

# APPLIANCE STANDARDS

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HEARING  
BEFORE THE  
COMMITTEE ON  
ENERGY AND NATURAL RESOURCES  
UNITED STATES SENATE  
ONE HUNDRED ELEVENTH CONGRESS  
FIRST SESSION  
TO  
RECEIVE TESTIMONY ON S. 598, THE APPLIANCE STANDARDS  
IMPROVEMENT ACT OF 2009

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## APPLIANCE STANDARDS

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THURSDAY, MARCH 19, 2009

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

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

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

The CHAIRMAN. Why don't we go ahead? I'm informed Senator Murkowski is on her way. But we should go ahead and proceed.

This is a hearing on legislation to strengthen two programs that are central to improving the Nation's efficient use of energy. The DOE Appliance Standards Program and the joint Department of Energy and EPA, excuse me, Energy Star Program. It's estimated these programs have reduced national electrical demand approximately 10 percent below what it would have been absent these programs.

Net savings to customers are estimated at over \$400 billion. Notwithstanding this success energy efficiency continues to be the most cost effective strategy for enhancing economic and energy security, saving consumers money and reducing the environmental impacts of energy production. S. 598 which is the legislation that we've prepared on this would help to achieve these goals by expanding the Standards Program and by making several operational improvements.

For example, S. 598 would establish Federal standards for table and floor lamps. This provision alone is expected to save enough electricity by 2020 to serve 350,000 homes.

I understand that the witnesses will have recommendations to establish standards for additional products and to improve program operations and decisionmaking. I look forward to working with Senator Murkowski on these recommendations. See how we can proceed legislatively on them.

I'm sorry the committee is unable to accommodate all of the requests we've had for folks to testify on this important set of issues. But I assure you the input of all stakeholders is appreciated. All written statements will be made part of the record.

Members of the staff will be available to follow up on the ideas and concerns contained in all of the testimony. I recognize the vital role that energy efficiency advocates and industry associations play

in these programs. We thank all of you for the commitment that you have to the Nation's economy and the Nation's energy security.

I just went ahead with my opening statement, Senator Murkowski. If you wanted to make an opening statement, we'll go ahead and hear that. Then hear from the witnesses.

**STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR  
FROM ALASKA**

Senator MURKOWSKI. Great, thank you. Thank you, Mr. Chairman. I appreciate yet another committee hearing of substance.

We've had a good full week of them. This is yet one more. This is another important step as we work to craft a comprehensive energy bill that's ultimately going to help improve our energy security.

Today's bill S. 598 addresses the need for improved consensus appliance standards that increase energy efficiency. Have the potential to shrink the energy bills of average American families. I think for far too long we've let bureaucracy stand in the way of implementing consensus efficiency standards for appliances.

Technology is out pacing our ability to set effective standards. So it's time that we streamline the process. I think that this bill sets us on the path. This bill will support and build upon the proven track record of DOE's Appliance Standard Program as well as the joint DOE/EPA Energy Star Program which has successfully promoted the sale of high efficiency products through labeling and marketing. In addition to establishing new minimum standards for various products including portable light fixtures the bill holds DOE accountable for implementation in a timely fashion.

The U.S. has shown an ability to be a global leader in manufacturing innovation. Although there is a continued role for the government to play in the development of standards, it shouldn't be the government's primary role. We know that markets aren't perfect. But much of our success in the manufacturing arena is due to the ingenuity within the private sector. I think that this bill provides the necessary framework to ensure a good partnership between government and the industry.

I look forward to the comments from the witnesses today and their help as we have drafted this legislation. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much. We have a very distinguished panel here. Let me introduce all six panelists. Then we'll hear from you in that order.

First, Mr. David Rodgers, who is Director of Strategic Planning and Analysis with the Department of Energy and we welcome him.

Next, Mr. Brian McLean, who is the Director of the Office of Atmospheric Programs in the EPA, thank you for being here.

Next is Mr. Steven Nadel, who is the Executive Director of ACEEE here in Washington.

Next, Mr. Richard Upton, President and CEO of the American Lighting Association, thank you for being here.

Next, Mr. Kyle Pitsor, who is Vice President of Government Relations for the National Electrical Manufacturers Association in Rosslyn.

Finally Mr. Mark Connelly who is the Senior Director for Appliances and Home Improvement at Consumer Reports, thank you very much for being here.

Mr. Rodgers, why don't you go right ahead?

**STATEMENT OF DAVID RODGERS, DIRECTOR, STRATEGIC PLANNING AND ANALYSIS, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY**

Mr. RODGERS. Thank you sir. Chairman Bingaman, Ranking Member Murkowski, members of the committee, thank you for the opportunity to appear before you today to discuss a draft legislation on appliance standards and Energy Star. I'd like to thank the committee for holding this hearing as well as for your leadership in the areas of energy efficiency and strong support for clean energy programs at the Department of Energy.

Mr. Chairman, I know that energy efficiency is a priority for the committee. We are excited to work with you to advance the goal of making our homes, our offices, our factories and our vehicles more efficient. We look forward to working with you on this legislation.

As directed by Congress the Department's appliance and commercial equipment standards program develops test procedures and energy conservation standards for residential appliances and commercial equipment. Standards promulgated by the Department and standards established by this committee save consumers money, spur innovation, conserve energy and reduce greenhouse gas emissions. On February 5 of this year, President Obama issued a memorandum to the Secretary of Energy requesting that the Department take all necessary steps to finalize legally required conservation standards rulemaking as expeditiously as possible and consistent with all applicable judicial and statutory deadlines.

We're moving forward to meet the President's request. Specifically the Department will be completing 5 appliance standards rulemaking by August of this year and as highlighted in the President's memo these 5 rulemakings are likely to contribute up to 25 quads of energy savings over 30 years.

The five standards rulemakings includes the codification of standards prescribed by Congress in the Energy Independence and Security Act.

Standards for fluorescent and incandescent lamps.

Beverage vending machines.

Ranges and ovens.

Certain commercial equipment covered by ASHRAE standards.

With the Secretary's leadership I am pleased to report that the codification of the EISA standards rule was already sent to the Federal Register and should be published shortly. The notice on ASHRAE products is scheduled to be published in the Federal Register tomorrow. This is just a start.

In the next 3 years the Department will also be revising standards for many, many additional categories of products. The Department is also proactively working with industry and stakeholders to improve and streamline our test procedures and enforcement of appliance standards. As you know appliance standards sets the minimum requirements for these residential and commercial appliances.

Energy Star helps consumers and businesses to easily identify those highly efficient products that go beyond the minimum standards to save energy and money. DOE manages Energy Star program for eight product categories including clothes washers, refrigerators, dishwashers, room air conditioners, windows and doors, compact fluorescent lamps and solid state lighting and water heaters. We believe that these qualified products in the Department's portfolio have achieved significant energy and cost savings.

Our analysis indicates as much as 55 billion kilowatt hour reduction in energy consumption. Eight billion saved on utility bills since 1997. Clothes washers have been a notable success when the program was first announced in 1997.

Qualified models made up less than 1 percent of annual washer sales. As a result of Energy Star and appliance standards today every single washer sold in the U.S. meets those original Energy Star criteria. The technology continues to improve.

Our compact fluorescent light program has helped increase the number of those lamps sold to nearly 300 million in 2007 corresponding to a doubling of market share for these efficient products. We expect that to grow more.

Our newest product categories are solid state lighting commenced in September of last year. Residential water heaters launched in January. Here again we're establishing criteria recognizes accelerating the best that industry has come to innovate.

We have ten different solid state lighting products from four different manufacturers that are qualified to display the Energy Star label. These are available today. We're continuing to evaluate many other clean energy products as candidates for Energy Star labeling.

With continually evolving market and technology improvements leading to greater energy efficiency the Energy Star program does require regular updates and improvements to protect the brand. We have been reminding our partners that they must fulfill their obligations as part of the Energy Star agreement.

DOE is also establishing third party testing and verification for our managed appliance products. We have studied recent recommendations to improve Energy Star. Have adopted them for DOE managed products.

Energy efficiency is the foundation to transform our Nation's energy economy and meet the President's goals. We're therefore committed to promulgating tough commercial and residential appliance standards developing Energy Star ratings for new product categories. We're modernizing and improving and tailoring these programs to market conditions and to be responsive to legislative and regulatory requirements. Our Nation deserves no less.

Thank you for the opportunity to discuss these vital programs. I'm happy to answer any questions.

[The prepared statement of Mr. Rodgers follows:]

PREPARED STATEMENT OF DAVID RODGERS, DIRECTOR, STRATEGIC PLANNING AND ANALYSIS, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY

Chairman Bingaman, Ranking Member Murkowski, Members of the Committee, thank you for the opportunity to appear before you today to discuss draft legislation on Appliance Standards and ENERGY STAR. The Administration has not formulated an official position on the recently introduced legislation in its entirety, but



I am happy to provide an initial comment as well as an overview and update of related programs at the Department of Energy (DOE).

DOE and the U.S. Environmental Protection Agency (EPA) do not support Section 3 of the draft bill entitled ENERGY STAR Program, which directs agency coordination and standardization of program management. The Agencies believe that these purposes can be best addressed through Agency-led efforts to improve interagency coordination, identify and address issues where they arise, and increase communication with stakeholders about program processes and decision-making. The Administration is aware of these issues and is committed to addressing them and working with program stakeholders to continue to build on the success of the ENERGY STAR program and extend the benefits it provides in reduced energy use and fewer emissions of greenhouse gases. Specifically, the EPA and DOE will, within 45 calendar days, provide to the Committee written documentation on the resolution of these issues.

As this Committee well knows, energy efficiency is the fastest, lowest risk, most economical way to address climate and energy security concerns. Improvements in energy efficiency can be made today, with significant benefits: the McKinsey Global Institute identified energy savings sufficient to cut world-wide consumption growth in half using only existing technologies that offer at least a 10 percent internal rate of return.<sup>1</sup>

Mr. Chairman, I know that energy efficiency is a priority for you and your Committee, and we are excited to work with you to advance the goal of making our homes, offices, factories, and vehicles more efficient. The Department advances energy efficiency through a number of efforts, including promoting the adoption of energy efficient policies and practices; broadening consumer acceptance of energy efficiency as a high-priority, serving as a cost-saving energy resource; and accelerating market adoption of energy efficient technologies. The Appliances and Commercial Equipment Standards Program, as well as the ENERGY STAR Program, which is co-sponsored by EPA, are major components of the Department's energy efficiency efforts.

#### APPLIANCE STANDARDS

The Department's Appliance and Commercial Equipment Standards Program develops test procedures and energy conservation standards for residential appliances and commercial equipment. These standards save consumers money, spur innovation, conserve energy, and reduce greenhouse gas emissions.

The Appliance Standards Program was established with the passage of the Energy Policy and Conservation Act of 1975 (EPCA), which designated test procedures, conservation targets, and labeling requirements for certain major household appliances. The act has been amended several times, changing the conservation targets to mandatory standards and adding categories to eventually include a broad range of residential and commercial products. As amended, the appliance standards requirements are among the broadest and most stringent of any country in the world. In 2005, the Department was sued for allegedly failing to meet the deadlines and other requirements of EPCA. Deadlines for these specific products had been repeatedly missed, in some cases for a dozen years or more.

In January 2006, the Department released its plan to eliminate the backlog on appliance standards by issuing one new or amended standard for each of the products in the backlog by June of 2011. This ambitious schedule reflects a 6-fold increase in standards activities compared to the previous 18 years. In addition to clearing the backlog of appliance standards, the Department is addressing additional standards and test procedure requirements included in the Energy Policy Act of 2005 (EPACT 2005) and the Energy Independence and Security Act of 2007 (EISA).

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

Although the Department has made significant progress on meeting its consent decree and the additional EPACT and EISA requirements, it remains subject to deadlines on 15 of the 22 product categories. On February 5, 2009, President Obama issued a memorandum to the Secretary of Energy requesting that the Department take all necessary steps to finalize legally required energy conservation standards rulemakings as expeditiously as possible and consistent with all applicable judicial and statutory deadlines.

<sup>1</sup>McKinsey Global Institute, "Curbing Global Energy Demand Growth," May 2007.

The Department is committed to fulfilling the President's request. Specifically, DOE plans to complete five appliance standards rulemakings by August 8th of this year, highlighted in the President's memo. The five standards rulemakings include the codification of standards prescribed by EISA, standards for fluorescent and incandescent lamps, beverage vending machines, ranges and ovens, and certain commercial equipment contained in ASHRAE Standard 90.1. In the next three years, the Department will also be revising standards for several additional categories of products, including residential air conditioners, refrigerators, clothes washers, and water heaters.

While DOE has already been working at an increased pace to complete required rulemakings, the Administration's goal of using appliance standards to increase energy savings and avoid greenhouse gas emissions means that the Department is examining and reviewing operations to be even more efficient and productive. In addition, the Department has been proactively working to improve and streamline its test procedures and enforcement of appliance standards. The improved procedures will build upon DOE and industry best practices, creating a process for developing, reviewing, and updating test procedures that will be able to accommodate changes in designs and technologies.

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

The Department is assessing the resource needs of the appliance standards team as well as determining how best to improve and or reengineer the underlying processes. The goal is to put sufficient resources (Federal and outsourced staff and funding) in place to ensure all requirements are met within given timelines and quality and content requirements. These resources will be applied to current activities (rule development) as well as to standards enforcement.

#### ENERGY STAR

Whereas appliance standards set the minimum requirements for residential appliances and commercial equipment, ENERGY STAR helps consumers and businesses to easily identify those highly-efficient products, homes, and buildings that go beyond the minimum standards to save energy and money while protecting the environment. ENERGY STAR is a voluntary labeling and recognition program co-sponsored by DOE and EPA that seeks to accelerate the adoption of clean and efficient domestic energy technologies. More than 12,000 organizations have joined ENERGY STAR as partners committed to improving the energy efficiency of products, homes and businesses, and the ENERGY STAR label appears on more than 60 product categories.

DOE manages ENERGY STAR programs for eight product categories. This includes clothes washers, refrigerators, dishwashers, room air conditioners, windows and doors, compact fluorescent lamps (CFLs), solid state lighting (aka LED lighting), and water heaters. Together, these products target energy savings from six of the top seven areas of residential energy consumption.<sup>2</sup> Products like clothes washers and refrigerators are also very visible to consumers, and are often cited as examples of products associated with ENERGY STAR.

The Department estimates that sales of ENERGY STAR-qualified products in its portfolio have achieved significant energy and cost savings for America. DOE's biggest success has probably been with clothes washers. When the ENERGY STAR program for clothes washers was announced in 1997, qualified models made up less

<sup>2</sup>Based on 2006 data as summarized in the 2008 Buildings Energy Databook, [http://buildingsdatabook.eren.doe.gov/?id=view\\_book&c=6](http://buildingsdatabook.eren.doe.gov/?id=view_book&c=6). (The top seven residential end uses are space heating, space cooling, water heating, lighting, electronics, refrigerator, and wet cleaning. DOE products target all of these except electronics.)

than one percent of annual unit sales. As a result of ENERGY STAR and appliance standards, today every single clothes washer sold in the United States meets those original ENERGY STAR criteria. Even with three revisions to strengthen the criteria, the market share of ENERGY STAR clothes washers has risen to more than 40 percent, and future changes are scheduled for this July and again in January 2011.<sup>3</sup>

The CFL program, first launched in 1999, has also achieved large energy savings. Due in part to the ENERGY STAR Program and related campaigns, the number of CFLs sold in 2007 was nearly 300 million, corresponding to a doubling of the market share of the previous year from 8% to 20%.<sup>4</sup> There is a national average of about four CFLs per home—with about 40 sockets per home, DOE sees a lot of additional energy savings potential from the continued promotion of CFLs.<sup>5</sup>

The Department's newest product categories are solid state lighting (which commenced in September 2008) and residential water heaters (which just started in January). Here again, DOE established criteria asking manufacturers to create products beyond the norm, thus recognizing and accelerating the best of the best. The Department expects these two product categories will provide significant energy savings in the years to come. DOE is also continuing to evaluate several clean energy products developed at the Department of Energy as candidates for ENERGY STAR labeling.

The Department has worked closely with retailers and utilities, whose efforts have been instrumental in building market share for ENERGY STAR lighting and appliances. DOE estimates that this year, utilities are planning to spend about \$176 million on lighting rebate programs and \$83 million for appliances.

DOE has also implemented a number of education and outreach activities to help drive awareness and sales of ENERGY STAR products. The most recent examples include Operation Change Out, a partnership with the Department of Defense to promote the use of CFLs; and the Recycle my Old Fridge campaign, designed to encourage consumers to get rid of older second refrigerators.

With a continually evolving market and technological improvements leading to greater energy efficiency, the ENERGY STAR Program requires regular updates and improvements to protect the ENERGY STAR brand.

To this end, DOE has reminded its ENERGY STAR partners about their obligations under the test procedures when DOE learns that the procedures are not being followed. For example, the Department came to an agreement with LG Electronics, USA, Inc., in November 2008, in response to concerns about several refrigerator-freezer models. To effectively measure the savings associated with the ENERGY STAR Program, all partners must report energy consumption based on the same standardized test procedures. Those procedures require the ice maker to be disabled but require all temperature-controlled compartments, including ice storage bins, to be set at their coldest temperature, a condition missed by LG's testing. As part of a November 2008 agreement between the Department and LG, the refrigerator-freezers in question have been voluntarily withdrawn from the ENERGY STAR Program, and LG has agreed to provide free inhome modifications to products already sold to improve their energy efficiency. Consumers will also receive a payment covering the energy cost difference between the new measured energy usage of the product and the amount stated on the original Energy Guide label, as well as payments for future incremental energy usage for the expected useful life of the refrigerator. Under its agreement with DOE, LG will modify its test procedure to assure that customers have accurate information going forward.

DOE is also establishing third party testing and verification for its managed appliance products beyond the testing and verification already underway for its lighting products. This new work follows some of the inquiries made in light of the LG issue and coincides with recommendations for program improvement.

#### CONCLUSION

DOE is continually working to seize the opportunities that energy efficiency provides to achieve greater savings of energy, electricity consumption, and greenhouse gas emissions. Some of the greatest opportunities for energy savings are in the appliances and products that consumers and businesses use every day. The Department is therefore continuing its progress in promulgating tighter commercial and residential appliance standards and, jointly with EPA, developing ENERGY STAR

<sup>3</sup>Source: [http://www.energystar.gov/ia/partners/manuf\\_res/2007FinalSalesData.xls](http://www.energystar.gov/ia/partners/manuf_res/2007FinalSalesData.xls).

