)(d), "the Secretary may consider and prescribe energy conservation standards or energy use standards for electricity used for purposes of circulating air through ductwork."

A better section title might be, "Furnace electricity use rulemaking." Electricity use depends on a number of components, including the fan itself, the motor used to drive the fan and controls. Furnace electricity use is an aspect of furnace energy use not addressed by the existing national standard, which only addresses natural gas and oil use.

ACEEE estimates that a national furnace electricity use standard could save more than 13 billion kilowatt hours per year and provide net present value savings to consumers of more than \$4 billion.

#### FTC LABELING

*Question 4.* S. 1115 directs the FTC, in conjunction with other agencies such as DOE, to issue guidelines for Energy Star labeling for consumer electronic products such as televisions and computers. Do you believe there are products currently on the market that will qualify for Energy Star labels?

Answer. We support Section 226 of S. 1321 which would provide for FTC labeling of energy performance of certain electronic products. Energy Star is a voluntary program which enable manufacturers to better market their most efficient products. The FTC labeling program is a mandatory label that provides consumer information on all products, regardless of their efficiency performance. There are currently Energy Star qualified televisions, computers and other electronic products. As a rule, Energy Star is designed to identify the top 25% or so energy efficient products, so, we expect that, when Energy Star qualification levels are revised, it will continue to demarcate existing efficient products.

#### ENERGY EFFICIENT LIGHTING

*Question 5.* The bill contains a Sense of the Senate that Congress should establish performance targets for lighting products. I am interested in the lighting industry's recent commitment to support public policies to transform the U.S. lighting market within the decade. Where is the industry on this effort to phase-out the least efficient incandescent light bulbs?

Answer. We understand the industry is developing and bringing to market incandescent light bulbs featuring efficiency performance better than today's conventional light bulbs, but not nearly as good as compact fluorescent light bulbs or next generation LED lighting. The potential energy and economic savings of this phase out will depend on its timing and making sure it is carefully designed to prevent loopholes for inefficient that might be exploited by low-cost Asian manufacturers.

## APPENDIX II

### Additional Material Submitted for the Record

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#### STATEMENT OF THE AMERICAN GAS ASSOCIATION

##### EXECUTIVE SUMMARY

###### *The American Gas Association*

The American Gas Association represents 200 local energy utility companies that deliver natural gas to more than 64 million homes, businesses and industries throughout the United States. Natural gas meets one-fourth of the United States' energy needs and has historically been the fastest growing major energy source. Adequate supplies of competitively priced natural gas are of critical importance to AGA and its member companies. Similarly, ample supplies of reasonably priced natural gas are of critical importance to the more than sixty million customers that AGA members serve. AGA speaks here for those customers as well as its member companies.

###### *America Should Use Its Cleanest Fuel In The Most Efficient Way Possible*

Natural gas is the cleanest fossil fuel. When combusted it produces less carbon than any other fuel. Importantly, almost all of the natural gas consumed in America is produced in North America. Thus, from the perspective of both its environmental benefits and its contribution to America's energy security, natural gas is nearly the perfect fuel. AGA believes that America should use its cleanest and most friendly fuel in the most efficient way possible.

###### *Increased Natural Gas Prices Burden Consumers and the Economy*

Throughout the 1990's natural gas producers, for a variety of reasons, had significant excess production capacity. As a result, gas prices were consistently in the \$23 range per million British Thermal Units (MMBtu). In the winter of 2000-2001 natural gas prices rose dramatically. Initially, the general belief was that this spike was an aberration and that new exploration and production efforts spurred by these higher prices would bring additional supply online, and prices would fall concomitantly. To the surprise of almost all involved, this did not occur, and, over time, it became clear that in fact the higher prices were the result of a more systemic underlying problem. New producing areas, which in fact hold prolific supplies of natural gas that could meet America's needs for many decades, were unavailable for exploration and production as a result of a number of federal policies. Accordingly, those in the exploration and production business (which AGA does not represent) have had no choice but to focus on mature areas, where even maintaining current levels of natural gas output requires increasing degrees of effort and financial investment.

As this situation developed, it began to become clear that ameliorating high natural gas prices for consumers would require not only efforts aimed at encouraging more natural gas supply but also efforts aimed at increasing the nation's level of energy efficiency. With the supply-demand situation remaining so narrowly in balance, either modest increases in supply or modest decreases in consumption can have a dramatic effect on the prices consumers pay.

Even prior to the dramatic price increases of 2000-2001, natural gas had achieved a remarkable level of efficiency. The average American home today uses 25% less natural gas than it did in 1980. Similar trends have occurred in the commercial and industrial sectors of the customers served by natural gas utilities. Moreover, data recently compiled by AGA reveal that, since the winter of 2000-2001, Americans have reduced their natural gas consumption at even a more accelerated rate.

*Increased Energy Efficiency Will Reduce Prices, Promote Energy Self-Sufficiency, and Address Climate Change*

AGA applauds Senator Bingaman for his leadership in introducing S. 1115. Strides in energy efficiency will produce many benefits for America's consumers. Energy efficiency will assist in taking the demand pressure off natural gas, helping to bring more reasonable energy prices to consumers. Increases in energy efficiency will also assist in moving America toward a goal of energy self-sufficiency. Moreover, a unit of energy not consumed produces zero carbon emissions. With the current interest in greenhouse gas emissions, climate change, and the possibility of limiting the nation's carbon emissions, energy efficiency is now more important than ever.

*AGA Offers the Following Recommendations for Improving S. 1115*

Use Full Fuel-Cycle Analysis In Evaluating Efficiency. AGA believes that the federal government has for years overlooked one of the most productive energy efficiency steps that could be taken—to analyze energy efficiency issues on a “full fuel-cycle” or “total-energy efficiency” basis. In short, America should change its focus from efficiency improvements solely at the point of energy use to look instead at the consumption of energy through the whole energy production and consumption cycle. Such an analysis would ensure that the maximum productive benefit is received from all of our energy resources. A simple example is the water heater. Rather than focusing simply upon the efficiency level of water heaters at the point of energy consumption, the federal government should also consider the fact that an electric water heater uses far more energy than a natural gas water heater. In the case of the electric water heater, large amounts of energy disappear (as much as 70%) in the production and transmission process. In contrast, a natural gas water heater makes productive use of 90% of the energy extracted from the ground. Such energy-efficiency analyses that seek to make the most productive use of all of America's energy resources hold the potential to improve energy efficiency greatly. Moreover, they would also produce improvements in carbon emissions.

*Section 111—Renewable Fuel Standard*

This section should be clarified to ensure that natural gas is not covered as boiler fuel.

*Section 222—Regional Efficiency Standards*

This section should be clarified to ensure that adopting regional energy standards that promote certain kinds of furnaces does not have the unintended consequence of encouraging collateral appliances (such as electric water heaters) that are less efficient on a full-fuel cycle basis. This can occur as a result of installation issues with certain high-efficiency appliances.

*Section 227—Residential Boiler Efficiency Standards*

This provision could prohibit the use of gas pilot lights on certain boilers that are not connected to electrical service (“gravity boilers”). These are relatively small in number, and they should not be subjected to a prohibition.

*Section 273—Utility Energy Efficiency Programs*

AGA supports the provisions of Section 273 concerning gas rate decoupling. It takes no position with regard to the provisions concerning electric rate decoupling.

DISCUSSION

*Natural Gas Prices Will Remain at Today's High Levels Into the Future*

Since the winter of 2000-2001, the natural gas industry has been at a critical crossroads. Natural gas prices were relatively low and very stable for most of the 1980s and 1990s. Wholesale natural gas prices during this period tended to fluctuate around \$23 per MMBtu. Over the course of the past five years, however, natural gas markets have been supply constrained. Even small changes in weather, economic activity, or world energy trends result in significant wholesale natural gas price fluctuations. As a result, the natural gas industry walks a supply tightrope, bringing with it unpleasant and undesirable economic and political consequences—most importantly high prices and higher price volatility. These consequences strain natural gas customers—residential, commercial, industrial, and electricity generators.

As this committee well knows, energy is the lifeblood of our economy. Millions of Americans rely upon natural gas to heat their homes, and high prices are a serious drain on their pocketbooks. Small businesses depend on natural gas for space heating, hot water, cooking, clothes drying, cooling and dehumidification, small-scale

electricity generation and other applications. The impacts of high, volatile natural gas prices on U.S. industries—including plant closings and unemployment—are well documented. The impacts on small businesses may be less obvious but they are no less significant. Directly or indirectly, natural gas is critical to every American.

The consensus of forecasters is that natural gas demand will increase steadily over the next two decades. Furthermore, there is no question that, if the nation should embrace a carbon-control regime of any type, the demand for natural gas will increase even further. The electricity generation market will continue to drive this growth (even more so should we adopt a national climate change policy), as natural gas has been the fuel of choice for over 90 percent of the new generation units constructed over roughly the past decade. In part, the dominance of natural gas in this market is attributable to environmental regulations that promote the clean-burning characteristics of natural gas. The overall growth in gas usage will occur because natural gas is the most environmentally friendly fossil fuel and is an economic, reliable, and homegrown source of energy. Should a climate change program be adopted in the United States, increased demand pressure on natural gas will be unavoidable.