<sup>4</sup>The National Electrical Manufacturers Association of America (NEMA) and <http://yosemite.epa.gov/opa/admpress.nsf/dc57b08b5acd42bc852573c90044a9c4/970f05bf0bc5d9aa852573d10055b38d!OpenDocument>

<sup>5</sup>Source: [http://www.energystar.gov/ia/products/downloads/CFL\\_Market\\_Profile.pdf](http://www.energystar.gov/ia/products/downloads/CFL_Market_Profile.pdf).

ratings for new categories of energy efficient products. DOE is constantly modernizing, improving, and tailoring the two programs to respond to changing market conditions, while being responsive to legislative and regulatory requirements.

Thank you again for holding this hearing and for the opportunity to discuss the Department's Appliance Standards Program and ENERGY STAR. I am happy to answer any questions that the Committee Members may have.

(Please see attachment for list of standards completed since EPACK 2005 and rulemakings to be completed by 2011.)

## ATTACHMENT

### APPLIANCE STANDARDS PROGRAM

Standards Completed Since EPACT 2005	Rulemakings to be Completed by 2011
Package Terminal Air Conditioners and HeatPumps	EISA 2007 En Masse Standard
Distribution Transformers	Clothes Washers, Commercial
Residential Furnaces	Ranges and Ovens (Electric and Gas) and Microwave Ovens
Residential Boilers	Refrigerated Bottle or Canned Beverage Vending Machines
Small Furnaces	Incandescent Reflector Lamps
Mobile Home Furnaces	General Service Fluorescent Lamps
Small Electric Motors Determination	External Power Supplies, non-Class A (Determination)
Ceiling Light Fan Kits	Small Electric Motors
Commercial Refrigeration Equipment	Water Heaters, Residential
EPACT 2005 En Masse Standard*	Direct Heating Equipment
	Pool Heaters
	High-Intensity Discharge Lamps (Determination)
	Refrigerators, Residential
	Fluorescent Lamp Ballasts
	Room Air Conditioners
	Clothes Dryers
	Central Air Conditioners and Heat Pumps
	Battery Chargers
	External Power Supplies, Class A
	ASHRAE 90.1 Products
	Residential Clothes Washers

\*The En Masse Standard codified Congressionally prescribed standards.

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

**STATEMENT OF BRIAN MCLEAN, DIRECTOR, OFFICE OF  
ATMOSPHERIC PROGRAMS, OFFICE OF AIR AND RADIATION,  
ENVIRONMENTAL PROTECTION AGENCY**

Mr. MCLEAN. Thank you. Good morning, Chairman Bingaman and members of the committee. I am Brian McLean. I'm Director of EPA's Office of Atmospheric Programs where EPA's energy efficiency and climate programs reside.

I'm pleased to testify today concerning the Appliance Standards Improvement Act of 2009, particularly regarding Section 3 which proposes additional requirements for the implementation of the Energy Star program at the EPA and the United States Department of Energy. I want to comment on these additional requirements because they would have a significant impact on activities at the EPA as EPA manages about 90 percent of the Energy Star program within the Federal Government including more than 50 of the 60 product categories currently covered by the program as well as our work on new homes construction and commercial and industrial facility energy management strategies.

I would like to make three points this morning.

First, EPA appreciates the committee's interest in the Energy Star program. Energy Star has been an important part of improving energy efficiency and reducing greenhouse gas emissions across the country since initiated by EPA in 1992. The program has grown to not only promote efficient products, but also energy efficient management practices and services across the residential, commercial and industrial sectors.

These sectors are responsible for about 55 percent of the carbon dioxide emissions from fossil fuel use in the country and their emissions are growing. Importantly these sectors offer large opportunities to reduce emissions of greenhouse gases at low cost. Costs that are about half those of building the new energy supply we would otherwise need.

Energy Star helps capture these low cost reductions in greenhouse gas emissions by addressing barriers that stop these energy efficiency improvements from occurring. These barriers include:

Split incentives between builders and buyers and landlords and tenants;

Lack of consumer information; and

High transaction costs among other things.

As of 2007 EPA efforts with Energy Star are helping Americans avoid the greenhouse gas emissions equivalent to those of 27 million vehicles while saving \$16 billion per year on energy bills. These efforts complement many other Federal and State policies and programs such as building codes, appliance standards, research and development and energy efficiency in public housing. The Energy Star program will remain important as climate legislation is advanced.

Many of the market barriers present today that limit investment in low cost energy efficiency will exist even when climate legislation is passed, as many of these barriers are not substantially

changed by the changes in energy prices likely to result from such legislation.

Second, while EPA appreciates the committee's interest in the Energy Star program, EPA and DOE do not support Section Three of the bill, as currently written, which directs agency coordination and standardization of program management. The agencies believe that these purposes can be best addressed through agency led efforts to improve interagency coordination, identify and address issues where they arise, and increase communication with stakeholders about program processes and decisionmaking.

The administration is aware of these issues, and is committed to addressing them and working with program stakeholders to continue to build on the success of the Energy Star program and extend the benefits it provides in reduced energy use and fewer emissions of greenhouse gases. Specifically, EPA and DOE will, within 45 days, provide the committee written documentation on the resolution of these issues.

Third, many efforts are underway relative to provisions in the draft bill. EPA actively undertakes revisions in Energy Star specifications as market share grows and is addressing the need for enhanced testing of Energy Star qualifying products. Specifically, EPA collects market share data on Energy Star qualifying products annually, assesses which product categories warrant a revision based on a range of market factors, publishes the agency's plans and undertakes necessary revisions.

EPA is currently revising seven specifications, completed important revisions last year such as with large screen televisions, and will take on additional revisions next year. EPA is also actively addressing additional testing of Energy Star label products.

EPA manages a compliance audit program which includes verification testing administered by EPA using third party independent laboratories and quality assurance testing for lighting products in particular. EPA has now conducted verification testing across many product categories and is phasing in verification testing requirements as part of the Energy Star partnership starting with computers. Further, given the growth of the Energy Star program and the number of qualified products on the market, EPA is also working to leverage third party certification programs.

In conclusion, I appreciate the interest of the committee in addressing issues that it believes will continue the success of the Energy Star program. EPA and DOE believe that these issues can best be addressed through agency processes. EPA is committed to working with DOE to address these issues and to report back to the committee.

In addition, I hope my testimony has helped to illustrate activities underway at the EPA to keep Energy Star specifications up to date, and to enhance verification testing of products using the Energy Star label. Thank you.

[The prepared statement of Mr. McLean follows:]

PREPARED STATEMENT OF BRIAN MCLEAN, DIRECTOR, OFFICE OF ATMOSPHERIC PROGRAMS, OFFICE OF AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Good morning, Chairman Bingaman and members of the Committee. Thank you for the opportunity to testify on behalf of the Environmental Protection Agency concerning the Appliance Standards Improvement Act of 2009 (the Act) and the EN-

ENERGY STAR program. My name is Brian McLean and I am Director for the Office of Atmospheric Programs within EPA's Office of Air and Radiation, the office that oversees EPA's energy efficiency programs including the ENERGY STAR program. EPA has been very involved in promoting greater energy efficiency since 1991 because the way we use and produce energy is one of the largest contributors to greenhouse gas emissions and some criteria pollutants in this country.

#### OVERVIEW

My testimony is focused on Section 3 of the Appliance Standards Improvement Act, the section entitled the ENERGY STAR program. This section proposes additional requirements for the implementation of the ENERGY STAR program at the EPA and the US Department of Energy. I want to comment on these additional requirements because they would directly affect a broad set of activities at the EPA, as EPA manages about 90 percent of the ENERGY STAR program across the federal government (including more than 50 of the 60 product categories, all of the work on ENERGY STAR new homes and all of the ENERGY STAR work to improve the energy efficiency of commercial and industrial buildings). I will also provide an overview of the EPA's role, experience, and key activities relative to the ENERGY STAR program in support of EPA's comments.

#### COMMENT ON SECTION 3 OF THE ACT

EPA and DOE do not support Section 3 of the draft bill entitled ENERGY STAR Program, which directs agency coordination and standardization of program management. The Agencies believe that these purposes can be best addressed through Agency-led efforts to improve interagency coordination, identify and address issues where they arise, and increase communication with stakeholders about program processes and decision-making. The Administration is aware of these issues and is committed to addressing them and working with program stakeholders to continue to build on the success of the ENERGY STAR program and extend the benefits it provides in reduced energy use and fewer emissions of greenhouse gases. Specifically, EPA and DOE will, within 45 calendar days, provide to the Committee written documentation on the resolution of these issues.

#### THE ENERGY STAR PROGRAM

In support of this recommendation I would like to review EPA's role and experience with the ENERGY STAR program and outline EPA's activities in several areas addressed in the Act.

EPA introduced ENERGY STAR in 1992 as a voluntary labeling program to reduce greenhouse gas emissions by identifying and promoting energy efficient products.<sup>1</sup> Since then, the program has grown to be a successful and important greenhouse gas mitigation and pollution prevention strategy, offering energy efficiency solutions across the residential, commercial, and industrial sectors. It has grown to not only promote efficient products but also energy efficient management practices and services across these three sectors. In each sector, the ENERGY STAR works to dismantle market barriers limiting investment in energy efficiency and bring practical solutions to the residential, commercial and industrial sectors.<sup>2</sup>

The ENERGY STAR program will remain important as climate legislation is advanced. Many of the market barriers present today that limit investment in low cost energy efficiency will exist even when climate legislation is passed as many of these barriers are not substantially changed by the changes in energy prices which may result from such legislation.

ENERGY STAR addresses the roughly 40%<sup>3</sup> of carbon dioxide (CO<sub>2</sub>) emissions from fossil fuel use in the country that is associated with commercial and residential buildings, in addition to the CO<sub>2</sub> emissions from the industrial sectors. Improving the energy performance of residential and commercial buildings and industrial facilities in the United States offers a particularly large and cost-effective opportunity for realizing greenhouse gas reductions in both the near and long terms as documented recently in the 4th Assessment Report of the Intergovernmental Panel on

<sup>1</sup> EPA signed a Memorandum of Cooperation with DOE in 1996 providing DOE with program responsibilities for a set of products and EPA with program responsibilities for other products, new home construction, and commercial building efforts.

<sup>2</sup> ENERGY STAR and Other Climate Protection Partnerships: 2007 Annual Report (US EPA, 2008)

<sup>3</sup> Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006 (US EPA, 2008)



Climate Change (IPCC) and the 2007 study by the consulting firm McKinsey & Company, “Reducing GHG Emissions: How Much at What Cost?”

The program addresses market barriers such as split incentives between home builders and buyers, lack of information and awareness, high transaction costs, lack of qualified contractors, and lack of common measurement approaches for building energy efficiency. It complements the many other important energy efficiency policies undertaken throughout the Federal government such as appliance standards, R&D, and energy efficiency in public and federally-assisted housing.

The results from the ENERGY STAR program for the products and services that EPA manages are substantial. In 2007, Americans with the help of EPA’s efforts under ENERGY STAR, prevented 40 million metric tons of greenhouse gas emissions—equivalent to the annual emissions from 27 million vehicles—and saved more than \$16 billion on their utility bills<sup>4</sup>. And these benefits are on track to nearly double<sup>5</sup> in 10 years as more households, businesses, and organizations rely on ENERGY STAR for guidance on investing in energy efficient products, practices, and policies. Note that in December 2008, the EPA Inspector General (IG) reported that improvements were necessary to validate the ENERGY STAR benefits. The IG identified a number of steps for EPA to take to improve its benefits estimates which EPA estimates could have impacted the 2006 benefits estimates by 2 to 3 percent, either up or down. As this point, many of these steps have been completed and incorporated into the 2007 benefits estimates provided above. We are currently pursuing two additional expert and peer-reviews of the Agency’s methods and will incorporate recommendations from these reviews as they become available.

Further, ENERGY STAR is now a national platform for energy efficiency with strong public recognition and positive influence on many consumer decisions; and it is a platform that can continue to expand and achieve greater results. Recent surveys show<sup>6</sup>:

- More than 70% of U.S. households recognize the ENERGY STAR label;
- More than 35% of households knowingly purchased at least one ENERGY STAR qualifying product in the last twelve months, and
- Eighty percent of purchasing households say they are likely to recommend ENERGY STAR to others showing that ENERGY STAR is positioned for continued growth.

And, more than 12,000 organizations have partnered with the ENERGY STAR program to advance energy efficiency across the key sectors in the US economy.<sup>7</sup>

EPA’s responsibilities and strategies with the ENERGY STAR program, and which have led to the results cited above, constitute a large majority of the program and include:

- **Efficient Products.** EPA manages the ENERGY STAR label across about 50 product categories, and DOE offers the ENERGY STAR label for almost ten additional product categories. The EPA-managed product categories include heating and cooling equipment, consumer electronics, office equipment and certain lighting. ENERGY STAR identifies efficient products above federal minimum efficiency standards, where they exist; however, for over half of the product categories, there are no minimum efficiency standards. Many ENERGY STAR qualifying products offer consumers savings of 30 to 60%, relative to typical models, and up to 30 percent savings in a household using all ENERGY STAR products.<sup>8</sup>
- **Efficient New Home Construction.** EPA has managed the ENERGY STAR program for new homes since 1995. Today, ENERGY STAR qualified homes are typically 20 to 30 percent more efficient than standard homes. ENERGY STAR promotes the best available, off-the-shelf technology as well as effective construction practices. Significant numbers of new homes are being built to ENERGY STAR requirements; about 12 percent of all new homes nationally in 2007, with 20 percent or more market penetration in 10 states and more than

<sup>4</sup> ENERGY STAR Overview of 2007 Achievements (US EPA, 2008)

<sup>5</sup> Ibid.

<sup>6</sup> National Awareness of ENERGY STAR for 2007: Analysis of 2007 CEE Household Survey. (US EPA, 2008)

<sup>7</sup> ENERGY STAR and Other Climate Protection Partnerships: 2007 Annual Report (US EPA, 2008).

<sup>8</sup> ENERGY STAR and Other Climate Protection Partnerships: 2007 Annual Report (US EPA, 2008).

20 metropolitan areas.<sup>9</sup> More than 5,000 builders have partnered with EPA,<sup>10</sup> offering ENERGY STAR homes in every state in the country. EPA is developing the next generation of ENERGY STAR specifications to make these homes even more efficient.

- **Affordable Homes.** EPA is working with the Department of Housing and Urban Development (HUD), DOE, and others to bring ENERGY STAR to HUD's major affordable housing programs, particularly public housing. HUD now provides bonus points through its competitive grant programs for use of the ENERGY STAR label; both for products and new homes, and local communities are also adopting the ENERGY STAR label as part of HUD's formula grant programs. EPA has also worked with many state housing finance agencies (HFAs) to promote ENERGY STAR products and homes in their funding criteria for housing projects.
- **Existing Home Improvements.** EPA and DOE developed Home Performance with ENERGY STAR as a whole-house retrofit program that provides homeowners with guidance and services for going beyond the purchase of efficient products and helping them tap into the low cost efficiency improvements in their homes. This program targets the low cost energy efficiency opportunities in the more than 100 million existing homes in this country, particularly the more than 40 million homes that were constructed before the existence of modern energy codes.<sup>11</sup> EPA and DOE have now partnered with 20 State and local program sponsors of Home Performance with ENERGY STAR and estimates that these programs can help homeowners save 20 percent on average on their energy bills. In addition, EPA has developed an ENERGY STAR program for the proper installation of heating and cooling equipment. Heating and cooling typically represent almost 50 percent of a household energy bill, and studies indicate that more than half of central air conditioners may be improperly installed, leading to higher demand on peak energy days.<sup>12</sup>
- **Commercial and Institutional Buildings.** EPA has managed ENERGY STAR programs in the commercial sector since 1993 and now works with thousands of public and private organizations to advance superior energy management at the organizational level, provide a range of technical resources and trainings, and help organizations achieve energy savings of 10 to 30 percent across their entire suites of buildings. This includes an initiative to assist small business and congregations that has engaged more than 3,300 organizations.<sup>13</sup>
- **Standardized Measurement and Labeling of Commercial Building Energy Use.** An important foundation of the ENERGY STAR program is the EPA-developed standardized commercial building energy performance rating system, like the miles per gallon rating for vehicles, which compares the energy use of an individual building against the national stock of similar buildings using a 1 to 100 point rating system. EPA developed this system because of a wide variation in commercial building energy use (on a per square foot basis) that is not closely tied to the age of the building or the presence or absence of newer technologies. This system enables commercial building owners and managers to measure how well building systems are integrated, operated, and maintained and to set and measure progress toward energy performance goals. The system now applies to more than 70 percent of the commercial square footage across the country and continues to grow. Commercial building owners and operators have now used the system to rate the energy efficiency of 83,000 buildings or about 16 percent of commercial square footage in the country.<sup>14</sup> The system is being used by a number of states and municipalities to assist in their building energy use disclosure policies. For example, the State of California recently passed AB 1103 which requires commercial building owners to disclose their energy performance score at any time a property is leased, bought, sold or financed. EPA also offers the ENERGY STAR label to the most efficient of these buildings across the country. More than 6,200 commercial buildings have earned the ENERGY STAR label and these buildings are using about 35% less energy than average ones.<sup>15</sup> Achieving the label is becoming increasingly important. For example, CoStar, the leading multiple listing service for U.S. Commercial real estate

<sup>9</sup> *ibid.*

<sup>10</sup> *ibid.*

<sup>11</sup> U.S. Census Bureau. American Community Survey (2006).

<sup>12</sup> ENERGY STAR and Other Climate Protection Partnerships: 2007 Annual Report (US EPA, 2008).

<sup>13</sup> *Ibid.*

<sup>14</sup> ENERGY STAR Overview of 2008 Achievements (US EPA, 2009)

<sup>15</sup> EPA Press Release, March 3, 2009.

properties, now shows which buildings for lease or sale have earned an ENERGY STAR label, and the Minnesota Governor called for the achievement of 1,000 ENERGY STAR buildings across the state by 2010.

- New Commercial Building Construction. EPA has offered ENERGY STAR tools and resources for commercial new construction since 2004. The cornerstone of this effort is the Designed to Earn the ENERGY STAR graphic which can be used on building plans for buildings that have been designed to achieve ENERGY STAR performance levels once in use. These buildings can apply for the ENERGY STAR once there is sufficient data.
- Industrial Energy Efficiency. EPA has managed an ENERGY STAR industrial energy efficiency program since 2000. This program area also promotes superior energy management at the organizational level, provides a range of technical resources and trainings, and helps organizations achieve significant energy savings across all of their facilities. EPA works with many diverse industrial organizations, through targeted efforts with more than 15 specific industrial sectors, and through a partnership with the National Association of Manufacturers to reach medium and smaller sized organizations.
- International Partners. EPA is working with international partners, including Australia, Canada, the European Union, Japan, New Zealand, and Taiwan, who are implementing one or more parts of the ENERGY STAR program in their own countries and regions.

#### IMPLEMENTATION OF THE ENERGY STAR PROGRAM

EPA spends significant time and resources implementing the ENERGY STAR program in a consistent manner, protecting the integrity of the label and program, and supporting core activities across the entire ENERGY STAR program at EPA and DOE. EPA manages the following activities, several in conjunction with DOE:<sup>16</sup>

- Establishing ENERGY STAR requirements for product categories using criteria that are employed consistently across the program;
- Revising ENERGY STAR product specifications once sufficient progress is made to increase market penetration and there is a new level for the ENERGY STAR requirements that is consistent with the program criteria;
- Monitoring the use of the ENERGY STAR logo use across the 40,000 or more products in which it is used to ensure proper use as well as monitoring for use on ineligible products and following up as necessary;
- Having products tested to ensure ENERGY STAR labeled products meet ENERGY STAR specifications and auditing buildings to ensure they comply with requirements;
- Developing, implementing, and monitoring third-party testing programs for product categories where these testing programs are determined to be necessary;
- Assessing consumer awareness of and experience with ENERGY STAR;
- Tracking the partnership (and licensing) agreements with the more than 12,000 program partners;
- Assuring partner outreach and product labeling materials are consistent with the ENERGY STAR program guidelines;
- Providing consumer information through Website, hotline, and publication distribution system; and
- Evaluating the results of the program.

Several of these areas are described in greater detail below as the Act includes related provisions.

#### *Establishing and Revising ENERGY STAR Specifications*

EPA consistently follows a set of guiding principles, which have proven to address existing market barriers and lead to significant results, to establish the eligibility criteria for an ENERGY STAR product category.<sup>17 18</sup> ENERGY STAR is designed to be easy for consumers as a binary (yes/no) label and is technology neutral across a product category to avoid having the government pick winners and losers or inadvertently locking in a specific approach. The criteria are established so that ENERGY STAR products will not sacrifice performance or quality and will offer energy savings with attractive paybacks to the buyer—such as two years or less—if there

<sup>16</sup> Maintaining the Value of ENERGY STAR: 2007 Report (US EPA, 2008)

<sup>17</sup> The ENERGY STAR® Label: A Summary of Product Labeling Objectives and Guiding Principles, USEPA, 2003.

<sup>18</sup> Building a Powerful and Enduring Brand: The Past, Present, and Future of the ENERGY STAR® Brand (Interbrand, 2007)

are higher initial first costs. Currently, two-thirds of the product categories under ENERGY STAR are offering efficient products with no price premium, and these product categories are providing the majority of the energy savings from the product labeling part of the ENERGY STAR program.<sup>19</sup>

EPA collects product shipment data from participating manufacturers annually both to evaluate the impact of the program and to assess opportunities for specification revisions. To determine when a specification revision is necessary, EPA monitors the patterns of market share growth and other factors, such as relevant legislation, over time. EPA is currently engaged in seven product specification revisions as listed on the ENERGY STAR Web site. The market share of ENERGY STAR products for these product categories when EPA began the specification revisions ranged from 35 to 50 percent. EPA published a report in 2008 showing the market share of ENERGY STAR qualifying products in each product category for 2007 and whether or not the Agencies were considering a specification revision. When specification revisions are undertaken the principles outlined above are adhered to so as to maintain a consistent meaning of the program, or brand promise, from the consumer perspective.

*Verification Testing to Ensure Compliance with ENERGY STAR Requirements*

EPA manages a Compliance Audit Program as part of its ENERGY STAR program efforts which includes verification testing administered by EPA using third-party independent laboratories and quality assurance testing for lighting products, in particular. EPA has now conducted verification testing across 14 product categories, and is phasing in verification testing requirements (in addition to qualification testing) as part of the ENERGY STAR partnership, starting with computers. In conjunction with increased verification testing, EPA has collaborated with accreditation bodies to establish requirements for laboratories testing ENERGY STAR products and is phasing in a requirement that qualification testing be conducted at impartial, accredited laboratories. For residential light fixtures, EPA has established quality assurance testing to drive enhanced quality assurance and quality control processes for manufacturers, which has been shown to be lacking for light fixtures. Further, given the growth of the ENERGY STAR program and the number of qualified products on the market, EPA is also working to leverage third-party certification programs.

CONCLUSION

ENERGY STAR is an important energy efficiency program for helping consumers and public and private organizations lower their costs and reduce emissions of greenhouse gases. We appreciate the interest of the Committee in addressing issues that it believes will continue the success of the program. However, EPA believes that Section 3 should be removed. EPA is committed to working with DOE to address the issues that need to be addressed and to report back to the committee on our resolution in 45 days. In addition, I hope my testimony has helped illustrate activities underway at the EPA to keep ENERGY STAR specifications up to date and to enhance verification testing of products using the ENERGY STAR label so as to help clarify that these issues can be addressed without additional legislation.

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

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

Mr. NADEL. Ok. Thank you, Mr. Chairman, madame ranking member.

Federal appliance efficiency standards were first adopted in 1987 and have been augmented by Congress four times since then most recently in the 2007 Energy bill. The program has a long history of bipartisan support. In fact most of the appliance standards laws were signed by Republican Presidents beginning with President Reagan.

<sup>19</sup> Maintaining the Value of ENERGY STAR: 2007 Report (US EPA, 2008)

My organization the American Council for an Energy Efficient Economy, known as ACEEE, estimates that these standards will reduce United States electricity use. Peak demand in 2010 by about 10 percent and will reduce overall 2010 energy use by about 5 percent. These are very large savings. We estimate that net savings to consumers from standards that have already been adopted or already law will exceed more than \$400 billion.

The majority of these standards have been set by Congress based on consensus agreements between manufacturers and energy efficiency organizations such as mine. At times this committee has put standards in bills that do not quite have consensus in an effort to push parties toward compromise before final legislation passes. This is what the committee successfully did in 2007 with general service incandescent lamp standards. Where there is not consensus Congress has often delegated decisions to DOE allowing each side to make their arguments and then having the Secretary make the final decision.

The proposed Appliance Standards Improvement Act of 2009, sometimes abbreviated ASIA. Builds on these solid foundations and we support this bill. We thank Senators Bingaman and Murkowski for introducing this bill and for moving the discussion forward.

The heart of ASIA is new efficiency standards on portable lighting fixtures such as floor and table lamps. The proposed standard was developed by the American Lighting Association, Mr. Upton and ACEEE and built largely on the standard adopted by California last year. The standard provides with a range of compliance options and will save substantial energy. We estimate that by 2020 this standard alone will save enough electricity to power 350,000 average American homes.

ASIA also contains several useful reforms of the Appliance Standards and Energy Star programs that we also support. While this is a solid bill we believe it can be improved by incorporating several improvements.

First, several technical amendments we suggest to the portable lighting fixture standard which are noted on the back of my testimony. I believe ALA has signed off on these. We've also signed off on one amendment I believe they are going to be suggesting.

Second, the 2007 Energy bill contained several drafting errors and technical corrections to these errors should be incorporation in the new legislation. These have all been provided to staff and have the support of relevant trade associations.

Third, we recommend adding new standards on outdoor lighting fixtures to the bill based on a proposal now being developed by Philips Lighting, ACEEE and other lighting manufacturers and energy efficiency groups. We plan to provide draft legislative language to committee staff within the next few days which we see as an initial draft, a work in progress. We hope to refine that working with manufacturers and others just as we did with the incandescent lamp standard.

Fourth, we suggest that new standards be added to the bill on drinking water dispensers, hot food holding cabinets and portable electric spas. Pictures and descriptions of these products are contained in my written testimony. Standards on these products have been adopted in three to seven states depending on the product.

We are now vetting this proposal with manufacturers. Have received positive initial responses. But we're still working with them to try to get final sign off.

Fifth, Senator Menendez sent all of the witnesses here at this table some potential amendments to the Standards program. We support these amendments. Very briefly let me talk about one or two.

First amendment would direct DOE to consider standards on incandescent reflector lamps that are now excluded from Federal standards. These are a type of lamp called a BR or a bulge reflector lamp. Here's a sample that has a slight bulge in the outside which basically differentiates it very slightly from current products.

These are relatively low cost, relatively inefficient. There are efficient products made. This happens to be one by Philips.

It's the type of product that Congress has already required for general service incandescent lamps. But the BR lamps are exempted. We suggest that you direct DOE to develop these standards so that lamps like this can become common practice.

Second I will mention that provision about multiple metrics for standards. For many products a single metric isn't adequate for characterizing the efficiency of a product. Indeed as shown in our table in my written testimony, 11 times Congress has established standards using more than one metric.

But DOE council has argued that DOE cannot issue standards with more than one network. Just last week DOE rejected a consensus standard for commercial furnaces only because it contained more than one efficiency requirement. The amendment that Senator Murkowski has floated would clarify that DOE can adopt standards with more than one metric, does not require multiple metrics it just allows them.

Each standard will still need to be technically feasible and economically justified. Some manufacturers argue that multiple metrics on a product would be costly or onerous. But this is a type of argument they should make to DOE to say that this is not economically justified. We believe DOE should have the power to set the multiple metric standards and then the appropriate arguments to be made at the rulemaking level.

In conclusion the various amendments we support would more than quadruple the energy savings resulting from this bill and would improve program implementation decisionmaking. We are open to discussing all of these suggestions with committee members and their staff and with manufacturers and other interested parties. We hope that consensus can be reached on modified versions of all of these provisions before legislation is signed into law.

Thank you for your attention and I look forward to your questions.

[The prepared statement of Mr. Nadel follows:]

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

#### SUMMARY

Federal appliance efficiency standards were first adopted in 1987 and were augmented by Congress in 1988, 1992, 2005 and 2007. The program has a long history

of bipartisan support. My organization, the American Council for an Energy-Efficient Economy (ACEEE), estimates that without these standards and subsequent DOE rulemakings, U.S. 2010 electricity use and peak electric demand would be about 10% higher and U.S. total energy use about 5% higher. Net savings to consumers from standards already adopted will exceed \$400 billion by 2030 (2008 \$).

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

The proposed Appliance Standards Improvement Act of 2009 (ASIA) builds on these solid foundations and we support this bill. We thank Senators Bingaman and Murkowski for introducing this bill and moving the discussion forward on how best to improve the appliance standards program.

The heart of ASIA is new efficiency standards on portable lighting fixtures, such as floor and table lamps. The proposed standard was developed by the American Lighting Association and ACEEE and builds largely on a standard adopted by California last year. The standard provides a range of compliance options and will save substantial energy—by 2020 this standard alone will save enough electricity to power 350,000 average American homes.

ASIA also contains several useful reforms to the appliance standards and ENERGY STAR programs.

While ASIA is a solid bill, we believe it can be improved by incorporating:

- Several technical amendments to the portable lighting fixture standard as described in my testimony;
- Technical amendments to the standards adopted in EISA that are needed to correct drafting errors;
- Adding new standards on outdoor lighting fixtures, based on a proposal now being developed by Philips Lighting, ACEEE, and other lighting manufacturers and energy efficiency groups;
- Adding new standards on drinking water dispensers (water coolers) and hot food holding cabinets that are based on ENERGY STAR specifications and have been adopted in California, Connecticut, Maryland, New Hampshire, Oregon, Rhode Island, and the District of Columbia;
- Adding new standards on portable electric spas (hot tubs) adopted in California, Connecticut, and Oregon;
- Adopting several improvements to the appliance standards program proposed by Senator Menendez that:
  - Direct DOE to consider standards on several types of reflector lamps;
  - Allow states to help enforce federal standards in federal courts using federal procedures;
  - Allow DOE to consider multiple standard metrics for products;
  - Provide states more flexibility to develop performance-based building codes;
  - Simplify the process for states to obtain waivers from federal preemption while keeping the main decision-criteria in place; and
  - Direct DOE to undertake a rulemaking to establish regular reporting of data needed to support the standards, ENERGY STAR and related programs.

These provisions would more than quadruple the energy savings resulting from ASIA and would improve program implementation and decision-making going forward. We are open to discussing all of these suggestions with Committee members and their staff, and with manufacturers and other interested parties, so that hopefully consensus can be reached on modified versions of all of these provisions.

#### INTRODUCTION

My name is Steven Nadel and I am the Executive Director of the American Council for an Energy-Efficient Economy (ACEEE), a nonprofit organization dedicated to increasing energy efficiency to promote both economic prosperity and environmental protection. I have worked actively on appliance standards issues for more than 20 years at the federal and state levels and participated actively in discussions that led to enactment of federal standards legislation in 1987 (NAECA), 1988 (NAECA amendments), 1992 (EPAAct), 2005 (EPAAct), and 2007 (EISA).

Without these laws, plus subsequent DOE rulemakings updating some of these standards, ACEEE estimates that U.S. 2010 electricity use and peak electric demand would be about 10% higher and U.S. total energy use about 5% higher. Net

savings to consumers from standards already adopted will exceed \$400 billion by 2030 (2008 \$).<sup>1</sup>

However, much more savings are possible through a combination of further updates to existing standards, plus adding new products to the federal standards program. ACEEE estimates that U.S. energy use in 2030 can be reduced by about 2.5 quadrillion Btu's (about a 2.2% reduction from projected levels) and carbon dioxide emissions can be reduced by about 165 million metric tons, a 2.6% reduction from projected levels.<sup>2</sup>

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

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

The proposed Appliance Standards Improvement Act of 2009 (ASIA) builds on these solid foundations. We thank Senators Bingaman and Murkowski for introducing this bill and moving the discussion forward on how best to improve the appliance standards program. In the sections below I comment on the provisions in ASIA, and also on some additional provisions that we recommend be added to increase the energy savings achieved and improve the appliance standards program's processes.

#### PROVISIONS IN ASIA

The heart of ASIA establishes new efficiency standards on portable lighting fixtures, such as the floor and table lamps most of us use in our homes. Other significant provisions in ASIA relate to appliance test procedures, a schedule for DOE to rule on petitions, compliance with federal standards, and ENERGY STAR. We discuss each in turn.

##### STANDARDS FOR PORTABLE LIGHTING FIXTURES AND GU-24 LAMPS (SECTIONS 5 AND 6)

Standards for portable lighting fixtures and GU-24 lamps were established in California in 2008 and this provision makes this standard a national one (section 5). This standard transitions new fixtures away from use of inefficient screw-in incandescent lamps, and towards an array of more efficient choices including compact fluorescent lamps, LED lighting, or low/medium wattage halogen lamps. A variety of options are provided to manufacturers and consumers, so an appropriate choice can be found for all applications. For example, under the provision, there are two main compact fluorescent options—a dedicated ENERGY STAR compact fluorescent fixture or including ENERGY STAR screw-in compact fluorescent lamps in the box with the fixture. Consumers who truly dislike compact fluorescent lamps can use the included lamps in other sockets or give them to friends. The provision also builds upon current DOE and EPA ENERGY STAR standards for LED fixtures, providing guidance for an important emerging type of light.

In addition, the GU-24 provision follows California rules to prevent a new type of universal compact fluorescent base (GU-24) from being used with incandescent lamps. Unlike present bases, the GU-24 base can be used with many types of compact fluorescent lamps. Industry, utilities, and ENERGY STAR staff are planning to widely promote its use as a way to guarantee lighting energy savings. However, these efforts would be undermined if GU-24 incandescent lamps are introduced because no energy is saved if incandescent lamps are used in GU-24 fixtures. Section 6 would prevent this from happening.

In the process of negotiating these federal provisions, a few refinements to the California regulations were negotiated between ACEEE and the American Lighting Association (the industry trade association for these products) to strengthen some of the requirements, gradually phase in the requirement for testing for whole system efficacy, and exclude purely decorative fixtures from the whole system efficacy requirements. For example, for LED fixtures over the 2012-2016 period, the bill per-

<sup>1</sup> Calculations from a forthcoming ACEEE report to be published spring 2009.

<sup>2</sup> Preliminary estimate of savings can be found at: [http://www.standardsasap.org/documents/DOE\\_schedule.pdf](http://www.standardsasap.org/documents/DOE_schedule.pdf). Percentage reductions are relative to reference case in EIA's 2009 Annual Energy Outlook.



mits these fixtures to either meet the current DOE ENERGY STAR LED fixture specification, or provides an option for a higher “light engine” efficacy (“efficacy” is a lighting industry term for efficiency), without requiring testing of whole system efficacy. As of 2016, new standards will apply, to be developed by DOE by 2014. Given California’s pioneering role, this provision also allows California to revise its current standard, but this authority expires in 2014. Similar provisions were included in EISA and EPAct 2005, when California standards were adopted as federal standards. These changes represent thoughtful compromises on these issues, compromises that have the support of both ACEEE and ALA.

ACEEE estimates that this provision will reduce U.S. electricity use in 2020 by about 3.9 billion kWh, enough to serve about 350,000 average U.S. residential customers for a year.<sup>3</sup> These standards will reduce peak electric demand in 2020 by about 570 MW, equivalent to a typical new coal-fired power plant or two typical natural gas-fired power plants. Net present value financial savings to consumers will exceed \$600 million from purchases through 2030, accounting for both the value of the energy saved and the modestly higher purchase cost for complying fixtures. By 2020, this standard will reduce carbon dioxide emissions by about 2.62 million metric tons, helping to make a significant dent in greenhouse gas emissions. This is equivalent to taking 485,000 cars off the road for a year.<sup>4</sup>

While we support this provision, we think it can be improved in four respects:

1. The bill references a specific Illuminating Engineering Society (IES) specification for testing portable lighting fixtures for overall efficiency. Since the bill also sets standards for “light engine efficacy,” it should also reference a pending IES specification for testing light engine efficacy.