The consensus of forecasters also is that we shall never return to the era of \$2-3 natural gas. The more recent era of \$6-7 natural gas will characterize the years ahead absent aggressive national policy changes to promote the production of large amounts of the prodigious natural gas resources that North America enjoys. In all likelihood adoption of a carbon-control regime will make today's \$6-7 natural gas a thing of the past.

Moreover, recent events show that our gas markets are particularly vulnerable to interruptions, with dire consequences for consumers. In September 2005 multiple hurricanes in the Gulf of Mexico eliminated nearly 25 percent of our total gas supply for a brief period. The hurricanes resulted in prices that fluctuated between \$12.00 and \$14.00 per MMBtu, and a brief cold snap in December 2005 produced a price spike to roughly \$15.00 per MMBtu. Only a substantially warmer than normal 2005-2006 winter heating season has dampened the impact of these price increases to consumers. Clearly, natural gas markets are higher and more volatile than at any point in history. Moreover, there is no sign that this market volatility will abate in the near future.

It is harmful to small businesses, individual families and to the entire U.S. economy for natural gas prices to remain both high and volatile. Unless we make the proper public policy choices—and quickly—we will face many more difficult years with regard to natural gas prices.

This Committee knows well AGA's position with regard to making more natural gas supply available for America's homes, businesses, and industry. The Committee has received AGA's views on this important topic on a number of occasions over the last five years. AGA will continue to pursue additional land access for the environmentally benign production of natural gas.

The goal, of course, is to provide adequate supplies of reasonably priced energy to Americans. Increasing natural gas supply is only one half of that process. Energy efficiency measures is the other half of providing more reasonably priced natural gas.

#### *Increased Enemy Efficiency Can Bring Down The Cost of Natural Gas*

The natural gas industry has been a national leader in energy efficiency. Today, the average American home uses about 25% less natural gas than it did a quarter century ago. That reduction in per-capita natural gas use has been driven primarily by energy efficiency. Homeowners have conserved by adding storm windows, insulation, and weather stripping to their homes. Over the past twenty-five years gas appliances have become enormously more efficient. Moreover, new construction, although producing increasingly larger homes, has also produced increasingly energy-efficient homes. These trends have also been seen in both the commercial and industrial sectors of the industry.

Information very recently compiled by AGA suggests that in fact natural gas consumers have increased their energy efficiency efforts since prices increased dramatically in 2000-2001. Over the past five years, homeowners have reduced their natural gas consumption more than the 1% per year that has been the trend over the last twenty-five years. It is uncertain at this point what the exact slope will be of this reduction curve in the years ahead.

Energy efficiency brings gas consumers benefits in terms of lowering their energy bills as well as lowering their carbon emissions. What consumers do not understand, however, is the impact energy efficiency can have upon natural gas prices. An MMBtu of natural gas that is not consumed is no different from a new MMBtu that is produced. Either adds to the gap between productive capacity and demand. Most commentators recognize that increasing natural gas supply or decreasing natural

gas demand by only several percent can bring natural gas prices down by 10%, 20%, or more. Thus, the customer that becomes more energy efficient not only saves on its energy bill. It also plays a major role in bringing natural gas prices down for all.

*Achieving Real Energy Efficiency Requires Full-Fuel Cycle Analyses*

There are, of course, many ways that energy efficiency in the natural gas industry can be continued and indeed improved. But most significant would be to take a new approach to energy efficiency policy. Energy efficiency, at least so far as it addresses appliances, has focused only upon measuring the level of efficiency at the level of the appliance itself. This is an important measure, but it entirely overlooks the important goal of putting each of America's resources to its highest and best use. In a world where the nation is resource-constrained and where it soon will become carbon-constrained, it is essential that each ounce of productive effort be extracted from the scarce resources that we have.

Federal energy efficiency policies have been crafted with the implicit assumption that reducing energy use at the point of use automatically reduces total energy used as well as emissions. This approach fails to consider how primary energy and electricity are produced and the effects of moving energy over long distances. In truth, this approach runs counter to efforts to reduce greenhouse gases and other air pollutants.

It has been the policy of the United States over the last several decades to support the most efficient use of our natural resources. In the current circumstances of a precarious supply and demand balance, it becomes increasingly imperative for policymakers to look at the full fuel cycle to determine whether the nation is using its natural resources in the most efficient manner possible. Doing so requires that we look at the full fuel cycle when measuring energy usage: determine total energy usage from the point of extraction—whether fossil fuels from the earth or otherwise—through to the ultimate point of usage.

The nation's approach to energy efficiency measures the efficiency of consumer products such as appliances and homes based on examining products that run on different fuels independently from one another. Products powered by electricity are evaluated differently from natural gas-consuming products. It is almost as if we assume that the natural gas and electric appliances perform entirely different functions. No comparison is made as to the relative amounts of total fuel used by the competing products. Yet, if we are truly serious about achieving energy efficiency, the total energy consumption of the two products must be compared. It is not unreasonable in this context to consider that an electric water heater using electricity created with natural gas requires more total fuel than a natural gas water heater that heats the water directly with the fuel. (Similar comparisons apply to other industrial, commercial and residential applications.) If energy policy aims to optimize natural gas usage, and in fact, all natural resource usage—as well it should in today's circumstances—then energy policy must consider the full fuel cycle of all delivered energy.

Changing the way America measures, uses, and accounts for energy will have significant, and positive, implications. These include:

- 1) America will use its natural resources more efficiently. The government should begin measuring the full fuel cycle of energy, thereby considering all primary energy and other uses, whether that energy is, at any point, turned into another energy form.
- 2) It will connect the use of energy with its environmental consequences. Considering equipment separately from the "source-based" energy that fuels it—as the government does now—does not consider the environmental consequences of operating that equipment. An electric water heater, for example, causes almost two more tons of carbon dioxide to be emitted per year than does a natural gas water heater.
- 3) Resource-based energy efficiency will allow consumers to evaluate energy use choices based on the cost, resource usage, and emissions attached to those choices.
- 4) Policies that encourage the best overall use of our natural resources can assist utilities to address line losses and grid congestion during peak demand for electrical energy, particularly during the summer months.
- 5) A resource-based accounting of energy efficiency will spur investments in new technologies that are efficient on a full fuel cycle basis. This runs counter to America's current inclination to squeeze small amounts of efficiency out of technologies as measured at the point of usage.

In the context of this bill, this important step could be achieved by changing the beginning of Section 221 of the bill to state:

Section 321 of the Energy Policy and Conservation Act (42 U.S.C. 6291) is amended by striking paragraphs (4) and (6) and inserting in lieu thereof:

(4) The term “energy use” means:

(A) For the purpose of measuring energy use by a consumer product, the quantity of energy directly consumed by a consumer product at point of use, determined in accordance with test procedures under section 6293 of this title, and

(B) For all other purposes, including, but not limited to, determinations with respect to energy policy, priorities with respect to energy efficiency, efficiency regulations and guidelines, and conservation programs, the quantity of energy consumed by a consumer product, commercial or industrial product or process, or residential or commercial property at point of use and consumed in producing and in delivering energy to a site, including, but not limited to power generation, transmission and distribution losses.

*Section 111—Renewable Fuel Standard*

The renewable fuel standard refers to “boiler fuel”, which appears not to be defined. Arguably this could include natural gas, although AGA thinks that this makes no sense in the context of a renewable fuel standard. In all likelihood this term refers to heavier fuel oils such as No. 6 and Bunker C. This could be clarified by saying “boiler fuel oil.”

*Section 222—Regional Efficiency Standards*

AGA is concerned that the adoption of regional energy efficiency standards can have unintended, adverse consequences. The case in point most specifically is that adoption of a regional furnace standard for a northern zone may make it unavoidable that consumers install condensing furnaces. These must be vented in a specific fashion. In new housing a builder, after having vented a condensing furnace, is unlikely to install the necessary chimney for a gas water heater. The result is that an energy efficiency standard that favors or compel a condensing furnace may have the unintended consequence of causing installation of an electric water heater, which uses more fuel through the full fuel cycle and emits more carbon dioxide than a gas water heater. This issue can be addressed by inserting, beginning at page 67, line 22, the following:

(ii) are economically justified; and

(iii) will not result in undesirable levels of source energy consumption by other equipment, such as water heaters, located at the site of furnaces, boilers, or central and commercial air conditioning equipment. Source energy means the quantity of energy consumed by a consumer product, commercial or industrial product or process, or residential or commercial property at point of use and consumed in producing and in delivering energy to a site, including, but not limited to power generation, transmission and distribution losses.