2. The bill permits GU-24 fixtures as a compliance path, but establishes no standards for these fixtures. We recommend that the bill reference the same ENERGY STAR specification for GU-24 fixtures as it references for dedicated compact fluorescent lamp fixtures. Since some GU-24 LED lamps are in development, the legislation should make clear that LED fixtures with GU-24 sockets must meet the LED requirements in the bill.

3. Change the maximum LED color temperature to 4000 K from 4200 K. 4000 K is a specific color category in the consensus industry specification developed by the Illuminating Engineering Society (IES). For this reason, there are no 4200 K LED lamps. The IES specification allows some testing leeway, so products do not need to be exactly 4000 K and still qualify.

4. The bill also permits halogen fixtures up to 100 Watts, but provides no efficiency standards for these products. We recommend that halogen lamps be required to meet efficiency levels similar to those Congress adopted for general service incandescent lamps as part of EISA. We are now trying to develop a specific proposal in discussions with ALA.

Specific language changes for the first three of these recommendations are attached to my testimony. We will forward our suggested language on the final recommendation when discussions are completed.

#### APPLIANCE TEST PROCEDURES

In 2007, EISA directed DOE to review and revise appliance test procedure changes over a seven-year period. But seven years is a long time and some revisions cannot wait. This provision allows interested parties to petition DOE to adopt changes to specific DOE test procedures. DOE reviews the proposal in line with established procedures and criteria and is given a deadline for making decisions. Direct final rules are permitted for consensus recommendations, per a provision added to the law in EISA. This provision thereby encourages consensus agreements that can accelerate updates and ease DOE’s workload. It also requires timely responses from DOE to petitions, something that is a problem. As an egregious example, a petition submitted by the California Energy Commission in May 2008 to repeal a useless television test procedure from 1977 has not even been acknowledged, let alone acted upon.

#### SCHEDULE FOR DOE TO RULE ON PETITIONS (SECTION 4)

Current law has a provision permitting interested parties to petition DOE to revise a specific standard. However, no deadlines are provided. This section gives DOE

<sup>3</sup>At 11,000 kWh/year per household, per EIA data.

<sup>4</sup>Based on 12,000 miles/vehicle each year, a fuel economy of 20 MPG, and 20 pounds of CO<sub>2</sub> emitted per gallon. There are 2,204.6 pounds per metric ton. With these assumptions each car emits about 5.44 metric tons of carbon dioxide equivalent annually.

180 days to respond to the petition, and if the petition is granted, three more years to publish a final rule on the standard.

#### STUDYING COMPLIANCE WITH FEDERAL STANDARDS (SECTION 7)

More than 40 products are now regulated and to our knowledge no one has ever conducted a systematic review on whether manufacturers are complying with the standard. Enforcement is important in order to ensure that energy savings are real, and to protect the vast majority of law-abiding companies from unscrupulous competitors. We have heard informal reports that some standards are not being fully followed. Some Congressional offices have expressed interest in improving standard enforcement. The first step in such efforts is to conduct a study to see what the problems are and where they lie. This provision would have DOE conduct such a study. We envision that DOE would hire one or more contractors to survey products on the market for each regulated product category, ascertaining as best as possible from available data which products are in compliance with standards and which are not. Such surveys would be made using the Web (manufacturer, wholesaler, and retailer sites), and by visiting a sample of retail stores. Some products on the market would be purchased and independently tested to see if they were in compliance or not.

#### ENERGY STAR (SECTION 3)

ENERGY STAR has been a valuable and very successful program to promote the sale of high efficiency products. The program was started by EPA, but for many years DOE has taken the lead on some products, under the terms of an interagency MOU. In October 2008, Consumer Reports published a report on ENERGY STAR, finding a few problems. Specifically, they found that a few manufacturers were distorting refrigerator test results, and since the program relied only on manufacturer testing, there was no mechanism to catch this problem. The article also noted that some appliance specifications needed updating, as indicated by the fact that a majority of products on the market earned the ENERGY STAR rating, although DOE and EPA generally target the top 25% of products for the label. Our understanding is that the agencies have been working to address these problems, but Section 3 requires them to take action. Specifically, it requires some type of independent certification or review of product testing for each product, while giving the agencies and each industry flexibility as to what type of certification/review most makes sense for a product. This provision also requires DOE and EPA to review the ENERGY STAR specification when the market share for a product category reaches 35%. If a review begins when market share reaches 35%, market share can grow considerably in the year or more it takes to complete the review, set a new specification, and put the new specification into effect. While 35% is a good review threshold for most products, there are exceptions (e.g., compact fluorescent lamps where ENERGY STAR is a quality mark and not just for the best products). Therefore, the provision permits the agencies to revise this percentage on a product-specific basis as part of their first review. We believe these provisions will improve the ENERGY STAR program, while giving the agencies needed flexibility.

#### RECOMMENDED ADDITIONS

We recommend several additions to ASIA including technical corrections to EISA, adding several new product standards, and adopting some amendments to appliance standard processes and procedures as recently suggested by Senator Menendez.

#### TECHNICAL CORRECTIONS

When the EISA conference negotiations were completed, a number of errors were made in compiling the final bill. We have worked with industry and Committee staff to identify these problems and develop suggested edits. We recommend that these technical corrections be added to the bill.

#### ADDITIONAL STANDARDS

In addition to portable lighting fixtures, a number of other products are ripe for adding to the appliance standards program. Below we recommend four specific products. We are talking to industry about all of these products. We anticipate reaching consensus on all or most of these in the next month. Placeholder language for three of these products is provided as an attachment to my testimony. We will provide recommended legislative language for outdoor lighting fixtures shortly.

### *Outdoor Lighting Fixtures*

Outdoor lighting fixtures are generally fairly high wattage products and are on for many hours each night. Outdoor lighting accounts for about 8% of U.S. lighting energy use and 2% of U.S. total electricity use. The largest outdoor lighting uses are roadways (streets and highways) and parking lots.<sup>5</sup> Current systems use a variety of lamp types, including incandescent, mercury vapor, low and high pressure sodium (yellowish light), and metal halide lamps. In the past few years, rapid technical strides have been made and a new generation of more efficient types is emerging including LED lighting and advanced metal halide and high pressure sodium lamps. In addition, efficiency can be improved with electronic ballasts, use of lighting controls, and improved fixture designs. Substantial energy can be saved by standards that steadily eliminate the least efficient fixtures from the market in favor of more efficient products.

Early this year Philips Lighting approached ACEEE and other efficiency groups<sup>6</sup> to explore the possibility of new mandatory standards for outdoor lighting. Proposals have been prepared and legislative language is being drafted. Recently, this coalition has begun reaching out to other major lighting manufacturers to seek their input and support. This is the same process that was used to develop the standards on general service incandescent lamps in EISA.

In its current form, the proposed standard would regulate the whole system efficiency of new outdoor lighting fixtures with an initial requirement of 50 lumens per watt, effective 2011, rising to 70 lumens per watt in 2013 and 80 lumens per watt in 2015 (existing fixtures would not be affected). Additional provisions would require 2-level or dimming controls and good lumen maintenance (maintenance of light levels over time). Advanced LED, metal halide, and high pressure sodium systems would all comply, but old technologies would not. The proposed standards would also outlaw the ongoing sale of the least efficient high light output outdoor lamps. New, more efficient replacements are readily available.

Philips Lighting has analyzed the likely savings from this standard and estimates that this standard would eventually save about 30,500 million kWh per year from fixture efficiency improvements alone, once existing fixtures are fully replaced. The bi-level controls would add additional savings. They estimate annual carbon dioxide emissions reductions of more than 16 million metric tons and annual energy bill reductions of about \$3.6 billion once all fixtures are replaced.<sup>7</sup>

### *Bottle-Type Water Dispensers*

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

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

<sup>5</sup> Navigant Consulting. 2002. U.S. Lighting Market Characterization. Washington, D.C.: Buildings Technologies Program, U.S. Department of Energy.

<sup>6</sup> Alliance to Save Energy, Appliance Standards Awareness Project, and Natural Resources Defense Council

<sup>7</sup> Cook, Keith. 2008. “Proposed Outdoor Lighting Efficiency Standards”. Washington, DC: Philips Lighting.

<sup>8</sup> Nadel, S., A. deLaski, M. Eldridge, and J. Kliesch. 2006. Leading the Way: Continued Opportunities for New State Appliance and Equipment Efficiency Standards. Washington, DC: American Council for an Energy-Efficient Economy.

ard and that DOE be directed to develop a revised standard by 2013, effective three years later.

I provide estimates of energy and economic savings for this proposal later in this testimony.

*Commercial Hot Food Holding Cabinets*

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

The ENERGY STAR specification sets a maximum idle energy rate issued for hot food holding cabinets of 40 Watts per cubic foot of measured interior volume. Appropriate insulation in hot food holding cabinets is the key mechanism to meet this specification. Insulated cabinets also have the advantage of quick preheat times, less susceptibility to ambient air temperatures, and a more uniform cabinet temperature. The recommended maximum idle energy rate translates to a 78% annual energy savings of 1,856 kWh relative to a basic, inefficient model. These energy savings cover the estimated additional cost of more efficient units within 3 years. Data is uncertain, but it appears that about 40% of hot food holding cabinet sales meet this specification.<sup>9</sup>

In December 2004, the California Energy Commission adopted this level as a statewide minimum standard, effective January 2006. Subsequently the same standard has been adopted in Connecticut, Maryland, New Hampshire, Oregon, Rhode Island, and the District of Columbia. We recommend that this same standard be adopted as a federal standard and that DOE be directed to develop a revised standard by 2013, effective three years later.

I provide estimates of energy and economic savings for this proposal later in this testimony.

*Portable Electric Spas (Hot Tubs)*

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

Over half the energy consumed by a typical electric spa is used for its heating system. Heat is lost directly during use and through the cover and shell during standby mode. Improved covers and increased insulation levels are key measures to improving efficiency and can decrease standby energy use by up to 30% for a spa of average-to-low efficiency. Another measure is the addition of a low-wattage circulation pump or improvements to pump efficiency that would generally save 15% of standby energy consumption of an average-efficiency spa. Automated programmable controls, which would allow users to customize settings based on predicted usage patterns, are a third measure to improve efficiency and could save roughly 5% of a spa's standby energy consumption.<sup>10</sup>

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

The California standard is a modest initial effort and is probably met by the majority of spas now being sold. CEC estimates that the products meeting the standard cost \$100 more than basic models. At national average energy prices, this additional cost is covered within 4.3 years.<sup>11</sup>

Connecticut and Oregon have subsequently adopted the California standard. We recommend that the same standard be adopted as a federal standard and that DOE be directed to develop a revised standard by 2013, effective three years later.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

*Estimates of Energy Savings*

The table below summarizes estimates of energy savings from the proposed new standards:

Product	2020 kWh Saved (millions)	2020 Peak Demand Reduction (MW)	2020 CO <sub>2</sub> Emissions Reductions (MMT)	Net Discounted Consumer Benefits (million \$)
Portable lighting fixtures	3,856	573	2.62	662
Outdoor lighting fixtures	12,570	Small, on off-peak	8.54	Not calculated
Water dispensers	250	35	0.17	229
Hot food holding cabinets	314	103	0.21	291
Portable electric spas	185	43	0.13	104
Total	17,175	754	11.67	1,286

Notes: Net Discounted Consumer Benefits are for purchases through 2030. 2020 kWh savings for outdoor lighting fixtures adapted by ACEEE from Philips estimates cited above, based on a 20 year average fixture life. CO<sub>2</sub> savings are prorated based on ratio of kWh to CO<sub>2</sub> savings for other products.

## PROCESS IMPROVEMENTS

Senator Menendez on March 16, 2009 provided witnesses at this hearing with some potential amendments to ASIA and asked for comments. We support Senator Menendez's amendments and provide specific comments below. In general these amendments free DOE and states from restrictions that have hampered implementation of the standards and related programs. None of these amendments would set new standards directly, so to the extent particular manufacturers have concerns, they will be able to make these concerns known as part of formal DOE and state rulemaking proceedings. We are also open to discussing possible edits to these amendments based on suggestions from industry and others. We urge this Committee to encourage all parties to discuss these amendments and seek to reach consensus on them. Below we discuss each of these provisions and why they are needed.

*Reflector Lamp Loophole*

EISA extended existing reflector lamp standards to some previously exempted lamps. DOE under the previous administration interpreted the EISA language to permanently bar DOE from addressing any other exempted reflector lamps, which was not the intent we agreed to when we helped negotiate the EISA language. The new administration is now reviewing this interpretation, but if there are legal doubts, Congress should correct the law.

Due to this interpretation, final standards for incandescent reflector lamps due in June 2009 may include a huge loophole (about 30% of total sales) which will only grow bigger because these exempted lamps are lower cost than regulated products. The proposed amendment closes the loophole by requiring DOE to do a quick rulemaking to consider standards for the exempted products. The rulemaking is quick because it can build on the three-year rulemaking for related products that is now nearing completion. If manufacturers believe that standards for these products are not technically feasible and economically justified, they can make these arguments during the rulemaking. If DOE fails to complete the rulemaking on time, the standard DOE establishes this June for other reflector lamps would apply. Further, the amendment requires that DOE conduct a future rulemaking (completed by 2015) for reflectors which considers all technology on an equal basis rather than just incandescent technology.

Traditionally, among incandescent lamps, reflector lamps have led in efficiency innovations. With EISA, general service incandescent lamps (the pear-shaped lightbulb) are moving towards advanced incandescent technology. The reflector lamp loophole is protecting some common reflector lamps from having to make this transition, even though the advanced technology can be applied—in fact, advanced incandescent products are presently available in retail stores for the main exempted category.

*State Authority to Seek Injunctive Enforcement*

Compliance with federal standards is essential for achieving the expected energy savings. Under present law, only the federal government may bring enforcement actions, but since there is no federal budget for this, no significant enforcement is taking place. This amendment would allow states to bring their expertise and resources to bear on compliance by enabling them to seek injunctive enforcement of federal standards in federal court on an equal basis to the Federal government. All provisions of federal law apply. Such a provision was included in EISA for general service incandescent lamps. It should be extended to other regulated products.

*Multiple Metrics*

The past two administrations have disagreed on whether DOE may set more than one standard for a product. For quite a few products Congress has imposed more than one standard for a product. Some examples are listed below.

Product	Metrics
Heat pumps	Cooling efficiency and heating efficiency
Clothes washers	Energy Factor and Water Factor
Dishwashers	Energy Factor and Water Factor

Product	Metrics
Residential boilers	AFUE, restrictions on pilot lights and a control requirement
General service incandescent lamps	Maximum Watts, minimum life
Fluorescent lamps	Efficacy and color rendering
External power supplies	Active mode efficiency and no-load mode watts
Compact fluorescent lamps	Initial efficacy, lumen maintenance, lamp life, rapid cycle test
Ceiling fans	Efficient light kits, several control requirements
Walk-in coolers and freezers	Insulation, glass, motor, control, lighting, and door requirements
Ice-makers	Energy use and water use

The list above includes two very different groups. Most combine two performance parameters, such as cooling efficiency and heating efficiency, where the product combines multiple energy-using functions. Some combine a performance standard with one or more prescriptive requirements, such as boiler controls and minimum life for lamps. This situation is critical for obtaining savings where energy-saving technology options have developed more quickly than rating methods have been revised, as in the case of boiler controls.

Uncertainty about DOE's authority has caused several problems in recent years. In the current rulemaking for general service fluorescent lamps, DOE decided it was prohibited from revising the now outdated requirements for color rendering, even though both advocates and industry recommended that this part of the standard be updated. In 2007 DOE turned down a consensus agreement on new residential boiler standards, requiring the parties to go to Congress to successfully ask that this provision be included in EISA. Similarly, just this past week, DOE declined to adopt new multi-metric standards for commercial warm air furnaces developed by the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE).<sup>12</sup> Another potential application of this authority is to require that some products have two-way communication interfaces, so they can communicate with the "Smart Grid". For example, some electric industry representatives have suggested that DOE consider such a requirement for electric water heaters.

The question is whether DOE, in revising standards, can also use more than one metric if such a standard is technically feasible and economically justified. The Clinton administration ruled that DOE has this authority; the Bush administration took the contrary view. If the law is this unclear, it should be clarified, as this amendment would do. This amendment does not require DOE to set any standards with multiple metrics; it just gives DOE the option. Even with this amendment, DOE cannot set a multiple metric standard if such a standard is not technically feasible or economically justified. Some manufacturers argue that multiple standards on particular products are costly or onerous. This is an argument they should make to DOE. Concerns some manufacturers have about some products should not affect DOE's ability to set appropriate standards for all products.

This provision passed both the House and Senate in 2007 but was left out of EISA at the last minute. It should be adopted this year.

<sup>12</sup>See pp 38 to 40 of the Proposed Rule made available on March 12, 2009 by DOE at [http://www1.eere.energy.gov/buildings/appliance\\_standards/commercial/ashrae\\_products\\_docs\\_meeting.html](http://www1.eere.energy.gov/buildings/appliance_standards/commercial/ashrae_products_docs_meeting.html) but not yet published in the Federal Register. This proposed rule confirms an initial determination issued on July 16, 2008 (73 Fed. Reg. 40770). DOE asserts it lacks authority to adopt the ASHRAE requirements which, for commercial furnaces, would eliminate standing pilot lights, set a limit on jacket losses and require power venting or automatic flue dampers.



### *State Performance-Based Building Codes*

Under present law, states with performance-based building codes must use minimum-efficiency equipment when developing code requirements. Performance-based codes provide an overall level of performance and permit many paths for reaching these goals (e.g. more insulation, better windows, reduced air infiltration, or improved equipment). But if equipment is limited to only federal minimums, some states are finding they can't set strong enough codes to meet their energy and climate goals. Also, this part of federal law creates a loophole in performance based codes, as builders exceeding federal minimums can install less insulation, even though insulation lasts for the life of the building while equipment lasts for only one to two decades.