Additionally, add the following at the end of page 68, line 9:

The Secretary shall in addition consider whether 1 or more regional standards will result in undesirable levels of source energy consumption by other equipment, such as water heaters, located at the site of furnaces, boilers, or central and commercial air conditioning equipment. Source energy means the quantity of energy consumed by a consumer product, commercial or industrial product or process, or residential or commercial property at point of use and consumed in producing and in delivering energy to a site, including, but not limited to power generation, transmission and distribution losses.

*Section 227—Residential Boiler Efficiency Standards*

This provision could have the effect of prohibiting pilot lights for certain types of boilers. There are a relatively small number of boilers that are not connected to electrical service and where, therefore, a pilot light is essential to operation for the boiler. AGA recommends that this problem—as well as a box mysteriously missing an energy efficiency standard—be addressed by:

Modify the table in Sec. 227(3) by adding “98.5%” to “Minimum Annual Fuel Utilization Efficiency” for “Electric Hot Water” and “Electric Steam” boilers.

Modify Sec. 227(3) by adding a subsection (D):

(D) EXCEPTION—Boilers that operate without the need for electricity supply shall not be required to meet the requirements of subsections 227(3)(B) and (C).

*Section 274—Utility Energy Efficiency Programs*

Natural gas utilities are network industries. They typically deliver natural gas from the point where their facilities interconnect with long-line interstate natural gas pipelines to energy consumers—whether they are residential, commercial or industrial. Natural gas utilities essentially provide two different services to their residential customers:

First, natural gas utilities act as merchants in acquiring natural gas for their customers. They aggregate the requirements of all of their customers who desire to purchase natural gas, and they purchase these requirements in various wholesale markets. (In most states industrial customers purchase their own gas. In some states with “retail choice” programs, residential customers also may purchase gas from an entity other than their local utility.) In their “merchant” function natural gas utilities purchase gas in markets that are not unlike markets for oil, corn, Wheat, or other commodities. The natural gas utility merchant function is thoroughly regulated by state public service commissions. Utilities are not permitted to mark up the cost of gas or to make a profit on it. Rather, in most states utilities pass these costs on to customers pursuant to state-regulated revolving accounts usually known as Purchased Gas Adjustments, Gas Cost Recovery factor, or something similar.

Second, natural gas utilities deliver gas to their customers. They perform this service whether they have purchased the gas as merchant on behalf of the customer or the customer has purchased the gas itself. The charge for this delivery service is calculated in an entirely different fashion—and entirely separately from—the charge for purchased gas. It is usually calculated under traditional public utility cost-of-service ratemaking principles. As with the purchase of gas for customers, it is determined under the supervision and regulation of the state public service commission.

The charge for natural gas delivery service has traditionally been determined under a form of ratemaking known as “volumetric” rates. Under this methodology, the costs of operating the natural gas delivery service are estimated for a year and then allocated to the projected volumes of gas that will be delivered over that year. Thus, for each unit of gas delivered by the utility the customer pays a small portion of the cost of operating the utility. Should a utility deliver more gas in a year than projected, it will (all other things being equal) earn more than its projected costs. Should a utility deliver less gas in a year than projected, then it will (all other things being equal) earn less than the projected costs of operating its system.

A short example may make this situation more understandable. Assume that the costs of operating utility delivery service are \$100 per year. This is composed of operations and maintenance expense of \$65, depreciation of assets of \$8, taxes of \$12, and return on invested debt and equity capital of \$15. Assume also that it is projected that the utility will deliver 100 units of gas per year. In this instance, the unit cost of delivering natural gas will be \$1. Should consumers install new energy-efficient appliances during the year such that actual deliveries are 95 units, then the utility receives delivery revenue of \$95. This is less than the actual cost of operating the service. The \$5 shortfall drops straight to the bottom line and represents a diminution in the utility’s return on equity.

This example makes plain that, under a volumetric form of rate design, energy efficiency and energy conservation can be injurious to the shareholders of the natural gas utility, particularly if it turns out to be more significant than projected in the ratemaking process. The consumer has an interest in minimizing its energy bill. The utility has an interest in providing its expected return on capital to its shareholders (who all ultimately are energy consumers as well).

A fundamental, and probably immutable, fact is that natural gas utilities are fixed-cost businesses. The costs of the distribution service that they provide do not vary much in relation to the amount of gas that the utilities’ customers consume.

As noted previously, natural gas consumers have, over the past twenty-five years, reduced their consumption by twenty-five percent, or approximately one percent per year. Over the past five years the most recent data indicate that this trend has accelerated dramatically. Although what the exact trend will be in the future is unclear, there is no indication that the trend of natural gas consumers to conserve will stop.

This fact, that traditional utility rate design may discourage energy efficiency, has been recognized on a number of fronts over the past five or more years. Fortunately, it can be corrected relatively easily. The solution is to decouple (i.e., disconnect) a

utility's revenue stream from the volume of gas actually delivered. This is not by any means a radical or unsound policy. Most of a utility's costs are fixed—that is, they do not vary with the volume of service delivered. Moreover, most utility's systems are sized to be able to meet deliveries on the peak cold day of the winter. From a ratemaking perspective, therefore, it is by no means irrational to suggest that the revenue should be recovered independent of the volume of gas delivered.

This model has almost universally been adopted in the cable television industry. The customer pays the same amount per month regardless of how many different channels are watched or how many hours the cable box is on. Similarly local telephone service is largely recovered through a fixed monthly charge. Both of these industries are similar to natural gas distribution in that they have large capital costs, most of their costs are fixed, and the network system is sized to meet peak demand.

Many states, as well as federal policy makers, now encourage energy efficiency and conservation. Consequently, several states have put in place rate mechanisms that “decouple” the recovery of distribution system delivery costs from the volume of gas delivered to customers. Doing so frees the utility to promote conservation and energy efficiency actively without a detriment to its shareholders.

There are variety of ratemaking devices that can be implemented to achieve decoupling. One is “straight fixed-variable” rate design. Under that approach, all of the costs of operating the utility system are collected in twelve monthly charges. This is the system used by the Federal Energy Regulatory Commission for interstate natural gas pipelines.

Another somewhat different method is weather normalization. This method takes the effects of differing weather (which is perhaps the largest determinant of volumes in the natural gas delivery business) out of the revenue stream. It does not, however, take into account the effects of energy efficiency or conservation. A related approach might be called “efficiency normalization.” Like weather normalization, it takes the effects of efficiency and conservation gains out of the utility's revenue stream. In Oregon, for example, the utility actually compares consumption over time on a customer-by-customer basis to make an adjustment to rates to make the utility whole for the effects of conservation and efficiency.

The essence of revenue decoupling, however, effectuated, is to adjust the actual delivered volumes to the weather-normalized volumes underlying the last rate case of the natural gas utility. When delivered volumes deviate from the level forecasted in the rate case, the true-up mechanism adjusts the distribution charge.

Decoupling is also a fair and efficient means to design utility rates from the customer's perspective. The symmetrical nature of decoupling prevents the utility from increasing its earnings by increasing its delivered volumes because any additional distribution charges collected by the utility in that event are, one way or another, refunded to customers. Moreover, decoupling does not shelter the utility from the impact of increased costs or provide a guarantee that the company will achieve its authorized return on equity. To be clear, decoupling is not “incentive regulation” because there is no reward or bonus for the utility.

An independent evaluation of the Oregon decoupling tariff<sup>1</sup> found the program to be worthwhile and in the public interest. The evaluators found that the mechanism is effective in reducing the variability of utility revenues; removes disincentives to promote energy efficiency; changes the company focus from sales advertising to conservation advertising; does not reduce the incentive for good customer service; and does not shift risk to customers.

At present nine states have adopted some form of revenue decoupling, and a number more are considering it. Decoupling has taken a number of forms in these states, depending upon their individual needs, circumstances, and policies. In some of these states, decoupling is linked to public benefit funding that is aimed directly at energy efficiency.

The beneficial nature of decoupling is not simply a view of AGA and the natural gas utility. AGA and the Natural Resources Defense Council have adopted a joint declaration concerning the value of decoupling. Furthermore, the National Association of Regulatory Utility Commissioners, the trade association of state public service commissioners, has adopted a resolution urging the states to review their practices to determine whether innovative rate designs of this sort can assist in bringing natural gas costs down.

AGA endorses the provisions of Section 273 concerning natural gas and takes no position on the provisions concerning electricity.

<sup>1</sup>A Review of Distribution Margin Normalization as Approved by the Oregon Public Utility Commission for Northwest Natural, Christensen Associates Energy Consulting, LLC, March 2005.

## STATEMENT OF ABB INC.

## ENERGY EFFICIENCY IN THE POWER GRID

The U.S. Department of Energy estimates that increasing energy efficiency could reduce national energy use by 10% or more in 2010, and as much as 20% in 2020, with net economic benefits for consumers and businesses as a result.