The goal of these changes is to allow greater flexibility in performance-based codes to address equipment that is covered under federal appliance standards. This provision would allow states to use covered products with above-federal-minimum efficiency levels in formulating their building codes, while keeping the framework of preemptive federal standards. The proposed amendment includes two changes:

1. The first change allows the use of above-federal-minimum products in codes at an efficiency level set in the IECC or in ASHRAE model code. Federal law already allows states to adopt many commercial product standards in their codes at levels above federal minimums if contained in an ASHRAE model code. Creating a similar structure for residential products would enable states to require the use of more efficient products in construction covered by their prescriptive building codes at levels set in a national standard-setting process. This is most necessary for products for which a different efficiency makes sense for new construction than for replacement. For some products such as furnaces, it is often much less expensive to install efficient products in new construction than in existing homes.<sup>13</sup>

2. The second change allows states to offer options for meeting their codes using above-federal-minimum covered products as long as at least one option assumes covered products at the level of federal standards, and that this option is "reasonably achievable using commercially available technologies". In other words, if a state set performance requirements that were based in part on high efficiency furnaces, they would have to provide an explicit pathway for installing a minimum efficiency furnace, making up the lost savings with other measures such as more insulation or improved windows. This would enable states to establish a performance standard that meets the needs of the state as long as they provide a clear path for code compliance using covered products that do not exceed federal-minimum efficiency standards.

### *Removing the Catch-22 from the State Waiver Petition Process*

Under current law, federal standards preempt state standards, unless a state submits and DOE approves an application for exemption from preemption. Such application must demonstrate that "such state regulation is needed to meet unusual and compelling State or local energy or water interests" and that such regulation "will not significantly burden the manufacturing, marketing, distribution, sale or servicing of the covered product on a national basis." The detailed requirements for states to get waivers from federal preemption include submittal of information that may be obtainable only from manufacturers, who may oppose the waiver. The amendment would prevent DOE from denying a state a waiver from preemption for failing to provide information which manufacturers refuse to make available to the state. The amendment would also limit DOE from denying waivers to states for failing to explore every conceivable energy saving alternative to standards or for not having a formal state energy plan. States would still have to demonstrate that they meet the primary determination factors, as summarized above, but the provision would remove some secondary requirements that impose needless roadblocks on state action. Even with these amendments, states would still have a difficult case to make, but these amendments at least make it possible to make the case.

### *DOE Collection of Key Data for Making Standards Decisions*

The distribution of efficiency levels among products sold is a key piece of information for establishing new standards; however, DOE has sometimes failed to obtain such data in developing new rules. DOE usually asks for such information, but manufacturers sometimes decline to provide it. The amendment would require DOE to

<sup>13</sup> Indeed, some builders find installing higher efficiency (condensing) furnaces (and power-vent water heaters) to be less expensive than using lower efficiency products, since it avoids the need for a conventional chimney.

conduct a rulemaking to determine what data manufacturers must submit, inclusive of efficiency performance data, to enhance DOE decision making. Existing law includes provisions to protect confidential data. Improved data will help DOE's decision-making process for standards, and will also aid other programs such as ENERGY STAR. For example, in the past few weeks DOE posted data on ENERGY STAR product market share in 2007, but noted: "The validity of the clothes washer data for quarter one and quarter three is questionable. It is expected that the incorrect coding of previously qualified units for these two quarters resulted in a higher than actual market share projection. The drop in refrigerator market share in the fourth quarter is also due to data from one retailer."<sup>14</sup> This data provision would help DOE to get accurate data.

#### CONCLUSION

The proposed Appliance Standards Improvement Act of 2009 (ASIA) builds on past bipartisan appliance standards bills and we support it. The proposed portable lighting fixture standards will save enough electricity to power 350,000 average American homes while providing substantial flexibility to manufacturers and consumers. ASIA also contains several useful reforms to the appliance standards and ENERGY STAR programs.

While ASIA is a solid bill, we believe it can be improved by incorporating:

- Several technical amendments to the portable lighting fixture standard as described in my testimony;
- Technical amendments to the standards adopted in EISA that are needed to correct drafting errors;
- Adding new standards on outdoor lighting fixtures, based on a proposal now being developed by Philips Lighting, ACEEE, and other lighting manufacturers and energy efficiency groups;
- Adding new standards on drinking water dispensers (water coolers) and hot food holding cabinets that are based on ENERGY STAR specifications and have been adopted in California, Connecticut, Maryland, New Hampshire, Oregon, Rhode Island, and the District of Columbia;
- Adding new standards on portable electric spas (hot tubs) adopted in California, Connecticut, and Oregon; and
- Adopting several improvements to the appliance standards program proposed by Senator Menendez that:
  - Direct DOE to consider standards on several types of reflector lamps;
  - Allow states to help enforce federal standards in federal courts using federal procedures;
  - Allow DOE to consider multiple standard metrics for products;
  - Provide states more flexibility to develop performance-based building codes;
  - Simplify the process for states to obtain waivers from federal preemption while keeping the main decision-criteria in place; and
  - Direct DOE to undertake a rulemaking to establish regular reporting of data needed to support the standards, ENERGY STAR and related programs.

These provisions would more than quadruple the energy savings resulting from ASIA and would improve program implementation and decision-making going forward. We are open to discussing all of these suggestions with Committee members and their staff, and with manufacturers and other interested parties, so that hopefully consensus can be reached on modified versions of all of these provisions.

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

#### APPENDIX: SPECIFIC LEGISLATIVE CHANGES

##### *Suggested Edits to Portable Lighting Fixture Standards in ASIA*

p. 16, line 2: At the end, add: "and an approved IES test procedure for testing LED light engines."

Explanation: LM-79 doesn't cover light engines. IES is now developing a test procedure for light engines and this should be used once finalized and approved.

p. 16, lines 16-18, reword to read as follows (edits underlined):

<sup>14</sup>"2007 Sales Data \_National, State and Regional" available at: [http://www.energystar.gov/index.cfm?c=manuf\\_res.pt\\_appliances](http://www.energystar.gov/index.cfm?c=manuf_res.pt_appliances).

“(B) Be equipped with only 1 or more GU—24 line-voltage sockets, not be rated for use with incandescent lamps of any type, as defined in ANSI standards, and meet the requirements of the ENERGY STAR program for Residential Light Fixtures, Version 4.2.

EXCEPTION: GU-24 fixtures for LED lamps shall meet the requirements of paragraph (C). in lieu of meeting the requirements of the ENERGY STAR program for Residential Light Fixtures, Version 4.2.

Explanation: GU-24 should meet the applicable ENERGY STAR requirements, thereby keeping poor quality, inefficient lamps and fixtures from U.S. market. To prevent confusion, fixtures for LED lamps are covered by paragraph (C) and not by the more limited LED requirements in the Residential Light Fixture spec.

p. 17, line 17: Change 4200K to 4000K.

Explanation: 4000K is a standard temperature to LEDs and the IES test procedure provides enough flexibility that it doesn't have to be exactly 4000K to pass. This change conforms to classes in the IES standard.

LEGISLATIVE LANGUAGE FOR WATER DISPENSERS, HOT FOOD HOLDING CABINETS AND PORTABLE ELECTRIC SPAS

*Sec. 321 is amended by adding at the end the following:*

(67) The term “Water dispenser” means a factory-made assembly that mechanically cools and heats potable water and that dispenses the cooled or heated water by integral or remote means.

(68) The term “Bottle-type water dispenser” means a water dispenser that uses a bottle or reservoir as the source of potable water.

(69) The term “Point of use water dispenser” means a water dispenser that uses a building's water pipes as the source of potable water.

(70) The term “Commercial hot food holding cabinet” means a heated, fully-enclosed compartment with one or more solid or glass doors that is designed to maintain the temperature of hot food that has been cooked in a separate appliance. “Commercial hot food holding cabinet” does not include heated glass merchandizing cabinets, drawer warmers, or cook-and-hold appliances.

(71) The term “Portable electric spa” means a factory-built electric spa or hot tub, supplied with equipment for heating and circulating water.

*Sec. 323 is amended by adding at the end the following:*

(19) BOTTLE TYPE WATER DISPENSERS AND POINT OF USE WATER DISPENSERS.—Test procedures for bottle type water dispenser and point of use water dispensers shall be based on “Energy Star Program Requirements for Bottled Water Coolers version 1” published by the U.S. Environmental Protection Agency. Units with an integral, automatic timer shall not be tested using Section D, “Timer Usage,” of the test criteria.

(20) COMMERCIAL HOT FOOD HOLDING CABINETS.—Test procedures for commercial hot food holding cabinets shall be based on the test procedures described in ANSI/ASTM F2140-01 (Test for idle energy rate-dry test). Interior volume shall be based on the method shown in the U.S. Environmental Protection Agency's “Energy Star Program Requirements for Commercial Hot Food Holding Cabinets” as in effect on August 15, 2003.

(21) PORTABLE ELECTRIC SPAS.—Test procedures for portable electric spas shall be based on the test method for portable electric spas contained in section 1604, title 20, California Code of Regulations as amended on December 3, 2008.

*Sec. 325 is amended by adding after subsection (hh) the following:*

(ii) BOTTLE TYPE WATER DISPENSERS AND POINT OF USE WATER DISPENSERS.—

(1) STANDARDS.—Effective January 1, 2012, bottle-type water dispensers and point of use water dispensers designed for dispensing both hot and cold water shall not have standby energy consumption greater than 1.2 kilowatt-hours per day.

(jj) COMMERCIAL HOT FOOD HOLDING CABINETS.—

(1) STANDARDS.—Effective January 1, 2012, commercial hot food holding cabinets with interior volumes of 5 cubic feet or greater shall have a maximum idle energy rate of 40 watts per cubic foot of interior volume. Commercial hot food holding cabinets with interior volumes of less than 5

[tentative] cubic feet or less shall have a maximum idle energy rate of x Watts [value still being discussed].

(kk) PORTABLE ELECTRIC SPAS.—

(1) STANDARDS.—Effective January 1, 2012, portable electric spas shall not have a normalized standby power greater than  $5(V^{2/3})$  Watts where V=the fill volume in gallons.

(ll) The Department of Energy shall consider revisions to the standards in subsections (ii), (jj) and (kk) in accordance with subsection (o) and publish a final rule no later than January 1, 2013 establishing such revised standards, or finding that no revisions are technically feasible and economically justified. The revised standards shall take effect January 1, 2016.

*Sec. 327 subsection (c) is amended by adding at the end the following:*

(10) is a regulation concerning standards for hot food holding cabinets, drinking water dispensers and portable electric spas adopted by the California Energy Commission on or before Jan. 1, 2013.

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

**STATEMENT OF RICHARD D. UPTON, PRESIDENT AND CEO,  
AMERICAN LIGHTING ASSOCIATION, DALLAS, TX**

Mr. UPTON. Good morning. I'm Richard D. Upton, President of the American Lighting Association. Our headquarters are in Dallas, Texas.

The American Lighting Association is a vertically structured association and we represent the residential decorative lighting industry. Our membership includes the designers, the manufacturers, the manufacturer's representatives and the lighting independent showrooms in the United States, Canada and the Caribbean. Our membership includes—it sounds like a lot, but it's only 1,500 companies because it's a small industry.

Attending the hearing are nine members of our association including our chairman, Mr. Paul Eusterbrock. We're here to join with the National Association of Electrical Manufacturers, NEMA and ACEEE in endorsing this bill relative to the portable fixtures. The first action to gain efficiency on portables began in California last year.

As you may know the California Energy Commission has been directed by their legislature to gain a 50 percent reduction in residential lighting by 2018. Over the last several years they've taken actions to meet their objectives. In 2008 one of their focuses became portable lighting fixtures.

ALA advocates energy efficiency and the CEC working together with others were successful in delivering a series of recommendations to reduce energy consumption on portable fixtures. It's not in my written testimony but the savings is estimated by CEC to be 136 million kilowatt hours. Those recommendations were adopted and for the most part have been placed into this bill.

Because government advocates in the lighting industry were able to develop and support an agreed upon set of requirements for portable fixtures. We believe we gain a favorable buy in from California consumers. Importantly get the buy in for moving to energy efficient products.

The ALA, the ACEEE and NEMA have come together to recommend these actions be implemented nationally. By doing so, the country will benefit with an energy efficient program for portables.

Our industry will be able to design and manufacture them based on a single set of efficiency specifications which is very important to an industry that's made up of so many small companies.

One of the most positive aspects of the bill is there are several pathways for manufactures to follow that will provide customers choices and options in energy efficient portable lighting that they purchase which is especially important because portable lighting purchases are significantly a decorative purchase as well as a functional one. Those pathways include.

A fluorescent light fixture that meets Energy Star 4.2 requirements.

A light fixture equipped only with a GU24 socket that is not rated for incandescent lamps.

An LED fixture with a minimum of 200 lumens.

A minimum light engine efficacy of 40 lumens per watt installed in fixtures with an efficacy of 29 lumens per watt or alternatively a light engine efficacy of 60 lumens per watt for fixtures that do not meet the 29 lumens per watt efficacy.

A minimum LED light fixture efficacy of 29 lumens per watt and a minimum LED light engine efficacy of 60 lumens per watt would be required by the language by 2016.

Fourth, a light fixture boxed with an Energy Star screw base, compact fluorescent lamp or LED lamp for each socket that are fully compatible with the fixture controls. In other words, if the fixture calls to be dimmable, the bulbs must be dimmable or three way. These options are also important in allowing consumers to achieve the proper application of lighting which is often overlooked.

We will note that the Secretary of the Department of Energy is charged to review the regulations. Recommend changes that may be needed. We believe those reviews are appropriate in the timeframes recommended because expected changes in advancements in the industry will need those changes.

We again would like to thank our partners in this effort, NEMA and ACEEE, for working with us to bring this recommended legislation to you which we think will be very successful simply because everybody has gotten together on the same page. When that happens then we don't have confused consumers. Thank you very much for the opportunity to address you.

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF RICHARD D. UPTON, PRESIDENT AND CEO, AMERICAN LIGHTING ASSOCIATION, DALLAS, TX

My name is Richard D. Upton, and I am the President/CEO of the American Lighting Association (ALA).

The ALA is vertically structured and represents the residential decorative lighting industry. Our membership includes the designers, manufacturers, manufacturers' sales representatives and independent retail lighting showrooms that manufacture and sell lighting, lighting controls and ceiling fan products in the United States, Canada and the Caribbean. Our membership includes 1,500 business members. Our office is located in Dallas, Texas.

Attending the hearing are nine members of our association, including Mr. Paul Eusterbrock, the chairman of our association's Board of Governors.

We are here to join with the National Electrical Manufacturers Association (NEMA) and the American Council for an Energy-Efficient Economy (ACEEE) to speak in favor of the Bill and to respectfully encourage you to pass it.

The first action to gain energy efficiency in portable fixtures began at the California Energy Commission (CEC) in 2008.

The CEC has been directed by the California Legislature to reduce the energy consumption of indoor residential lighting by 50 percent by 2018. Over the last several years, they have taken actions to meet their objective, and in 2008, one of their focuses was on portable lighting fixtures. The ALA, advocates of energy efficiency, the CEC staff and others worked together successfully over several months and delivered a series of recommendations to reduce the energy consumption of portable fixtures.

Those recommendations were adopted by the CEC and, for the most part, have been incorporated into this proposed Bill.

Because government, advocates and the lighting industry were able to develop and support an agreed upon set of requirements for portable fixtures, we believe we will gain a favorable buy-in by California consumers, leading to an effective market transformation.

The ALA, the ACEEE and NEMA have come together to recommend that the favorable actions taken by the CEC be implemented nationally. By doing so, the country will benefit with an effective energy efficient program for portable fixtures, and our industry will be able to design and manufacture them based on a single set of energy efficiency specifications.

The latter is very important to portable lighting manufacturers. This segment of the industry is made up of many very small companies, and they cannot be successful if they are faced with multiple rules, regulations and reporting requirements by various states.

One of the most positive aspects of the Bill is that there are several pathways manufacturers can follow that will provide consumers choices and options in the energy-efficient portable lighting they purchase. We believe this is especially important because portable lighting is, to a large extent, a decorative purchase.

Portable fixture pathways include:

1. A fluorescent light fixture that meets ENERGY STAR® 4.2 requirements
2. A light fixture equipped with only GU-24 sockets, not rated for incandescent lamps
3. An LED light fixture with:
  - A minimum of 200 lumens
  - A minimum light engine efficacy of 40 lumens per watt installed in fixtures with an efficacy of 29 lumens per watt or, alternatively, a light engine efficacy of 60 lumens per watt for fixtures that do not have an efficacy of 29 lumens per watt
  - A minimum LED light fixture efficacy of 29 lumens per watt and a minimum LED light engine efficacy of 60 lumens per watt by January 1, 2016.
4. A light fixture boxed with ENERGY STAR screw-based compact fluorescent lamps (CFLs) or LED lamps for each socket that are fully compatible with fixture controls (i.e. dimmable, three-way, etc.)
5. A light fixture with single-ended non-screw-based halogen lamp sockets with a dimmer or low control and limited to 100 watts

These options are also important in allowing the consumer to achieve the proper application of lighting in their home.

We note the Secretary of the Department of Energy is charged to review the regulations and recommend changes that may be needed. We believe those reviews are appropriate, in the time frames outlined, because of expected changes and advancements in the industry.

We again want to thank NEMA and the ACEEE for working cooperatively with us so we can bring you our collective endorsement of this Bill.

Thank you for receiving our comments.

The CHAIRMAN. Thank you very much for your testimony.  
Mr. Pitsor.

**STATEMENT OF KYLE PITSOR, VICE PRESIDENT, GOVERNMENT RELATIONS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, ROSSLYN, VA**

Mr. PITSOR. Good morning, Mr. Chairman, Ranking Member Murkowski, members of the committee. On behalf of the National Electrical Manufacturers Association I'm Kyle Pitsor, Vice President for Government Relations. NEMA is the trade association for

the electrical and medical imaging equipment manufacturing industry. Our approximately 430 member companies manufacture a broad range of products including smart grid technologies, energy storage and batteries, electric motors, transformers, light bulbs, indoor and outdoor lighting fixtures, thermostats, exit signs, circuit breakers, wire and cable and medical imaging products with domestic sales exceeding \$100 billion and employing about 400,000 U.S. jobs.

I'm pleased to be here today to present our association's views on the Appliance Standards Improvement Act of 2009. NEMA members are at the very heart of our national effort to reduce energy use through the research, development, manufacturing and deployment of energy efficient products and technologies. Advancing energy efficiency in our economy comes about through a mix of policy approaches, building codes, product standards, consumer education, labeling of products, voluntary programs like Energy Star, government procurement and energy tax incentives.