The concept of energy efficiency has moved in and out of favor with the public over the years, but recently has gained renewed broad-based support. The confluence of economic, environmental and geopolitical concerns around reducing America's exposure to disruptions in the supply of energy has moved efficiency to the fore. As a result, a number of initiatives are now underway to improve efficiency in a variety of areas, but much more can and should be done.

The U.S. is not alone in these efforts. China presently has ten efficiency programs aimed at bringing the country's energy intensity—the amount of energy used per unit of GDP—in line with rivals such as the U.S. and the European Union. The EU likewise has taken steps to improve energy efficiency in its member countries by 20% over the next fifteen years.

Efficiency is a simple concept which can perhaps best be summed up with the cliché, “doing more with less.” Perhaps the best-known efficiency program among American consumers is the Energy Star program that helps them to identify appliances like dishwashers and refrigerators that use less energy than other similar models. Indeed, the term “efficiency” is typically associated with how energy is consumed at the point of end use, but the concept of efficiency can also be applied to how energy is produced and distributed.

This paper will focus primarily on the electric power system, where most end-use applications outside of transportation and heating get their energy. We will first present a broadly inclusive definition of efficiency and then explore a variety of ways the grid can be made more efficient.

## GENERATION

To gain an appreciation for the impact that improved efficiency can have, it is useful to examine the price we pay for inefficiency, and nowhere is this more apparent than in the generation of electric power. Typically, the process converts the latent energy in a fuel stock (coal, gas, uranium) into mechanical energy in a generator and ultimately electrical energy. However, other generation sources like wind and hydro power use the mechanical energy of moving masses of air or water to produce electric energy. Still other devices, such as fuel cells, use chemical reactions to generate electric energy. In all of these cases, though, some of the input energy is lost in the process.

The efficiency of generation varies widely with the technology used. In a traditional coal plant, for example, only about 30-35% of the energy in the coal ends up as electricity on the other end of the generator. So-called “supercritical” coal plants can reach efficiency levels in the mid-40's, and the latest coal technology, known as integrated gasification combined cycle or IGCC, is capable of efficiency levels above 60%. The most efficient gas-fired generators achieve a similar level of efficiency.

Obviously, though, even at 60% efficiency there is a tremendous amount of energy left behind in the generation process. That represents a higher cost of production for the generator, as well as a substantial waste of limited resources. There is, therefore, tremendous economic and ecological incentive to improve the efficiency of power generation so that more of the energy content of the input fuel is carried through to the output electricity. There are a variety of ways to improve generator efficiency, such as combustion optimization using modern control systems, but for the purposes of this paper we will focus on what happens after the generation process.

## TRANSMISSION AND DISTRIBUTION

Once electric energy is generated, it must be moved to areas where it will be used. This is known as transmission—moving large amounts of power over sometimes very long distances—and is separate from distribution, which refers to the process of delivering electric energy from the high voltage transmission grid to specific locations such as a residential street or commercial park. Distribution is usually considered to encompass the substations and feeder lines that take power from the high voltage grid and progressively step down the voltage, eventually to the 120v level at which power enters our homes.

The transmission and distribution or “T&D” system, then, includes everything between a generation plant and an end-use site. Along the way, some of the energy supplied by the generator is lost due to the resistance of the wires and equipment

that the electricity passes through. Most of this energy is converted to heat. Just how much energy is taken up as losses in the T&D system depends greatly on the physical characteristics of the system in question as well as how it is operated. Generally speaking, T&D losses between 6% and 8% are considered normal.

It is possible to calculate what this means in dollar terms by looking at the difference between the amount of electric energy generated and the amount actually sold at the retail level. According to data from the Energy Information Administration, net generation in the U.S. came to over 3.9 billion megawatt hours (MWh) in 2005 while retail power sales during that year were about 3.6 billion MWh.\* T&D losses amounted to 239 million MWh, or 6.1% of net generation. Multiplying that number by the national average retail price of electricity for 2005, we can estimate those losses came at a cost to the U.S. economy of just under \$19.5 billion.

Congestion charges represent another significant cost of inefficiency in the T&D system, but are only partially determined by the physical characteristics of the grid. Congestion occurs when the scheduled or actual flows of electricity are restricted either by physical capacity constraints on a particular device or by operational safety constraints designed to preserve grid reliability. In order to meet demand, the system operator must find an alternative source of power that avoids the bottleneck. That alternative generator will be less economical, and therefore less efficient from a market perspective. A more robust T&D system, then, can provide a level, congestion-free playing field on which generators can compete.

Congestion is the result of a number of factors, notably a lack of adequate transmission investment and an increase in bulk power transactions in competitive energy markets. Recent figures on congestion at a national level are difficult to ascertain, however the experience of two of the nation's largest power markets will serve to illustrate the scope of the problem.

The California Independent System Operator reported congestion costs of \$1.1 billion in 2004, \$670 million in 2005, and \$476 million in 2006. It's worth noting that the ISO attributes much of the reduction in the '04-'05 period to critical expansions on the state's "Path 15" north-south transmission corridor. Similarly, the PJM interconnection, which serves the largest territory of any regional transmission organization in the U.S., reported congestion costs of \$750 million in 2004, \$2 billion in 2005, and \$1.6 billion in 2006. PJM notes that since 2002, congestion costs have come in at 7-10% of annual total billings.

As these figures make clear, the cost of inefficiency in the T&D system is significant. However, the impact of congestion is not limited to the cost associated with dispatching less economical generation. Often the situation requires grid operators to curtail service to consumers in some areas to protect the integrity of the grid as a whole. These "transmission loading relief" actions (TLRs) have increased dramatically in recent years, up nearly 150% just in the 2001-2005 period.

Clearly too there is an inference to be drawn from these numbers about the relationship between efficiency in the T&D system and the reliability of that system. In every region of the U.S., for example, there are generation plants designated by the local grid operator as "reliability must-run" or RMR. These units are run regardless of their economic merit because their output is needed to maintain voltage levels. RMR units are often older, dirtier and less efficient than modern plants, due to the fact that they tend to be located in urban areas where siting new plants is all but impossible. There are alternatives to RMR generators (i.e., FACTS devices, which are described in a later section), but our current reliance on them can be viewed as a byproduct of a less-than-optimal T&D system.

#### DEMAND-SIDE ENERGY EFFICIENCY

The average person would likely point to energy consumption as the point where "efficiency" measures can be applied, and while our focus here is mainly on the supply side, it's worth noting a few examples to illustrate the impact of demand-side efficiency efforts.

Most people are probably familiar with the Energy Star program mentioned earlier, or with the increasing popularity of compact fluorescent light bulbs that use a fraction of the electricity used in conventional bulbs to produce the same amount of light. But the single largest consumer of electric power is the industrial motor, which is used to run everything from assembly lines to compressors to the fans that blow air into the combustion chamber of a coal-fired generator.

It is estimated that fully 65% of industrial power is used in motors of various sizes, most of which run at full speed whenever they are turned on, even if they don't need to. This is because the vast majority of industrial motors are controlled

\* Graphics in this document have been retained in Committee files.

by drives that cannot alter the speed of the motor. Variable speed drives, also known as variable frequency drives, ramp the motor's speed up or down to meet the requirements at a given moment in time. The resulting energy savings can be enormous. VSDs can reduce consumption by as much as 60%, which in energy-intensive facilities can equate to millions of dollars a year in energy costs.

What's important to note here is the leverage that demand-side efficiency improvements can have when they a) greatly impact a small number of large energy consumers (e.g., VSDs), or b) have a more modest impact that is multiplied across many smaller energy consumers (compact fluorescent bulbs). Obviously, the former case is more easily realized than the latter, if only because there are relatively few people who need to be convinced of the value of the new approach. Consider, then, the potential of measures that enjoy the best of both worlds—a multiplicative effect combined with a small number of decision makers. That, in essence, is the main selling point for supply-side efficiency in the power system, and is where ABB has focused much of its technology and expertise. If a single utility implements a given technology across its entire system, thousands if not millions of customers come along for the ride.

#### IMPROVING EFFICIENCY IN THE T&D SYSTEM

One example of efficiency measures aimed primarily at the utilities that operate the T&D system is an initiative underway at the U.S. Department of Energy to implement new efficiency standards for distribution transformers. These are the grey cylinders you see perched atop utility poles in residential neighborhoods, and the metal-housed units placed on cement pads at ground level. There are over 40 million distribution transformers in service today in the U.S. They are among the most ubiquitous and the most standardized pieces of electrical equipment, and for that reason make a prime target for improvements that can then be propagated across large areas.

The proposed standards will have a relatively modest impact on the efficiency of a given transformer, around 4% over current models. However, when this incremental gain is multiplied across the thousands of units operated by even a small utility, the result is impressive. DoE expects to issue a final rule on the new standard later this year with implementation set for 2010.

There are other initiatives at the distribution level, but if we focus our attention on the measures that have the greatest potential for improving efficiency, we inevitably must look to transmission. There are numerous technologies that are already being applied to boost efficiency in transmission, and still more that have yet to reach full commercial implementation. In the following sections, we explore some of these technologies.