NEMA urges the committee to support inclusion of the provisions to improve the operation and efficacy of a robust national appliance standards program and a strong Energy Star program. These two programs work hand in hand to advance the use of energy efficient products and technologies. It is important that operational coordination occur between the two programs.

We offer the following recommendations with respect to the legislation.

NEMA supports the use of recognized test procedures and requirements that a petition to amend current test procedures needs to contain substantive information on why the current procedure needs to be amended so as to prevent frivolous or general petitions lacking substantiation.

Second, NEMA supports a direct final rule approach as provided in the legislation for broad consensus petitions to amend test procedures for covered products. Such petitions must have the broad support of manufacturers, utilities, advocates and other stakeholders.

Third, the Energy Star program should regularly be reviewed for the qualification requirements. In a cost effective manner ensure that the Energy Star labeled products are able to demonstrate compliance with applicable Energy Star requirements. A one size fits all approach does not work for the over 50 Energy Star product categories. The agencies need to have flexibility in consultation with manufacturers and others in arriving at the appropriate compliance verification approach for that product.

Based on marketing and stakeholder confusion due to competing and differing Energy Star programs for solid state lighting by the two agencies, NEMA and the American Lighting Association do support consolidating the Energy Star lighting activities under one agency at the Department of Energy due to its expertise in solid state lighting and lighting technologies generally. For over 2 years industry and others have been seeking the agencies to work out competing activities. But without success including the intervention of the White House Council Environmental Quality, I might add.

Companies are investing in making decisions on new LED lighting. With conflicting Energy Star programs will impede introduction and acceptance of this developing lighting technology. NEMA is pleased to support in joining the establishment of new Federal efficiency standards for portable lighting fixtures such as table lamps and floor lamps as testified earlier today.

NEMA believes that the study on compliance and enforcement in the bill should contain recommendations for improving enforcement. We also recommend that the General Accountability Office conduct the study in consultation with DOE. We are seeing some non compliance products come in from overseas. The study will provide Congress with recommendations on what changes may be needed to improve enforcement.

Industrial electric motor driven systems use 23 percent of all electrical energy produced. There are significant opportunities at reducing those costs. We support the provision in the bill for DOE to conduct an assessment of the market and provide recommendations to improve the deployment of energy efficient motor systems.

We are also, Mr. Chairman, working with the American Council for an Energy Efficient Economy and others on a proposal for a utility administered motor rebate program to buy down the cost of premium efficient motors to purchasers. We look forward to providing recommendations and authorization language for the committee to consider in this legislation. As Congress adds more responsibilities and deadlines to both DOE and EPA Congress needs to provide sufficient resources so these agencies can complete their missions.

Since the outset of this program in 1975 a fundamental tenant of the Energy Policy and Conservation Act is the significant and outstanding principle of Federal preemption for overseeing Federal efficiency standards. Exceptions to Federal preemption were intentionally narrowed to avoid a patchwork of differing State requirements. NEMA urges Congress not to weaken this fundamental tenant going forward.

NEMA also recommends the inclusion, as Mr. Nadel noted of a technical corrections package for EISA legislation that has come to light since it was introduced.

Last, Mr. Chairman not included in my written statement. Just looking forward I think one of the things we need to be thinking about with respect to the Appliance Standards program and the Energy Star program is how those programs in energy efficiency in general are going to play out as we implement and develop a smart grid because the smart grid also impacts demand response in the home, at work and in businesses. Those communication protocols with dimming, smart sensors on motors, smart appliances will have an impact on the energy efficiency standards both administered by DOE and with respect to Energy Star products.

So looking forward I think we need to take that into consideration how we structure the program so we don't have silos of these different programs. These programs are coordinated closely together. That completes my testimony. I welcome questions.

[The prepared statement of Mr. Pitsor follows:]



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

Chairman Bingaman, Ranking Member Murkowski and members of the Committee: On behalf of the National Electrical Manufacturers Association (NEMA), I am Kyle Pitsor, Vice President for Government Relations. NEMA is the trade association of choice for the electrical and medical imaging equipment manufacturing industry. Our approximately 430 member companies manufacture products used in the generation, transmission and distribution, control, and end-use of electricity, and represent about 400,000 jobs. These products are used in utility, medical imaging, industrial, commercial, institutional, and residential applications. Domestic production of electrical products sold worldwide exceeds \$120 billion.

I am pleased to be here today to present our Association's views on the importance and role of the national energy efficiency standards program and the Energy Star voluntary program, and to offer our comments on the "Appliance Standards Improvement Act of 2009."

I would like to note that our member companies strongly support advancing energy efficiency in the marketplace. NEMA members and their employees are at the very heart of our national effort to reduce energy use through the research, development, manufacturing, and deployment of energy-efficient products and technologies. Many energy efficient technologies exist, and 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.

Advancing energy efficiency in our economy through greater deployment and use of energy efficient technology comes about through a mix of policy approaches: building codes, product standards, consumer education, labeling of products, voluntary programs like Energy Star®, government procurement, and energy tax incentives.

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 critical to effectively 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 regulation for products occur at the federal level.

Mr. Chairman, I would like to provide our comment on the legislation and have organized our testimony based on the bill's sections. We also offer comment on several other topics following our section-by-section comments which we hope will be considered as the legislation moves forward.

SECTION 2: TEST PROCEDURE PETITION PROCESS

The establishment of energy efficiency standards for federally-covered products and equipment is predicated on the use of recognized and established consensus test procedures. Without agreed upon test procedures, it would be impossible to compare efficiency claims among products. The current program is based on incorporation of relevant test procedures within the regulatory program under EPCA.

Once the Department of Energy (DOE), or in some cases Congress, establishes the test procedure for a regulated product, it is important that the test procedure be evaluated as time passes to ensure that it stays current with the energy efficiency levels mandated for the product. When DOE undertakes reviews of the efficiency standard for a product, it also undertakes a review of the applicability of the test procedure and whether it needs to be changed or not.

We note that the Energy Independence and Security Act of 2007 (EISA 2007) amended EPCA to require DOE to review test procedures for all covered consumer appliances and industrial equipment at least once every 7 years and to amend test procedures for any such product if DOE determined that the amended procedure would more accurately or fully comply with the EPCA requirement to be

reasonably designed to produce test results which measure energy efficiency, energy use, water use . . . , or estimated annual operating cost of a covered product during a representative average use cycle or period of use . . . , and shall not be unduly burdensome to conduct.

The EISA 2007 amendment also directed DOE to publish notice in the Federal Register of any determination not to amend a test procedure.

The proposed legislation would permit DOE to consider amending a test procedure as a result of petition, conduct a public rulemaking to determine if the test procedure should be amended or not, and set deadlines. It should be noted that the granting of the petition does not establish a presumption that the test procedure should be amended, only that DOE must undertake a rulemaking to make a decision on

what changes to the procedure are warranted, if any, and to publish such a determination. In addition, for industrial equipment, the legislation would require DOE to conduct a test procedure rulemaking at a minimum of once every seven (7) years on a mandated basis.

NEMA supports the need to keep test procedures current based on the use of recognized and established consensus test procedures. Petitions under the proposed legislative changes need to include detailed information on why a current procedure should be amended, otherwise we fear that very general petitions could be filed that would tie up DOE resources unnecessarily and be counterproductive to the administration of the appliance standards program.

Section 2 also permits the DOE to adopt a “consensus” petition to amend a test procedure on an expedited basis per changes made in EISA 2007 applicable to “consensus” petitioning to amend efficiency requirements. NEMA supported the changes to EISA 2007 for an expedited process via a direct final rule for new efficiency standards where there exists a broad consensus of stakeholders (including representatives of manufacturers, efficiency advocates, states, utilities, etc.). It is critical that such “consensus” petitions have broad support, and if they do, then considerable resources can be saved by the government and the private sector in a direct final rule. With respect to the current legislative proposal to extend this same approach to test procedures, NEMA supports the proposed change.

#### SECTION 3: ENERGY STAR PROGRAM

Since they help direct consumers to the leading edge and highest performing products and buildings in terms of energy efficiency and consumer satisfaction, the voluntary Energy Star market transformation programs must also undergo periodic review and updating to ensure they are meeting their mandate from Congress in the Energy Policy Action of 2005 (EPACT 2005) to

identify and promote energy-efficient products and buildings in order to reduce energy consumption, improve energy security, and reduce pollution through voluntary labeling of, or other forms of communication about, products and buildings that meet the highest energy conservation standards.

In Section 131 of EPACT 2005, Congress specifically authorized the Energy Star program within the Department of Energy and Environmental Protection Agency (EPA). Further, Congress specified certain duties of the agencies including to preserve the integrity of the Energy Star label, to regularly update Energy Star product criteria, to solicit comments from interested parties prior to establishing or revising an Energy Star product category or specification, to provide a reasonable notice of any changes along with an explanation of the changes, and to provide an appropriate lead time (270 days) prior to the effective date of applicable changes.

The legislation under consideration today further elaborates on the duties of the two agencies charged with administering the Energy Star program. We endorse the provisions encouraging measures to verify that Energy Star labeled products can demonstrate compliance with the program criteria and find that the approach taken in the legislation is properly balanced to ensure protection of the Energy Star brand and consumer interests while minimizing additional burdens on manufacturers. We stress the importance of providing flexibility to the agencies in determining the appropriate, if any, method by which compliance is demonstrated to Energy Star criteria by qualified products. Given the over 50 product categories in the Energy Star program, one scheme of verification of compliance is not appropriate for all products, and we are encouraged that the legislation as drafted allows for consideration of different approaches based on the product category in question. The determination of the appropriate approach must be conducted in an open and transparent manner by the respective agency in consultation with interested parties including manufacturers. We also support the application of a cost/benefit analysis provided for in the draft legislation.

The draft legislation also establishes timetables for when the agency should undertake a review of the product criteria and specification. Each product category would be reviewed at least once every three (3) years or when the market share for an Energy Star category reaches thirty-five (35) percent. The market share trigger would be adjusted during the first review to take into account technology and market attributes for that specific product. We believe it is important for the respective agency to undertake periodic reviews of the specification, and we note that just because the market share of a particular product exceeds 35 percent it does not automatically mean that the specification is somehow out-of-date, since that determination is technology-specific for a product category. Indeed, what we are striving for is greater penetration of Energy Star products in the market place so one measure

of success is higher market share of Energy Star products as compared to lower efficiency products. For example, in the case of Energy Star Compact Fluorescent Lamps, Energy Star CFLs comprise over 70 percent of the CFL products but CFLs represent only 25 percent of the general lighting market, which is the target of the transformation effort.

We also strongly endorse the requirement set out in this section for the Environmental Protection Agency and the Department of Energy to renew and update their 1996 Energy Star memorandum of cooperation. As specified in the legislation, the updated agreement should be based on resources and expertise available within each agency, as well as on other factors, provide for mechanisms to resolve disagreements between them, and include structures for regular consultations, planning sessions and program reviews.

This brings me to our lighting industry's ongoing concerns and market confusion engendered by competing Energy Star programs within the Environmental Protection Agency and the DOE that address solid state lighting (SSL) technologies. SSL technologies like LED (light-emitted diode) lighting represents a major paradigm shift from conventional lighting, and portends significant energy savings, if we do it right.

As you may recall, Congress recognized the importance of SSL when it created Section 912 of the Energy Policy Act of 2005 (EPACT 2005) and authorized annually \$50 million thru 2013. Section 912 directed the DOE to create a Next Generation Lighting Initiative "to support research, development, demonstration, and commercial application activities related to advanced solid-state lighting technologies based on white light emitting diodes." NEMA is the secretariat of the Next Generation Lighting Industry Alliance, selected by DOE as its industry partner in this effort. NEMA and NGLIA member companies are deeply involved in the private-sector committees that are writing rigorous performance and testing standards for this technology area. Since the initial NGLI program plan was developed, an Energy Star program for solid state lighting has been one of the goals of the commercialization activity.

In 2006, DOE began consultations with the lighting industry about possible requirements for an Energy Star program for solid-state lighting products. After many rounds of drafts, meetings and comments from the lighting industry and other stakeholders, Version 1.0 of the requirements were finalized in March 2008, and took effect September 2008. DOE has also undertaken review of these specifications with a view to adding additional application categories in light of the dynamic changes taking place with SSL.

During this process, I have personally written to both EPA and DOE on behalf of our industry several times to encourage the agencies to work together to resolve any disagreements and cease any redundant activities standing in the way of support for research, development, standardization, commercialization and consumer adoption of quality solid state lighting products. However, in June 2008, with apparently no coordination with DOE, EPA's Energy Star program for residential light fixtures began to allow qualification of fixtures that use solid state lighting as the primary source of illumination. As you might imagine, this caused some confusion and consternation in the marketplace, and among lighting manufacturers, market transformation organizations, and utilities. For example, Pacific Gas and Electric, a major California electric utility, stated openly that it would not recognize the EPA requirements.

We raised our concerns about two competing and confusing specifications to both agencies, and also to the White House Council on Environmental Quality and we understood that the two agencies were directed to work out a way to cooperate in this important area, but each agency has seemingly continued to pursue its own path.

Given the significant investments that companies are making in SSL technologies, we cannot afford market confusion and competing government programs. Accordingly, NEMA and American Lighting Association (ALA) recommend that Energy Star programs involving solid state lighting be under the jurisdiction of one agency, the Department of Energy. DOE has a solid expertise in SSL and it very familiar with lighting technologies and products.

#### SECTION 4: PETITION FOR AMENDED STANDARDS

The proposed legislation would establish deadlines for DOE action with respect to petitions to amend the efficiency requirements for products and equipment. This petition process would be in addition to the DOE process for considering updates to the efficiency standards. We note that the petition needs to contain detailed information on why the efficiency standards need to be revised, and that the granting

of the petition does not presume that an amended efficiency standard is warranted, only that DOE will undertake a rulemaking to make a decision on amending the standards. In considering the petition proposed in the legislation, DOE should be able to take into consideration the review cycle for that particular product/equipment. Ramping up the necessary analysis and consultations with stakeholders is costly and DOE will need to have flexibility to make programmatic adjustments. NEMA supports appropriate deadlines for DOE to respond to petitions, taking into account these issues.

#### SECTION 5 AND 6: PORTABLE LIGHT FIXTURES AND GU-24 BASE LAMPS

Portable light fixtures, such as table lamps, are presently not a federally-covered product. The legislation proposes to establish for the first time federal efficiency requirements and test procedures for portable light fixtures. This proposal is based in part on language adopted by the California Energy Commission during its Title 20 rulemaking in 2008. NEMA participated in that rulemaking with respect to lighting products since we represent the manufacturers of light bulbs, including LED replacement bulbs, and we coordinated with the American Lighting Association (ALA), which represents manufacturers of the portable light fixtures themselves. NEMA supports the establishment of portable light fixture efficiency standards and test procedures under EPCA.

#### SECTION 7: STUDY OF COMPLIANCE WITH ENERGY STANDARDS FOR APPLIANCES

NEMA strongly supports the need for a study of the appliance standards program and the level of compliance and enforcement of efficiency standards. Our industry has invested heavily in the federal program of efficiency standards, test procedures and product labeling, and are concerned about the levels of imported products that are not in compliance with federal requirements for certain federally-covered products. The study will be valuable in making recommendations on how our enforcement regime should be structured in light of today's global competitive environment.

We also suggest that the General Accountability Office (GAO), in coordination with the Department of Energy, conduct the study of compliance, compliance options, and enforcement.

#### SECTION 8: STUDY OF DIRECT CURRENT ELECTRICITY SUPPLY IN CERTAIN BUILDINGS

The potential energy savings from the implementation of a DC electricity supply for individual buildings could be significant on the basis of elimination of the multitude of individual power supplies used for various information technology, audiovisual and other devices. Use of a centralized DC electricity supply would require major investment in new wiring devices (to prevent misconnection with existing systems), installers would need to establish new practices, and rules for safe use would need to be developed. The most practical use would be for new construction or major renovation, as separation of these circuits from the installed alternating current wiring must be maintained. A study would be highly beneficial to identify the key considerations and limitations for implementation of direct current electricity supply.

#### SECTION 9: ELECTRIC MOTOR-DRIVEN SYSTEMS ASSESSMENT

Section 9 of this legislation is a requirement for the Department of Energy to conduct a motor market assessment and commercial awareness program. NEMA represents all of the major electric motor manufacturers. Electric motors convert 65-70% of the electrical energy used in commercial and industrial applications such as drive pumps, fans, compressors, material handling. The objectives of the Market Assessment are to develop a detailed profile of the current stock of motor-driven equipment in U.S. and survey how the installed base of industrial horsepower motors is broken down. This updated assessment will support future legislative, regulatory, and voluntary programs aimed at increased motor systems energy efficiency. Other items this study will accomplish are: characterize and estimate the magnitude of opportunities to improve the energy efficiency of industrial motor systems; survey how many systems use drives, servos and other higher technologies; how many systems use process control, by application category, pump, compressor, fan/blower, material handling. Furthermore, it will develop an updated profile of current motor system purchase and maintenance practices; how many companies have motor purchase and repair specifications, including company size, number of employees. And finally, it will develop methods to estimate the energy savings and market effects attributable to the DOE's Save Energy Now Program.

In addition to serving DOE's program planning and evaluation needs, the market assessment is designed to be of value to manufacturers, distributors, engineers, and others in the supply channels for motor systems. It would provide a detailed and highly differentiated portrait of their end-use markets. For factory managers, this study presents information they can use to identify motor system energy savings opportunities in their own facilities, and to benchmark their current motor system purchase and management procedures against concepts of best practice.

#### OUTDOOR LIGHTING EFFICIENCY STANDARDS

As I noted at the beginning of my testimony, NEMA members have been actively engaged and has a proven track record in supporting public policies that transform the U.S. market to more energy-efficient lighting, both at home and in the workplace.

One area that we believe is now ripe for the establishment of national energy-efficiency standards is outdoor lighting. Outdoor lighting consumes over 178 TWh according to Navigant Consulting (data from 2007), the equivalent output of about 17 nuclear plants (1200 MW) or 34 coal-burning plants. We believe that federal efficiency standards should cover new street, roadway, parking and area lot applications, including major renovations. New federal standards, together with lighting controls, where appropriate, would drive the deployment of today's commercially available energy-efficient products and as well as new advanced solid-state lighting technologies, with the benefit of lowering energy bills and providing users with good quality lighting. We hope that a proposal to establish federal efficiency standards for outdoor lighting can be added to this legislation.