#### *HVDC*

Most of the transmission lines that make up the North American transmission grid are high-voltage alternating current (HVAC) lines. Direct current (DC) transmission offers great advantages over AC, however: 25% lower line losses, two to five times the capacity of an AC line at similar voltage, plus the ability to precisely control the flow of power. Historically, the relatively high cost of HVDC terminal stations relegated the technology to being used only in long-haul applications like the Pacific DC Intertie, which connects the vast hydro power resources of the Columbia River with the population centers of Southern California.

With the advent of a new type of HVDC, invented by ABB and dubbed HVDC Light®, the benefits of DC transmission are now being realized on much shorter distances. The Cross-Sound Cable connecting Long Island and Connecticut is one example of this technology.

#### *FACTS Devices*

A family of power electronics devices known as Flexible AC Transmission Systems, or FACTS, provides a variety of benefits for increasing transmission efficiency. Perhaps the most immediate is their ability to allow existing AC lines to be loaded more heavily without increasing the risk of disturbances on the system. Actual results vary with the characteristics of each installation, but industry experience has shown FACTS devices to enhance transmission capacity by 20-40%. FACTS devices stabilize voltage, and in so doing remove some of the operational safety constraints that prevent operators from loading a given line more heavily. In addition to the efficiency gains, these devices also deliver a clear reliability benefit.

#### *Gas-Insulated Substations*

Most substations occupy large areas of land to accommodate the design requirements of the given facility. However, each time power flows through a substation

to step down the voltage, more energy is lost as the power flows through the transformers, switches and other equipment. The efficiency of the lower-voltage lines coming out of the substation is also markedly lower than their high-voltage counterparts. If power can be transmitted at higher voltage to a substation that is closer to where the energy will be consumed, significant efficiency improvements are possible.

Gas-insulated substations essentially take all of the equipment you would find in an outdoor substation and encapsulate it inside of a metal housing. The air inside is replaced with a special inert gas, which allows all of the components to be placed much closer together without the risk of a flashover. The result is that it is now possible to locate a substation in the basement of a building or other confined space so that the efficiency of high-voltage transmission can be exploited to the fullest extent.

#### *Superconductors*

Superconducting materials at or near liquid nitrogen temperatures have the ability to conduct electricity with near-zero resistance. So-called high temperature superconducting (HTS) cables now under development, which still require some refrigeration, can carry three to five times the power of conventional cables. The losses in HTS cables are also significantly lower than the losses in conventional lines, even when the refrigeration costs are included. A major vendor of superconducting conductors claims that the HTS cable losses are only half a percent (0.5%) of the transmitted power compared to 5-8% for traditional power cables. Superconducting materials can also be used to replace the copper windings of transformers to reduce losses by as much as 70% compared to current designs.

#### *Wide Area Monitoring Systems*

Much of the transmission system could feasibly be operated at a higher loading, were it not for reliability concerns. However, if operators were given the ability to monitor grid conditions more precisely and in real time, some of these constraints would be removed. One example relates to the simple fact that when transmission lines heat up, the metal becomes pliable and the lines sag, which can cause a short circuit if they come into contact with a tree or other grounding object. Wide area monitoring systems (WAMS) have many promising capabilities, one of which is line thermal monitoring. With this functionality, transmission operators could conceivably change the loading of transmission lines more freely by virtue of having a very clear understanding of how close a given line really is to its thermal limits.

#### OTHER PATHS TO IMPROVED EFFICIENCY

The technologies outlined above represent only a few of the many available options for improving energy efficiency in the T&D system. The Business Roundtable's Energy Task Force T&D working Group, which ABB chairs, recently published a list of efficiency-enhancing actions and technologies, some of which include:

- Distributed generation/Microgrids
- Underground distribution lines
- Intelligent grid design (smart grids via automation)
- Reduction of overall T&D transformer MVA
- Energy storage devices
- Three phase design for distribution
- Ground wire loss reduction techniques
- Higher transmission operating voltages
- Voltage optimization through reactive power compensation
- Asset replacement schedule optimization
- Distribution loss reduction via distribution automation
- Power factor improvement
- Load management (e.g., smart metering or price-sensitive load control)
- Power electronic transformers

These options vary in terms of expense and the changes they imply for equipment purchasing or operational practices. We list all of them here simply to illustrate the many ways in which greater energy efficiency in the power grid can be achieved.

#### BENEFITS OF IMPROVED EFFICIENCY

The "business case" for energy efficiency is fairly straightforward: using less energy means paying less for energy. But a simple cost-benefit analysis might overlook some very important benefits that efficiency brings.

At this point, there is little doubt that regulation of carbon dioxide is coming, with the power sector as a primary target. While there are technologies both available

and in development to mitigate CO<sub>2</sub> emissions from power plants, the fact remains that the easiest ton of CO<sub>2</sub> to remove from the atmosphere is the one that is not emitted in the first place. Greater energy efficiency in the T&D system means lower emissions in generation to deliver the same amount of consumed energy.

Fuel conservation and diversity is another strong selling point for efficiency, and here the benefits extend well beyond economic and even environmental considerations. Reducing U.S. dependence on foreign fuel supplies—be they oil, natural gas or even coal—pays obvious dividends from a security standpoint, and the less we use, the less we have to buy.

Finally, within the context of the power system itself, it's important to recognize how interrelated energy efficiency is with grid reliability. In many areas of the U.S., transmission constraints have reached the point where they not only cost consumers billions of dollars in congestion charges, they threaten the integrity of the power system itself. Over the past twenty years, the situation has continued to deteriorate to the point where now the question of installing a new line is nearly moot in some locations. By the time it was completed, demand would long since have outstripped the ability of the local grid to meet it, so a short-term solution must be implemented in the interim.

FACTS devices offer a good example of how efficiency and reliability improvements often go hand in hand. Unlike siting and building a new transmission line, FACTS devices can be implemented quickly (less than a year from purchase to completion in some cases). They immediately boost the transmission capacity of the given line while also providing voltage support and bolstering the local grid's ability to withstand disturbances.

As the reliable supply of energy, especially electric energy, continues to grow in importance, the potential impact of energy efficiency cannot be overstated. With the array of technologies and methodologies now available, efficiency stands ready to play a much larger role in the energy equation.

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STATEMENT OF STEPHEN R. YUREK, PRESIDENT, AIR-CONDITIONING AND  
REFRIGERATION INSTITUTE

Mr. Chairman, Members of the Committee, my name is Stephen Yurek and I am President of the Air-Conditioning and Refrigeration Institute (ARI). I appreciate this opportunity to present this written testimony to you about "The Energy Efficiency Promotion Act," S. 1115, and ways that we believe that government can partner with industry to promote new and effective energy efficiency programs.

Today, I am speaking on behalf of ARI, a trade association that represents the manufacturers of over 90 percent of American produced air conditioning and commercial refrigeration equipment. ARI represents a domestic industry of 180 HVACR manufacturing companies, employing approximately 130,000 men and women in the United States. Our shipments are approaching \$50 billion annually. This industry is a domestic manufacturing industry, contributing a positive \$23 billion to the U.S. balance of trade and employing over 150,000 Americans.

We also have a long history of support for energy efficiency. ARI was a principal supporter of the National Appliance Energy Conservation Act of 1987 (NAECA). By joining forces with the Natural Resources Defense Council, various environmental groups, and a number of states, we negotiated the initial national minimum standards and standards review schedule for a wide range of residential products. Five years later, we negotiated the national minimum standards for commercial products that were enacted in the Energy Policy Act of 1992.

These acts are a mere sample of key energy efficiency and environmental initiatives ARI has helped to pass. As of late, our efforts led to agreements on national standards for commercial refrigeration products, large packaged air-conditioning units, and commercial ice makers. These standards were included in the 2005 Energy Policy Act. We have also completed an agreement to set standards for walk-in refrigerators and freezers that we are currently looking for a legislative home.

Over the years, ARI has worked tirelessly to support energy efficiency. The American HVACR manufacturers that ARI represents are committed to continuing to build an industry that maintains a dual focus: To remain steadfast in supporting energy efficiency policies while manufacturing the best product possible for the American people.

While ARI is in general supportive of initiatives that promote energy efficiency, we believe that the bill being considered has a number of deficiencies that, if not corrected, could negatively impact the HVACR industry. In particular, ARI is strongly opposed to the following sections of the Act:

## SECTION 201: DEFINITION OF “ENERGY CONSERVATION STANDARD”

ARI opposes the Act’s revised definition of “energy conservation standard” and requests that Section 201 be deleted in its entirety. By expanding its meaning to include one or more energy performance standards and one or more design requirements, the new definition will authorize DOE to regulate more than one energy efficiency descriptor as well as more than one design requirement. Thus, government agencies or regulating authorities would have the ability to set multiple performance standards and to interfere with product design. The air conditioning industry is already heavily regulated and has to comply with a myriad of test and certification requirements to ensure that products meet federal minimum energy efficiency standards established under NAECA and EPCACT. Section 201 gives DOE the authority to significantly expand the testing burden on manufacturers by requiring more than just one performance standard. However, there is absolutely no evidence that multiple performance standards will ultimately result in additional energy savings. In addition, ARI believes that the role of the Federal government should not be to prescribe design standards. Prescriptive design requirements are contrary to technological innovations and should not be encouraged by Congress. Equipment design is better handled by manufacturers. Furthermore, the DOE does not have the expertise, time, or resources to accurately and effectively redesign the plethora of heating and cooling appliances that the HVAC industry manufactures.