#### FEDERAL PREEMPTION

A fundamental tenet of the Energy Policy Conservation Act, as amended, is the significant and longstanding principle of federal preemption for overseeing energy efficiency standards. The twin cornerstones of the "comprehensive national energy policy" enacted by Congress in 1975 to implement EPCA (S. Conf. Rep. No. 94-516 at 116 (1975)) 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: (a) 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; (b) State procurement standards would be permitted; (c) and a narrowly drawn exception for State and local building codes that must meet seven requirements. NEMA supports the current federal and state preemption provisions.

NEMA supports a robust federal program set forth by Congress. For many federally covered products, 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. EPCA also provides for certain remedies where DOE misses statutory deadlines by permitting any person to commence a civil action against DOE where there is an alleged failure by DOE to perform any non-discretionary act or duty under EPCA. 42 USC 86305(a). EPCA requires the courts to expedite the disposition of such civil actions. Persons also have the right to petition DOE to commence a rulemaking to enact or amend a rule.

I mention these matters because as Congress considers improvements to the federal program, we need to ensure that resources are provided so that the agencies charged with administering the program are able to do so. In the past, some have proposed weakening pre-emption because of missed deadlines, which ends up penalizing the manufacturers for government's lapse.

#### TECHNICAL CORRECTIONS TO EISA

Mr. Chairman, since the passage of the Energy Independence and Securities Act of 2007 (EISA 2007), several items have been identified that warrant "technical correction" to address implementation issues and obtain clarification. Over the past 15 months, since the passage of EISA, NEMA has been working closely with various stakeholders, several of which are testifying today, in obtaining a consensus agreement on a technical corrections bill. We have agreed on a package of non-contro-

sial corrections and we urge consideration of inclusion of a technical corrections package as part of the Appliance Standards Improvement Act of 2009.

#### CONCLUSION

In conclusion, NEMA urges the Committee to support inclusion of provisions to improve the operation and efficacy of the Appliance Standards Program and the Energy Star Program. These two programs work hand-in-hand to advance the use of energy efficient products and technologies, and it is important that operational coordination between the two programs occur. NEMA members are committed to advancing the use and deployment of energy efficient technologies, and offer the following recommendations:

1. NEMA supports use of recognized test procedures and that a petition to amend a current test procedure needs to contain detailed information on why current test procedure needs to be amended in order to prevent general petitions lacking substantiation.
2. NEMA supports a direct final rule approach for broad "consensus" petitions to amend test procedures for covered products and equipment.
3. Energy Star programs should regularly review their qualification requirements and, in a cost-effective manner, ensure that Energy Star labeled products are able to demonstrate compliance with applicable Energy Star requirements.
4. Based on market and stakeholder confusion due to competing Energy Star specifications and programs for solid state lighting, we support consolidating Energy Star solid state lighting activities in one agency, the Department of Energy.
5. Support the establishment of federal energy efficiency standards and test procedures for portable lighting fixtures.
6. The study on compliance and enforcement of the appliance standard program should contain recommendations for improving enforcement and we recommend that the General Accountability Office conduct the study in consultation with DOE.
7. NEMA supports the Motor Assessment study and the study on benefits and costs of Direct Current supply in certain buildings.
8. We support inclusion of a negotiated consensus proposal on energy efficient standards for outdoor lighting in the legislation.
9. Congress needs to provide sufficient resources for the national standards program and support for federal-preemption.
10. Recommend inclusion of an "EISA 2007 Technical Corrections" package as part of the legislation.

Mr. Chairman, Ranking Member Murkowski and Members of the Committee, thank you very much for the opportunity to provide these remarks and recommendations to the Committee today on behalf of our industry.

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

#### **STATEMENT OF MARK CONNELLY, SENIOR DIRECTOR, APPLIANCE & HOME IMPROVEMENT, CONSUMERS UNION, YONKERS, NY**

Mr. CONNELLY. Good morning, Chairman Bingaman, Ranking Member Murkowski and distinguished members of this committee. I am Mark Connelly, Senior Director of Appliance and Home Improvement for Consumers Union publisher of Consumer Reports. Thank you for providing me the opportunity to address this committee regarding legislation to improve appliance standards. An issue that is not only critical for our energy security, but important to consumer's pocketbooks.

Consumer Union has been publishing our test results and informing consumers for more than 70 years, currently reaching approximately eight million subscribers through our print and online publications. I now run the appliance testing program for Consumer Reports. Have worked in appliance testing laboratories for more than 20 years.

The Energy Star program has been successful in raising consumer's awareness of energy efficiency as an important consideration in purchasing decisions. But Energy Star needs to keep up with the changing marketplace in order to stay relevant. As successful as the Energy Star program has been it is in need of serious improvement, especially for appliances.

As we noted in the October 2008 issue of Consumer Reports while the program saves energy, it has not kept up with the times. We would like to focus on three main areas we believe Congress can improve Energy Star.

One, keep test procedures relevant to a changing marketplace.

Two, provide rigor and better enforcement than current self certification procedures.

Three, tighten up qualifying standards.

The first issue is that test procedures are out of date. Appliances are constantly changing. They aren't the simple white boxes that they used to be. But Federal test procedures haven't kept pace with the new technology and new products in the marketplace.

As an example the test procedure that DOE and Energy Star use today to measure refrigerator electricity consumption and energy efficiency was developed about 20 years ago. At that time refrigerators such as French door, bottom freezers with through the door ice and water dispensers did not exist. The procedure for testing bottom freezers with through the door ice and water dispenser allowed for the ice maker to be turned off.

This is not the way consumers would use this product. It artificially improves the apparent efficiency of this type of refrigerator. If consumers were to use these refrigerators as they were tested and rated they would have a puddle of water on their kitchen floor from all the melting ice.

Although not the intent of this program unfortunately some manufacturers took advantage of the situation and sold products with an undeserved Energy Star. To their credit, DOE took care of this. But it was a patch and not a long term solution.

A similar situation existed a number of years ago with dishwashers. These have dirt sensors that adjust water consumption based on soil load. Yet the test procedure used clean dishes.

The result was that the energy efficiency of dirt sensing dishwashers was apparently much better than what a consumer who washes only dirty dishes would realize. It took us a number of years. But we finally convinced DOE to change its test procedure to use dirty dishes in their tests.

Other appliances are also changing. Washing machines have steam and allergy removal cycles that are ignored in current test procedures. Also ignored in current test procedures are dryers, some cooking appliances, wine refrigerators and compact refrigerators among others.

One of the reasons that test standards are so outdated is that it usually takes DOE at least 3 years to publish new rules, a period that includes comments from manufacturers and consumer groups, such as mine. It then usually takes another 3 years for the updated requirements to take effect. Meanwhile new features and new technologies keep appearing in appliances and the only thing that remains constant is that the test procedures are out of date. It is im-

portant that the DOE and Energy Star program keep up with the changing marketplace.

The second issue we'd like to focus on is that companies test their own products. The DOE does not test products for compliance with its standard. Some manufacturers do. Sometimes the consumer organizations like Consumer Reports will test claims in performance.

But in general there's little independent verification of manufacturer's self reported claims. In addition to refrigerators when we tested some products like dehumidifiers and room air conditioners. We found electricity consumption results to be significantly higher than those self reported by one manufacturer.

While some may think that the Energy Star products not meeting qualification standards will be reported to the EPA by rivals. There is scant evidence that self policing is occurring. Mergers within the appliance industry where one manufacturer can account for significant market share in a product category further cut down on the number of cops.

We recommend that EPA and DOE establish a marketplace surveillance program to sample and independently verify the energy efficiency claims made by manufacturers. If this sampling finds widespread problems, we recommend a more thorough, marketplace wide testing to be conducted by EPA or DOE.

Finally we think that qualifying standards are lax. Consumers Union agrees with the EPA's own guidelines that about 25 percent of products in any one category should qualify for an Energy Star. But with dishwashers for example, Energy Star qualified products recently represented more than 90 percent of all dishwashers on the market. With a tighter standard that share has dropped. But it's still about 50 percent.

Certainly when that many products qualify for Energy Star, the value of the star decreases. Congress needs to raise the bar on Energy Star. We agree with the approach in this legislation which requires that once Energy Star designation exceeds 35 percent of a product category, there will be a rulemaking to raise the standard.

We appreciate this opportunity to testify on this significant consumer issue. Look forward to your questions. Thank you.

[The prepared statement of Mr. Connelly follows:]

PREPARED STATEMENT OF MARK CONNELLY, SENIOR DIRECTOR, APPLIANCE & HOME IMPROVEMENT, CONSUMERS UNION, YONKERS, NY

Good morning Chairman Bingaman, Ranking Member Murkowski and distinguished members of this Committee. I am Mark Connelly, Senior Director of Appliance & Home Improvement for Consumers Union, publisher of Consumer Reports. Thank you for providing me the opportunity to address this Committee regarding legislation to improve appliance standards (S. 598, the Appliance Standards Improvement Act), an issue that is not only critical for our energy security, but important to consumers' pocketbooks.

For the past 30 years I have focused my career on product performance testing for manufacturers as well as for consumers. I have worked in and managed testing laboratories that assessed a wide range of products. Consumers Union has been publishing our test results and informing consumers for more than 70 years, currently reaching approximately 8 million subscribers through our print and online products. I now run the appliance testing program for Consumer Reports, and have worked in appliance testing laboratories for more than 20 years. My background gives me a unique perspective for understanding product testing in a competitive marketplace and the critical importance of how best to inform consumers about those test results.



The Energy Star program has been successful in raising consumers' awareness of energy efficiency as an important consideration in purchasing decisions, but Energy Star needs to keep up with a changing marketplace in order to stay relevant. Today, more than 70% of U.S. consumers are aware of the Energy Star logo. For many, the presence of an Energy Star makes a very complicated decision a simple yes or no.

Consumer demand for Energy Star-labeled appliances and electronics has prompted manufacturers to improve the efficiency of their products. Energy Star has also helped to raise efficiency standards, making products such as washing machines much more efficient than those sold 10 years ago. As you know, the 17 year old program co-administered by the EPA and DOE covers more than 50 product categories. It is a voluntary standard that many manufacturers choose to pursue.

As successful as the Energy Star program has been, it is in need of some serious improvement. As we noted in the October 2008 issue of Consumer Reports, while the program saves energy, it has not kept up with the times.

We appreciate this Committee's leadership in introducing S. 598, the Appliance Standards Improvement Act, and would like to focus on three main areas where this legislation can improve the Energy Star program, and offer suggestions to help strengthen them: keep test procedures relevant to a changing marketplace, provide rigor and better enforcement than current self-certification procedures, and tighten up qualifying standards.

#### 1. TEST PROCEDURES ARE OUT OF DATE

Appliances are constantly changing. They aren't the simple white boxes that they used to be. But Federal test procedures haven't kept pace with new technology and new products in the marketplace. As an example, the test procedure that DOE and Energy Star use today to measure refrigerator electricity consumption and energy efficiency was developed 20 years ago. At that time, some refrigerators had to be manually defrosted, didn't have adjustable shelves, temperature-controlled drawers, water filters, or electronic controls of any kind. Refrigerators now have multiple compartments that thaw meat, convert from a refrigerator to a freezer, have computer monitors on their doors, and have sophisticated software programs to control temperature, humidity, defrost cycles, etc.

Refrigerator manufacturers recently introduced French-door, bottom-freezers with through the door ice-and-water dispensers. With that feature, bottom freezer sales took off and bottom freezer sales have gone from 10% of the refrigerator market to more than 30%. But, the procedure for testing bottom freezers with through-the-door ice and water dispensers allowed for the ice maker to be turned off. This is not the way consumers would use this product and artificially improves the apparent efficiency of this type of refrigerator. If consumers were to use these refrigerators as they were tested and rated, they would have a puddle of water on their kitchen floor from all the melting ice. Although not the intent of this program, unfortunately, some manufacturers took advantage of this situation and sold products with an undeserved Energy Star.

A similar situation existed a number of years ago with dishwashers. These have dirt sensors that adjust water consumption based on soil load, yet the test procedure used clean dishes. The result was that the energy efficiency of dirt-sensing dishwashers was apparently much better than what a consumer, who washes only dirty dishes, would realize. It took us a number of years, but we finally convinced DOE to change its test procedures to use dirty dishes in their tests.

Other appliances are also changing. Washing machines have steam-and allergen-removal cycles that are ignored in current test procedures. Also ignored by current test procedures are cooking appliances, wine refrigerators, and compact refrigerators.

One of the reasons that the test standards tend to be outdated is that it usually takes the agencies at least three years to publish new rules—a period that includes comments from manufacturers and consumer groups such as Consumers Union. It then can take another three years for the updated requirements to take effect. Meanwhile, new features and new technologies keep appearing in appliances and the only thing that remains constant is that the test procedures are out-of-date.

It is also important that the Energy Star program keep up with the changing marketplace; we are pleased that EPA extended Energy Star to certain TVs last Fall, though it is not clear to us that the TVs are being tested as they would normally be used. We look forward to working with the agency to keep the protocols as relevant as possible.

We applaud S. 598 for requiring EPA and DOE to review each product category at least once every 3 years or when market share for a product reaches 35%—

though we would hope the language could be clarified to say "whichever is first," so that each product category is reviewed at minimum every 3 years.

We are also encouraged that the bill will require the agencies to clearly define their roles and responsibilities within Energy Star so that there are not gaps and undue overlap; we believe this will ensure fewer products fall through the cracks.

## 2. COMPANIES TEST THEIR OWN PRODUCTS

The DOE does not test products for compliance with its standards; sometimes manufacturers do; sometimes a consumer organization like Consumers Union will test claims and performance. But, in general, there is little independent verification of manufacturers' self-reported claims. In addition to refrigerators, when we tested some products like dehumidifiers and room air conditioners, we found electricity consumption results to be significantly higher than those self-reported by one manufacturer. While some may think that Energy Star products not meeting qualifications standards will be reported to the EPA by rivals, there is scant evidence that self-policing is occurring.

Mergers within the appliance industry, where one manufacturer can account for significant market share in a product category, further cut down on the number of "cops on the beat."

The Energy Star program rewards manufacturers, in the form of tax credits, for selling high efficiency appliances. This gives manufacturers an added incentive to engineer around the standard or to find and exploit loopholes if the standards are unclear or outdated.

We recommend that EPA and DOE establish a marketplace surveillance program to sample and independently verify the energy efficiency claims made by manufacturers. If this sampling finds widespread problems, we recommend more thorough, marketplace-wide testing to be conducted by EPA or DOE. Furthermore, if a particular manufacturer is found to be misrepresenting energy use, that manufacturer should be required to do audited compliance for products going forward. This spot-check program should apply to both minimum standards programs as well as Energy Star.

The proposed legislation represents substantial progress by requiring manufacturers to demonstrate compliance with the standard, rather than relying exclusively on manufacturer claims. As the bill moves forward, we would like to see the bill eliminate self-certification as an option for demonstrating compliance.

## 3. QUALIFYING STANDARDS ARE LAX

Consumers Union agrees with the EPA's own guidelines that about 25% of products in any one category should qualify for an Energy Star. But, with dishwashers, for example, Energy Star qualified products recently represented more than 90% of all dishwashers on the market. With a tighter standard, that share has dropped, but still about 50% of dishwashers now qualify for the Energy Star. Certainly, when that many products qualify for an Energy Star, the value of the Star decreases. Congress needs to raise the bar on Energy Star.

We agree with the approach in S. 598 which requires that once Energy Star designation exceeds 35% of a product category, there will be a rulemaking to raise the standard. While we might prefer to see a lower trigger (such as 10-20% so that consumers will know they are buying an exceptionally efficient product), reasonable minds can differ as to the right threshold.

We appreciate this opportunity to testify on this significant consumer issue, and look forward to any questions.

Thank you.

The CHAIRMAN. Thank you very much. Thanks to all of you. Let me start with a few questions.

Let me ask both Mr. Rodgers and Mr. McLean. I think both of you have indicated you're opposed to Section Three of the bill as we have introduced it. It directs coordination in Energy Star management.

You specifically commit in your testimony, as I understand it, to provide the committee with written documentation on the resolution of these issues within 45 days. Are you contemplating that that would be in the form of a signed memorandum of agreement between the two agencies? Or is this just documentation of what has been agreed to?

What's your thought on this? Obviously if we do legislation, energy legislation, the strong temptation I would have is to go ahead and legislate in this area and not postpone that on the hope that someday the two agencies will resolve these problems.

Mr. Rodgers.

Mr. RODGERS. Thank you, Mr. Chairman. Secretary Chu and Administrator Jackson have met and discussed these issues. They have committed to resolve the issues. They've directed each of our staffs to take all necessary steps to put all the issues on the table and resolve them.

I believe that we can meet that deadline. Provide to the committee clear documentation that we've addressed any and all of the issues that have been brought forward within that 45 day period.

The CHAIRMAN. Mr. McLean, what's your thought on that?

Mr. MCLEAN. I'm trying to think if I have any differences with that statement. I think that's correct. The Secretary and the Administrator met a few weeks ago.

We actually met last week which we scheduled that meeting before this—we knew we were going to be testifying at this hearing. But recognized that the administration recognizes that we need to resolve this so that there is not confusion and we agree. Because of your schedule we want to do it as quickly as we can. We thought we could do that within 45 days.

The CHAIRMAN. Is the objective to have a signed memorandum of agreement or understanding between the two departments or agencies? Is that?

Mr. MCLEAN. I think the goal is to sit down and figure out where there are concerns and work them out. Identify to you that we have. A lot of them have to do with coordination.

We have not decided whether we need a new MOU or modify the existing MOU that we've had for 10 years. So that remains to be seen exactly what that would take the form of. But it would be an agreement and documentation back to the committee.

The CHAIRMAN. Mr. Pitsor, you have in your testimony a description here of what you refer to as the confusion and consternation caused by the lack of coordination by the two agencies in the solid state lighting area. Could you just elaborate on that a bit?

Mr. PITSOR. We have a situation that's developed since EPACK 2005 passed which established a solid state lighting program at the Department of Energy for research development demonstration and commercialization including Energy Star work. In partnership with DOE the industry has been working on a specification which was over the course of 2 years has now been published and went into effect last year. In the meantime at EPA they were working on also requirements for solid state lighting products for some of their programs.