## SECTION 202: REGIONAL STANDARDS FOR HEATING AND COOLING PRODUCTS

ARI strongly opposes regional standards. The proposed legislation contradicts the language of NAECA, legislation that stakeholders—industry, environmental groups and states—labored so hard to achieve. We oppose Section 202 for the same reasons we negotiated NAECA in the first place. Regional standards would complicate product distribution, create additional bureaucratic red tape, and be very difficult to enforce. Today, enforcement of national standards is directed at the manufacturing level and is fairly simple. A product offered for sale in this country that does not meet the applicable federal standard is unlawful on its face. ARI’s efficiency certification programs assist DOE standards enforcement by verifying that products covered by those programs satisfy applicable federal standards.

If uniform national standards were replaced by regional standards, standards enforcement would have to shift to the retail level. This would prove to be much more difficult and certainly beyond the resources of DOE. Difficulties would especially arise in the states that border an adjacent standards region. Ineffective or inconsistent standards enforcement would result in market uncertainty for manufacturers, which would make rational product planning and distribution much more challenging.

## SECTION 203: FURNACE FAN EFFICIENCY

ARI opposes the provisions of this section for a number of reasons. First, a provision giving DOE the authority to review furnace fan efficiency was included in EPCACT 2005 as permissive not mandatory. The change proposed in Section 203 would change this to a mandatory requirement on DOE. Therefore, DOE can at any time initiate a rulemaking if there is enough justification to do it. Second, we see no compelling arguments to mandate that DOE complete a rule on furnace fan efficiency by December 31, 2012, while there is little evidence that such a rule will save any significant amount of energy. During the heating season, the heat generated by the furnace fan is not wasted. Rather, it is delivered to the conditioned space. During the cooling season, the same furnace fan is used to move the cold air in the conditioned space. However, the fan energy consumption is accounted for and captured in the determination of the energy efficiency rating of residential central air conditioners. Therefore, establishing an efficiency standard for the furnace fan would not produce significant energy savings in the heating season and would constitute double regulation of central air conditioners. We request that section 203 be deleted in its entirety.

## SECTION 205: PREEMPTION LIMITATION

ARI also opposes a policy that promotes the dissolution of federal preemption when the DOE fails to set efficiency standards for a covered product, or when the DOE deliberately decides not to set an efficiency standard for a covered product because it was deemed not technically feasible or economically justified. Concern about whether DOE is fulfilling its statutory responsibilities in this area should be addressed through Congressional oversight of the agency rather than by automatic ab-

dication of federal authority to the states. This would result in significant unpredictability for manufacturers and confusion in the market.

ARI firmly believes in voluntary self regulation, but there are certain issues that require government assistance in order to ensure fair competition to protect consumers. However, when the federal government fails to actively manage these issues, special interest groups begin advocating for state or regional appliance standards. ARI strongly supports federal programs that provide preemption provisions for regulatory programs. Federal preemption promotes predictability and consistency in regulations particularly regarding energy performance standards, labeling requirements, information disclosure, and marketing—therefore, avoiding duplicitious or inconsistent state regulations.

In order for the HVACR industry to produce efficient, reliable products, preemption and energy conservation regulations must be streamlined to fit one national standard. This will provide our industry with consistent policies that will not disrupt the heating and cooling appliance marketplace. ARI strongly supports the current system administered by DOE and urges Congress not to undercut a program that has worked and continues to work by providing significant actual energy savings.

#### EFFECTIVE ALTERNATIVE ENERGY EFFICIENCY POLICY

If it is the purpose of this legislation to save energy as soon as possible, the proposed legislation as drafted will not accomplish this goal. However, we are willing to enter into discussions with you, members of the Committee, your staffs, and other interested parties to develop policies that will attain this goal. Some of the policies that could be pursued focus on a combination of effective minimum efficiency standards, federal efficiency programs, consumer incentives, research programs, and worker training and certification. Specifically:

- *Residential Energy Efficiency Initiatives.*—Incentives, rebates and other voluntary programs to encourage the purchase of higher efficiency residential products.
- *Commercial Energy Efficiency Tax Policy.*—Pass the “Cool and Efficient Buildings Act” to accelerate the current 39-year depreciation schedule for HVACR equipment to encourage the purchase of newer, energy efficient, more environmentally friendly, commercial cooling equipment in buildings and reflect the actual useful life of the equipment.
- *Worker Education and Certification.*—Enhanced education and training through worker training programs, shifting general education funding to applied technology programs, stronger state licensing, and technician certification—In the HVACR industry, the Industry Competency Exams (ICE) and the North American Technician Excellence (NATE), provide the benchmarks to ensure that equipment is installed and repaired correctly to reach optimum performance.
- *Federal Efficiency Programs.*—Continued federal funding and use of innovative financing mechanisms, to help increase the energy efficiency of government owned housing and buildings. We also call on federal and state governments to institute aggressive programs to expedite the replacement of all CFC chillers, saving energy and protecting the environment.
- *Research and Development.*—Comprehensive energy policy must include significant funding for research and development of energy efficient technologies including research for the next generation of air conditioning and commercial refrigeration equipment.

It is our hope that we can work with the committee to fully develop these and similar policies to encourage, promote and achieve actual energy savings.

In order for the HVACR industry to produce efficient, reliable products, preemption and energy conservation regulations must be streamlined to fit one national standard. This will provide our industry with consistent policies that will not disrupt the heating and cooling appliance marketplace. ARI strongly supports the current system administered by DOE and urges Congress not to undercut a program that has worked and continues to work by providing significant actual energy savings.

Mr. Chairman, thank you for the opportunity to present the views of the HVACR industry on the Energy Efficiency Promotion Act of 2007. I would be pleased to answer any questions you or the Members might have, and I should add that the expertise of our industry is at your service to aid you in arriving at the appropriate decisions in this important matter.

STATEMENT OF ELCON, THE ELECTRICITY CONSUMERS RESOURCE COUNCIL  
REVENUE DECOUPLING: A POLICY BRIEF OF THE ELECTRICITY CONSUMERS RESOURCE  
COUNCIL

Every complex problem has a simple solution too good to be true, and it usually is.—Attributed to H.L. Mencken.

INTRODUCTION

For over two decades advocates of ratepayer-funded energy efficiency and load reduction programs have recommended that the “link” between utility’s revenues and its sales be “decoupled” to eliminate a utility’s disincentive to sponsor such programs. The argument is that the combination of the utility management’s fiduciary duty to shareholders and the use of rates based on a revenue requirement, that includes sales in its calculation, discourages utilities from being competent vendors of energy efficiency and load reduction services.

Revenue decoupling (RD) is generally defined as a ratemaking mechanism designed to eliminate or reduce the dependence of a utility’s revenues on sales. It is adopted with the intent of removing the disincentive a utility has to administer and promote customer efforts to reduce energy consumption and demand or to install distributed generation to displace electricity delivered by the utility’s T&D system. In regulatory parlance, RD takes the form of a tracker or attrition allowance in which authorized per customer margins are subject to a true-up mechanism to maintain or cap a given level of revenues or revenues per customer. Variations from the targeted sales or revenues are subsequently recaptured from ratepayers through a surcharge or credit.

In a significant departure from traditional cost-of-service principles, which historically provides utilities with only the opportunity to earn a fair return, RD guarantees actual earnings at the level of authorized earnings. Under RD, a utility is indifferent to the impact of sales levels or when the sales occur because of changing economic conditions, weather, or new technologies.

ELCON members are strong supporters of energy efficiency and are world-class practitioners of innovative technologies that reduce their energy costs to improve their competitiveness. But ELCON strongly opposes decoupling because it disrupts and distorts the utility core business functions and is not a particularly effective way of promoting energy efficiency or anything of benefit to customers. Time and time again decoupling has been tried in several states, only to be suspended because it unduly interferes with the overall regulatory process. ELCON believes that there are other ways to promote energy efficiency and load reduction services that have proven to be more effective. This paper describes the simple mechanics of decoupling, why decoupling has historically failed and is not likely to be any more effective in future applications, and proposes alternative regulatory policies that more effectively focus on market transformation and the effective delivery of demand-side services.

THE MECHANICS OF REVENUE DECOUPLING: AN ILLUSTRATED EXAMPLE  
OF AN ANNUALIZED RD MECHANISM<sup>1</sup>

	Year One	Year Two
Base Year Assumptions		
Utility’s Operating Costs (A) .....	\$4 billion .....	\$4 billion
Utility’s Rate Base (B) .....	\$5 billion .....	\$5 billion
Authorized Return to Equity Owners (ROE) .....	10% .....	10%
Authorized Earnings to Equity Owners (C) .....	\$500 million .....	\$500 million (10% of \$5 billion)
Utility’s Authorized Revenue (A + C) .....	\$4.5 billion .....	\$4.5 billion
RD Balance Account (D) .....	0 .....	\$45 million
Baseline Sales (E) .....	45,000 GWh .....	45,000 GWh
Base Rate per KWh (A + C)/E .....	\$0.10 .....	\$0.10
Effective Rate per KWh (F) (A + C + D)/E .....	\$0.10 .....	\$0.101

THE MECHANICS OF REVENUE DECOUPLING: AN ILLUSTRATED EXAMPLE  
OF AN ANNUALIZED RD MECHANISM<sup>1</sup>—Continued

	Year One	Year Two
Actual Sales Year		
Actual Sales (G) (1% deviation from baseline forecast).	44,550 GWh 1% Below Baseline.	45,450 GWh 1% Above Baseline
Actual Revenues Collected (H) (F x G).	\$4,455 million .....	\$4,590 million
Unadjusted Earnings to Equity Owners (I) (H minus A).	\$455 million .....	\$590 million
Reported ('Authorized') Earnings (C)	\$500 million .....	\$500 million
Actual ROE (I/B) .....	9.1% Reduction of 90 basis points.	11.8% Increase of 180 basis points
Reported ('Authorized') ROE .....	10% .....	10%
End-of-Year Balance Account (D) (A + C) minus H.	\$45 million .....	(\$90 million)

<sup>1</sup>This is a simplified example of revenue decoupling that assumes no variable T&D costs or change in the number of customers. Also, tax implications and accounting for price elasticity are ignored.

#### HOW DECOUPLING WORKS

RD mechanisms can take several forms but all accomplish the same thing: customer rates are automatically adjusted to immunize utility earnings from sales fluctuations.

The first example is illustrated on the spreadsheet on page 2. It provides a simplified form of mechanism in which true-ups are done on an annual or multi-year basis. The process usually starts with a baseline determination of a utility's revenues that may include the anticipated consequences of a DSM program. This is the 'base case' in the illustration.

The illustration holds this baseline constant over a two-year period. In the first year, actual sales are 1% below the baseline amount; in the second year actual sales are 1% above the baseline. The result is a revenue shortfall in the first year of \$45 million. Absent any other offsetting revenue recovery mechanism, this shortfall reduces earnings to equity owners and the expected ROE. This illustrates a main argument of proponents of RD that any small reduction in sales can produce a significant reduction in the utility's allowed earnings. In the example, the actual ROE is 9.1%, a reduction of 90 basis points from the allowed ROE of 10%.

Applying the RD mechanism in the second year, revenues are adjusted by increasing the customer rate upwards to ensure that sufficient revenues are collected to achieve the allowed ROE. However, actual sales are 1% above the baseline amount and the utility over collects \$90 million. The actual ROE is 11.8% or 180 basis points above the allowed ROE. This simple example highlights the potential year-to-year volatility of the RD mechanism.

With compounding economic events (e.g., recessions), the accrual account can grow quite large unless more frequent rate cases or true-ups are ordered. RD mechanisms tried in the past tended to generate substantial accruals that quickly became a dilemma for regulators and a burden for ratepayers.

The second example (on page 4) illustrates decoupling on a revenue-per-customer (RPC) basis. The base year revenue collected per customer (RPC) on an average customer class basis is fixed, and the annual charge is then typically allocated on a monthly, normalized basis over a reference year. Each month the actual revenues collected per ratepayer are compared to the allowed monthly RPC and the difference is either credited or debited to a balancing account. Customers would still be billed on a per-unit consumption basis, but the rate would be true-up based on actual revenues collected per customer. This prevents the utility from earning additional profit from unexpected sales but also ensures that the utility recovers its costs resulting from unexpected customer growth. For unexpected declines in sales per customer and/or declines in the number of customers, the mechanism works the same way. Under- or over-recoveries in any month are automatically true-up the following month or at the end of the year.

The RPC mechanism highlights the 'blunt instrument' nature of decoupling. The utility is made whole for earnings losses that go beyond the limited losses caused solely by energy efficiency and load reduction programs. The net effect of the true-up mechanism is to put the utility's revenue stream on autopilot. This isolates util-

ity management and equity owners from the normal business risk inherent to the utility industry, notwithstanding that the existence of a ROE is to reward equity owners with a return on their investment that includes a sizeable risk premium commensurate with the business risk. In short, an RD mechanism makes retail electric distribution service virtually risk free for utilities.

THE MECHANICS OF REVENUE DECOUPLING: AN ILLUSTRATED EXAMPLE  
OF REVENUE-PER-CUSTOMER (RPC) MECHANISM WITH MONTHLY TRUE-UPS<sup>1</sup>

	Amount
Base Year Allowed RPC For a Base Year Month	
Base Year Rate per kWh (A) .....	\$0.10
Base Year (Month) Sales in kWh (B) .....	1 billion
Base Year (Month) Revenue (A x B) .....	\$100 million
Base Year Number of Customers (C) .....	1,000,000
Allowed RPC (A x B)/C .....	\$100
Calculation of Revenue Adjustment For A Single Month	
Base Year Rate per kWh (A) .....	\$0.10
Actual Sales for the Month (D) 5% Reduction from Baseline (B) ...	0.95 billion
Actual Revenues for the Month (E) (A x D) .....	\$95 million
Actual Number of Customers (F) .....	1,010,000
Allowed RPC .....	\$100
Allowed Revenues (G) (F x E) .....	\$101 million
Revenue Adjustment (H) (G - E) .....	\$6 million
Forecasted Next Month Sales (I) .....	1.0 billion
Rate Adjustment (True-Up) (H/I) .....	\$0.006

This adjustment is added to rates for sales the following month, or at the end of the year.

<sup>1</sup>This example assumes that sales per customer decline but the number of customers grows.

ELCON POSITION & RECOMMENDATIONS

*A. Decoupling Promotes Mediocrity in the Management of a Utility.*

The primary function of a regulated electric utility is and will always be to efficiently sell and deliver electric energy to customers. For investor-owned utilities, the profit-motive is a legitimate and practical means to incent utility managers to operate their business in a competent and efficient manner. There also need not be any conflict with 'unselling' the business' primary product by offering energy efficiency and load reduction services.

Firms in many industries meet the competition by selling a range of products competing for different segments of the market share. But in regulated industries, such as electric utilities, rate structures and regulatory policies may have to be aligned to make this work. The attractiveness of revenue decoupling to many utility executives is that it will immunize the company's earnings or revenues from sales fluctuations. This can only promote mediocrity and indifference to the utility's core business, a situation that should not be in the best interests of either advocates of selling or unselling the energy product.

*B. Decoupling Shifts Significant Business Risk From Shareholders to Consumers With Only Dubious Opportunities for Net Increases in Consumer Benefits.*

Decoupling does not create an economic incentive promoting greater energy efficiency or load reduction. It establishes, at best, utility indifference to these objectives. At the same time, it undermines customer efficiency efforts and muddles price signals to consumers. For example, conservation efforts are rewarded with higher future rates, while excessive consumption paradoxically produces bill credits. This is a cynical way to induce energy conservation that is not likely to be effective. Decoupling only removes an alleged disincentive while at the same time creating real disincentives for competent management of the business. The Maine Public Utilities Commission stated in 2004:

Revenue decoupling does not . . . provide any positive incentive for utilities to promote or support energy efficiency or conservation programs; it only makes them financially neutral to such activities.

There is growing national concern that utilities are under-investing in infrastructure and not adequately planning for the future needs of their customers. Why this

situation has been allowed to happen is troublesome given that for many utilities their allowed return is already above their actual cost of capital. Regulatory policies need to refocus utility management on its core responsibilities to efficiently sell and deliver electric energy and to make prudent long-term investments. Regulators must not bargain with their utilities from a weak position that assumes that financial incentives in excess of a reasonable return is necessary for ordinary business behavior. For all practical purposes RD mechanisms put utility management on autopilot and this will only further encourage them to ignore their core business, the value of economic development in their franchise area, and the broader needs of the utility's customers. These objectives are at least as important as any attempt to only eliminate a disincentive to energy efficiency.

An important feature of the financial structure of investor-owned utilities is that the utility's shareholders assume normal business risk. This is the risk-reward model that pervades private businesses in the US and global economies. Shareholders are best able to diversify business risk and market-based economies strive on this basis. Utility ratepayers are least able to do so; yet it is the expressed intent of RD mechanisms to shift risk from shareholders to consumers, a radical departure from standard regulatory policy intended to balance the interests of equity owners and ratepayers.

Proponents of RD mechanisms almost always support preserving the utility's allowed return on equity at a level that assumes the shareholders retain such risk. Getting utility management to buy into the scheme would be difficult otherwise. Hence RD mechanisms are an attempt to force energy efficiency and load reduction programs at any cost and with no regard for the economic welfare of the impacted ratepayers.

Using RD mechanisms in conjunction with general rate cases also can have a ratchet effect on revenues and rates to the extent the RD adjustments in between rate cases are memorialized in the next rate case. For these and other reasons there is ample justification for dismissing the alleged value of RD mechanisms in rate-making.

*C. Decoupling Eliminates a Utility's Financial Incentive To Support Economic Development Within Its Franchise Area. This Includes the Incentive To Support the Well Being of Manufacturers and Their Workforce.*

Promoting growth in sales through the addition and expansion of business enterprises is a key area where utility financial incentives and local public interests are precisely aligned. Revenue decoupling breaks that alignment. While its sole purpose is the elimination of the alleged disincentive to a utility's active support for energy efficiency and load reduction programs, it also eliminates the financial incentive to actively promote the economic development of the utility's franchise area. More specifically, it neutralizes the financial incentive to attract new commercial and industrial businesses—and new job opportunities—to the utility's franchise area, and to support the well being of its existing commercial and industrial customers, unless those customer classes are specifically exempt from the RD mechanism. ELCON believes that regulatory policies should promote greater customer focus, not less.

*D. Revenue Decoupling Mechanisms Tend To Address 'Lost Revenues' and not the Real Issue, Which Is Lost Profits.*

To the extent that rates based on sales create a disincentive for utility efforts to promote energy efficiency and load reduction, the problem is in the rate design and the failure to abide by longstanding cost-of-service ratemaking principles. RD mechanisms have the effect of shifting the recovery of the utility's fixed costs into the customer (or demand) charge of base rates where they belonged in the first place. Thus, from one perspective, RD can be viewed as a stopgap ratemaking mechanism to overcome rate designs that have been used and abused for other misguided policy objectives such as the imposition of cross-class subsidies and stranded cost recovery. The complexity of RD mechanisms also makes them very expensive to administer and regulate. This greatly reduces the transparency of the ratemaking process and, even more so in the public mind, reduces the logic of cost causation.

The ability of a utility to have the opportunity to earn a fair return on assets that are prudently incurred and that remain used and useful is a grand compromise of regulation that has withstood the test of over a hundred years of practice. Any increased opportunity for a utility to earn its authorized rate of return must be commensurate with an increase in business risk, not the reverse!

There is no inherent inconsistency that a utility would both sell and 'unsell' electric energy if rates are appropriately designed for the different services. Selling competing products and services is a common business choice and need not be a moral dilemma only for utility executives. There are examples of state ratemaking prac-

tices such as shareholder performance incentives that create more explicit economic inducements for promoting energy efficiency and load reduction. These practices avoid the collateral damage created by the 'blunt instrument' nature of RD mechanisms.

*E. The First and Most Important Step Regulators Can Take To Promote Energy Efficiency Is To Send the Proper Price Signals to Each Customer Class.*

In the short term, seasonal weather variations are the predominant cause of variations from sales forecasts. For example, unseasonably mild winters can lead to below forecast sales. In the longer term, economic growth in the form of increased customer accounts and usage drive electric sales and revenue growth. Ratepayer investments in energy efficiency gradually moderate energy sales growth. Load shifting efforts from peak to off-peak periods may not reduce overall kWh sales, but should lower the cost of supplying that energy.

Thus the first and most important step regulators can take to ensure that ratepayers themselves are induced to make energy efficient investments and behavioral changes is to implement retail rates that send the proper price signals to each customer class. This includes allocation of fixed costs to customer (or 'demand') charges and time-variant energy charges. The Energy Policy Act of 2005 directs the states to consider expanded deployment of time-based pricing and advanced metering, and ELCON strongly encourages states to pursue this path to more efficient pricing rather than the futile pursuit of decoupling mechanisms.

Large industrial customers are almost always on some form of time-of-use rate, with a demand charge, and this rate structure is extremely valuable to the customer for evaluating the cost-effectiveness of energy efficiency improvements in their manufacturing facilities. Large industrial customers do not look for guidance from utilities on how to co-optimize their energy consumption and manufacturing activities, and 'decoupling' does not make utilities experts in these matters. By further blunting price signals to ratepayers, RD mechanisms actually undermine incentives for customers to invest in more efficient appliances and equipment because the reward for reducing consumption is higher rates in the future. ELCON members believe that a utility's fundamental responsibility is to efficiently sell and deliver energy at the lowest possible cost, and appropriate price signals are an essential component of that objective.

*F. Several States Have Successfully Used Alternative Entities—Including Government Agencies—For Unselling Energy. This Creates an Entity Whose Sole Mission Is To Promote Energy Efficiency, and Retains a Separate Entity Whose Responsibility Is To Efficiently Sell and Deliver Energy.*

Some states believe that simultaneously selling and unselling electric energy is a real conflict of interest and have assigned the administration of the unselling function to an independent entity or agency whose mission is dedicated to promoting energy efficiency and load reduction. This policy recognizes that another entity—the utility—must be responsible for efficiently selling and delivering electric energy. States that have taken this path are Wisconsin, Maine, New Jersey, Ohio, Vermont, Oregon, New York, and Connecticut.

In New York, for example, the New York State Energy and Research Development Authority (NYSERDA) is charged with the responsibility for demand-side programs, and is funded by a systems benefit charge that is collected by the utilities. Wisconsin established Focus On Energy as a public-private partnership offering energy information and services to residential, business, and industrial customers throughout the state. These services are delivered by a group of firms contracted by the Wisconsin Department of Administration's Division of Energy.

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GAMA—AN ASSOCIATION OF APPLIANCE & EQUIPMENT MANUFACTURERS  
Arlington, VA, April 24, 2007.

Hon. JEFF BINGAMAN  
Chairman, Senate Committee on Energy and Natural Resources, SD-304 Dirksen  
Senate Office Building, Washington, DC.

DEAR MR. CHAIRMAN BINGAMAN: The Gas Appliance Manufacturers Association (GAMA) and our witness, Mr. Robert Schjerven, CEO Emeritus of Lennox International Inc., were pleased to have the opportunity to present the views of our industries on S. 1115 during the hearing conducted by the Senate Committee on Energy and Natural Resources yesterday afternoon. We stand ready to assist the Committee and its staff in moving this legislation forward with appropriate modifications to resolve several serious concerns raised during the hearing.

GAMA continues to support the consensus efficiency standards for residential boilers contained in the bill, but we wish to re-emphasize that certain other provisions of the bill do not have consensus support, but in fact are highly controversial. These provisions, specifically sections 201, 202, 203 and 205, would make fundamental changes to existing law and they would have very significant market impacts. GAMA and the industries we represent are very concerned that these provisions could be passed in haste without an understanding of their potential for harm.

The proposal (section 201) to authorize the U.S. Department of Energy (DOE) to establish regional standards for heating and cooling equipment was, as you know, a major issue at yesterday's hearing. As Mr. Schjerven explained in his testimony, compliance with regional standards would impose substantial cost burdens on manufacturers and distributors, and the likelihood that regional standards would be difficult if not impossible, to enforce would exacerbate marketplace disruption and economic losses. Deputy Assistant Secretary John Mizroch, testifying on behalf of the Department of Energy (DOE), observed that enforcement of regional standards would create additional burdens on government that require further consideration. In responding to your follow-up questions, Mr. Mizroch was unable to say how the Department would enforce regional standards other than that the Department would "work with the states."

Mr. Chairman, you posed the question to Mr. Mizroch whether, regardless of the effectiveness of enforcement, a more stringent regional gas furnace efficiency standard for northern states might get some higher efficiency furnaces installed that might not otherwise be the case. I hope it was clear from Mr. Schjerven's testimony that market forces are responding very well to the demand for very high efficiency furnaces (i.e. condensing furnaces having an efficiency rating of at least 90%) in northern states.

Nevertheless, according to recent DOE analysis cited by Mr. Schjerven in his testimony, 20-24% of households in northern states would suffer a net economic loss if installation of a condensing furnace were their only choice.

In any event, I want to be sure the Committee understands that today enforcement of federal furnace efficiency standards, assisted by GAMA's own furnace efficiency certification program, is very effective and essential to a fair and competitive marketplace. GAMA would not be able to assist DOE in enforcing regional standards because we have no way of knowing where products get installed. Regional standards, the enforcement of which would be much less certain, would create market instability. Companies that earnestly tried to comply with the law would face the risk of loss of sales to cheaters. The market disruption and economic losses that would result from regional standards, especially because standards enforcement would be uneven and more complicated, would far outweigh any benefits of a regional standard, especially considering the evident success of market forces in producing energy savings.

Thank you again for considering our views on this important legislation. I request that this letter be made part of the hearing record.

Respectfully submitted,

JACK W. KLIMP,  
*President.*