They were not coordinated with industry. They weren't coordinated with DOE. Then both agencies then promulgate specifications which creates quite a bit of confusion in the marketplace. Manufacturers are heavily investing in LED lighting doing the research work. Customers are confused as a result as well in terms of which Energy Star product is really an Energy Star product.

So that's why we believe this needs to be centralized within one agency with the expertise on lighting and that being at DOE.

The CHAIRMAN. Mr. McLean, you heard, I think Mr. Connelly's comments about the compliance problems and lack of monitoring and enforcement in the Energy Star program. Did you agree with that that there's a substantial deficiency there? Or do you think that Mr. Connelly is misinformed?

Mr. MCLEAN. I think there always can be improvements. We have done a number of things for the products that we cover, several hundred tests and trying to identify if there are issues out there. I think most of the products he identified we're not involved with.

So I think it depends on the product you're talking about. The challenges involved in updating testing. If we want to go product by product I think we can talk about it. But it's hard to generalize across all product categories.

So he identified refrigerators, dishwashers, clothes washers, areas that he was concerned about. Those are not under our purview. We think we're doing a pretty good job with third party testing and other activities.

So I think it's good to be very specific about where the concerns are. I know DOE has taken a number of steps to deal with these issues.

The CHAIRMAN. Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. I want to better understand the situation with Section Three and the objections coming out of DOE and EPA. Do I understand correct?

I think it was you, Mr. McLean that you said you've had an interagency agreement or some kind of a MOU in place for the past 10 years? Is that?

Mr. MCLEAN. Yes. That's correct.

Senator MURKOWSKI. I appreciate the efforts that you have indicated today that it's your intention to within 45 days resolve this. But it seems to me that we're at a point when we're talking about energy policy. We recognize the efficiency gains that can be had when we look to upgrades in our appliances that we do need to keep current.

We do need to be more aggressive in staying on top of things rather than operating under agreements that are perhaps 10 years old. Within the industry or the consumer end of the equation here, it doesn't sound as if they believe you are as current as you need to be. If you are unable to work out the details within 45 days I'm assuming you would not have any objection to what we have included in the Section Three which is updating the interagency agreement to improve the cooperation and the delineation of rules and responsibilities of formal decisionmaking.

Is that a correct statement?

Mr. Rodgers.

Mr. RODGERS. Thank you. The Secretary and the Administrator believe that we can address this issue and resolve it. We are committed to doing that.

The issues that you have raised in the legislation are in fact some of the very issues that we need to address. As you point out an MOU that's 13 years old doesn't describe some of the products that are currently at issue and of importance to the current Energy

Star programs. So those are exactly the things that we will be looking at.

We believe the administration can make a faithful committed effort to resolve this. But we do appreciate the catalytic efforts that the committee has had in spurring that effort.

Senator MURKOWSKI [presiding]. Let me ask about the consensus approach that we're taking. We're suggesting that when there's broad consensus out there that you can advance standards more quickly than the 7-year review. I would think that from industry's perspective, that from the consumer's perspective this is something that will keep us nimble. This will keep us ahead of the curve.

From the agency's perspective, what's your feedback on that?

Mr. RODGERS. Very excellent point. In fact we have asked for and we were very grateful that in the Energy Independence and Security Act the Congress did give the Department the authority to accelerate rulemaking, especially when there is a voluntary consensus standard developed by industry and stakeholders. So we're very supportive of this provision and we would like to encourage it.

Senator MURKOWSKI. Good. Mr. Nadel, I want to make sure that I understand what's going on in terms of the consensus standards out there. You referenced some specific State standards or initiatives. Can you tell me what role the states actually play in moving national consensus standards, if you will?

Do we have individual states that are more aggressive and then advancing/pushing that standard out on a national scope?

Mr. NADEL. Yes, I can. For many products that are not federally regulated, regulation begins at the State level.

Senator MURKOWSKI. Like, give me an example.

Mr. NADEL. Drinking water dispensers. State of California came up with a standard. I think it was around 2004. It's subsequently been adopted in six other states. I believe they are all identical.

So we're recommending, now we have seven states. It's time to bring the same standard to a national level. I point out that actually the standard is based on like a 2003 Energy Star level.

So what was—

Senator MURKOWSKI. OK and one question for the rest of you here then. When we talk about broad consensus within the industry that would allow us to accelerate a standard, what would you consider to mean broad consensus?

Mr. PITSOR.

Mr. PITSOR. I think it's important that consensus involve a broad—the manufacturers of the products, advocacy groups, State energy boards, energy commissions, also utility entities. So it's a cross section of users, consumers, manufacturers and policy advocates.

Senator MURKOWSKI. We're all in agreement that's what we're talking about? Thank you. Thank you, Mr. Chairman.

The CHAIRMAN [presiding]. Senator Stabenow.

Senator STABENOW. Thank you very much, Mr. Chairman. Welcome to all of you.

Michigan is home to a major appliance manufacturer, Whirlpool is I can put in an ad for them this morning. They also make refrigerators in Arkansas, Indiana and Iowa. So it's not just Michigan,

but we're very proud to have them in Michigan. They're not just participants in the Energy Star program, but they are leaders.

In fact I want to congratulate them. Because later this month they will receive the 2009 Energy Star's sustained excellence award from the EPA and DOE. The award recognizes the company's leadership in offering consumers appliance, energy and water efficiency through its portfolio brand.

So this is their tenth Energy Star award and fourth consecutive sustained excellence award. So I wanted to make sure and get that on the record today. We're very proud of them.

For companies like Whirlpool the energy guide label and the Energy Star rating helps them to highlight the quality of their products. They take it very seriously. Consumer Reports and Mr. Connelly you talked about looking at under reporting.

Consumer Reports, I'm sure through your efforts reported in October 2008 that some companies under report the energy use of their refrigerators. You talked about the loopholes and test procedures and so on. Unfortunately those reports show that the Energy Star label is really diminished when there is not strong enforcement.

The value of it goes down. It really creates an unlevel playing field for companies who are taking this very seriously and want consumers to be able to trust the labels. So I applaud the fact that the bill under discussion includes a provision requiring DOE to report to Congress on the degree of compliance with energy standards. Certainly you need to be enforcing compliance and letting penalties and companies who violate the rules.

So within that vein I'd like to ask Mr. Rodgers and Mr. McLean to talk more about your current authority in terms of enforcing minimum standards and the Energy Star rating. Have you found companies out of compliance? How did you respond?

Mr. RODGERS. I thank you, Senator. That's a critical question of vital importance. We have very carefully tracked enforcement. I think we respectfully agree with many of the recommendations in the Consumer Reports articles that there should be expanded improvement of our test procedures. We're moving to do that.

We also believe there should be greater independent verification of test results. We're moving to do that. We also believe that the Energy Star program levels should be examined on a regular basis and updated consistent with technology advances. We are moving to do that.

I think in the cases where we have discovered compliance issues I would like to complement the industry associations. In many cases they do a good job of self policing and reporting that to us. But more needs to be done.

Last year we took a settlement agreement with one manufacturer who agreed they were not following the correct rules. They have provided rebates to consumers. Taken their products, modified them, removed the Energy Star label. This is the kind of thing that we intend to do going forward.

Senator STABENOW. Yes, Mr. McLean.

Mr. MCLEAN. Yes, Senator. We do a number of things for the products that we manage. We have been conducting verification

testing, pulling products out of the marketplace and testing them to screen them for compliance for the last 5 years.

We've completed testing across 14 product categories, testing more than 400 products. Of the 400 products that we pulled and tested, we only found four where there were issues. We went back and those have been corrected.

We recognize there has been growth in the Energy Star program. We have to keep up with that growth and the number of products we have to cover. For lighting we've already responded to demonstrated performance issues with enhanced scrutiny in order to qualify products. Manufacturers must submit test data from an independent laboratory for prior approval.

In addition we've instituted quality assurance testing for off the shelf products. Furthermore what we've done is we've also collaborated with accreditation bodies like NIST National Voluntary Laboratory Accreditation Program and the American Association for Laboratory Accreditation to establish requirements for laboratories testing Energy Star products. In phasing in that requirement through qualification testing conducted by impartial accredited laboratories.

So what we're trying to do is as the program expands we're expanding the accreditation and testing procedures to make sure that these products are in line. We have not found major problems with the products that we've been covering.

Senator STABENOW. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you. Both Senator Murkowski and I are going to have to go to the Senate floor for the debate on these public land amendments that are coming up here in the next few minutes. So let me call on Senator Menendez. Just ask if he or unless you're planning to stay, if you are, ok.

If you could go ahead and Senator Lincoln could go ahead and complete the hearing, that would be great.

Thank you. Thank all witnesses again for your testimony.

Senator MENENDEZ [presiding]. Thank you, Mr. Chairman. I want to thank you and the ranking member for holding a hearing on what I think is an incredibly important topic. It may not seem to get the same sex appeal as others, but I think the best energy at the end of the day is that which we don't use and/or use effectively.

So I think this is incredibly important. It's a vital, cost effective way for us to meet our energy challenges. We need to pursue energy efficiency as aggressively as possible.

I want to say that I appreciate that the DOE and the EPA have announced that yesterday that they're going to work out an agreement by the end of April on the Energy Star program for solid state lighting. This is a great development. I look forward to a positive result.

But I want to caution both departments that if they don't reach an agreement as they've pledged to that some of us, certainly, I may very well decide the conflict for them. I'd rather you decide the conflict. But if not, I think it's important to finalize it. I'll be keeping a close eye on that.

So let me ask some questions. Mr. Rodgers, does the department believe that it has the authority to regulate BR type reflector

lamps that are now exempted from Federal standards? If so, do you have, are you considering any regulations for these lamps?

Mr. RODGERS. Thank you, Senator. In fact that topic has been a discussion with the acting general council and the Secretary's office. We expect to make an announcement on that very soon.

We recognize as Mr. Nadel has pointed out that this category of products could potentially provide significant energy savings. So I think I'd be happy to report as soon as possible on the determination made by the Secretary in that area.

Senator MENENDEZ. Is that determination going to be that whether or not you have the authority to regulate now or do you believe you have that and then your answer is about whether or not you're going to consider any regulations?

Mr. RODGERS. The answer that you will be receiving sir, will be when the department plans to begin rulemaking on this topic.

Senator MENENDEZ. Ok. Which means you believe you have the authority to regulate?

Mr. RODGERS. That's a fair conclusion.

[Laughter.]

Senator MENENDEZ. Can't regulate if you don't have the authority, so I assume that you're taking the position that you have the authority. Alright. We'll look forward to that because one of the things that I was considering as we mark up is to clarify the Department's authority and establish a schedule for regulating these lamps.

So I've circulated an amendment to you and to other witnesses here. So I look forward to hearing back from you.

Second, during the Clinton administration the Department of Energy determined that it had the authority to set both energy and peak demands for standard air conditioners. Then during the Bush administration the Department of Energy rejected several consensus standard proposals because they included more than one metric. Now that there's a new administration is that interpretation being reviewed again? Would it be useful for Congress to clarify the Department's authority along the lines of the amendment that I circulated to you and others?

Mr. RODGERS. Thank you, Senator. Let me just say it's always useful when Congress provides clarification. In this case I have not discussed this issue with our Office of General Council that it has been of concern in the past that it was viewed that we did not have the authority to establish more than one metric.

Clearly there are energy savings to be had if this authority was available to us. So we look forward to working with the committee on this issue.

Senator MENENDEZ. Ok. Mr. Pitsor, let me ask you this. In the Energy Independence and Security Act of 2007 we authorized states to help enforce standards on incandescent lamps by seeking injunctive relief in Federal courts. The intent was to permit additional enforcement while following Federal procedures. Is that something that you support extending this injunctive enforcement authority to other standards?

Mr. PITSOR. Mr. Chairman, the enforcement of the general service light bulbs. Why we supported State injunctive relief is that we're talking about a high volume product over a billion light bulbs



or so annually in the United States. As we move the migration to the new efficiency standards and starting in 2012 we could see a lot of light bulb sales at the Federal Government aren't going to be able to monitor, but the states would be able to monitor at retail.

So we supported that State attorney general's ability to seek injunctive relief with respect to that high volume product. I'm not sure we have the same type of situation with low volume type products. Electric motors, transformers, these are not high volume products that we see a problem with respect to enforcement at the present time. So it's somewhat product specific as to whether that would make an appropriate vehicle for enforcement.

Then second the legislation has in the base bill a study that has been called for to look at compliance and enforcement options. We think that that study should be conducted and come back with Congress on recommendations on what needs to be done.

Senator MENENDEZ. I just look at the fact that the DOE has, as far as I can see, has never issued a single fine for failure to comply with efficiency standards. It just seems to me they need help enforcing these laws. So that's why I asked the question what we're looking forward to how that moves forward.

Let me ask two final questions. The sales—and this is to you, Mr. Pitsor as well. The sales of BR type lamps that are exempted from Federal standards appear to represent about 30 percent of total reflector lamp sales. Do you support giving the Department of Energy authority to regulate BR lamps so that more efficient products can become standard practice?

Mr. PITSOR. The industry—we're presently involved in incandescent reflector rulemaking that as we understand will be made final in June, August of this year. The industry has supported migrating these remaining exempted products for DOE rulemaking going forward. So we are supportive of having those remaining BR lamps added to the DOE rulemaking authority.

Senator MENENDEZ. Ok. Let me turn to Senator Lincoln.

Senator LINCOLN. Thank you, Mr. Chairman. We appreciate the chairman and the ranking member for holding a hearing today on appliance efficiency. Want to congratulate you on your work to develop legislation where both industry and energy efficiency advocates and consumer advocates have worked together to get all on the same page.

That's not an easy task. We're pleased with the leadership we've found there.

I think we can all agree that energy efficiency is probably the most cost effective way we can decrease our energy consumption. As Senator Menendez mentioned energy that we don't use is the easiest to capture and to deal with. That's an important point that we've tried to make here.

It all obviously reduces our carbon footprint and maintains energy security. There's no doubt that each and every one of us should be looking for the ways that we can make that happen. I'm especially interested in the topic today because manufacturing of electrical equipment and appliances is one of the top manufacturing sectors in my home State of Arkansas as Senator Stabenow mentioned.

I hope that the improvements set forth in the Appliance Standards Improvement Act will provide clarity to efficiency standards and support their industry. I want to echo what Senator Stabenow mentioned earlier in terms of helping to strengthen the Appliance Standard Improvement Act helping to strengthen the Energy Star program. There are concerns there making sure that the clear and tougher standards and how we improve the enforcement of that Energy Star program requirements.

Mr. Rodgers, you continue to say moving to do that. Do you have dates certain set for the types of things that you're challenged by and moving toward doing that?

Mr. RODGERS. Thank you, Senator. Let me give you two examples. On refrigerator test procedures we have already invested resources and are building a testing site so that we can conduct independent tests of refrigerators.

We're also evaluating tougher Energy Star standards for several of the white good appliances as we speak.

Senator LINCOLN. Good. That's good. We want to move forward and see that happening.

Maybe you might touch a little bit about you, in your testimony you talked about education and outreach programs such as the recycle my old frig campaign. My husband continues to tell me that the small freezer in my basement that I bought at a yard sale if I would just replace it that I would probably pay for my new freezer in a matter of moments.

[Laughter.]

Senator LINCOLN. From what I would save. I am the product of depression babies. So throwing out something that still works is very difficult for me.

But what are you finding? Maybe you might elaborate on the importance of education and encouraging and maybe describe some of the detail efforts that DOE is making on educating consumers.

Mr. RODGERS. Senator, it's a great question. Energy efficiency although extremely cost effective requires constant reminders. So we found great success in working with Disney to promote for kids the Ratatouille character and helping promote compact fluorescent light replacement, working with the military to promote the change out of old lamps on military bases.

As you mentioned the recycle the frig campaign because unfortunately many Americans put the old frig in the basement or the garage. So instead of saving energy with the Energy Star product, now energy has increased. So we do believe that investing in educating Americans will be critical.

The Secretary is committed to that. You will see some of new programs from the Department this year with the resources that Congress has provided.

Senator LINCOLN. Great. My husband would be proud that you're echoing his thoughts there.

Mr. Pitsor, in your testimony you mentioned that there's many energy efficient technologies that exist. But we've got to strive for wider recognition of these technologies and promote their use. You list energy tax incentives as one policy approach to advancing energy efficiency in our economy.

I've been involved in pushing for premium motor tax credits to help incentivize the use of more efficient motors. I also believe that a rebate is an incentive to taxpayers to replace motors in need of repair with new motors rather than extending the life of old, less efficient motors. I think it's worth discussion and an important thing that we could do.

In today's economy how do you believe we can best make new and more efficient electrical equipment such as motors affordable to various industries particularly as well as individuals?

Mr. PITSOR. Thank you, Senator. Thank you for your leadership with respect to tax incentives for speeding up the deployment of today's technologies that are available. In the situation of electric motors, motors represent 23 percent of our electrical use. They power pumps, fans, compressors in industry and homes and buildings.

We have premium efficient motors, NEMA premium motors available today. But the initial cost is higher than the EPACT level efficiencies.

Senator LINCOLN. Right.

Mr. PITSOR. To make up for that initial cost impact the tax incentives, motor purchase incentives, programs, utility sponsored programs, rebate programs, all can help bring down the initial cost to the purchaser. So when he needs to replace that motor or replace that other product. That initial price hurdle can be overcome.

So we look forward to putting together and having the committee consider a rebate program for industrial motors. When that motor fails a building owner has to decide whether to replace it or to simply have it repaired. Obviously if you're repairing it, you're repairing an inefficient product to begin with. We need to change that process over to incent buying the new motor.

Senator LINCOLN. Incentivizing the individual that's, as you said, replacing or repairing that motor is important. Is it, I mean, do you think quantitatively I mean we can really show that it's going to be cost effective in terms of energy consumption?

Mr. PITSOR. We did an analysis with respect to a rebate program that we've been talking about. If we simply change that 1 percent of the old motors currently installed, 1 percent each year that would be about 300,000 units we'd be saving an estimated 1.5 billion kilowatt hours. So there's a significant energy savings potential there.

Senator LINCOLN. Great. Thank you for your work on that. I'm interested to explore.

Mr. Upton, it was good to meet you the other day. I appreciate getting to visit with you in the hallway. I want to again commend you and all the groups involved in this bill for working together on how we can really do great improvements in efficiency for products and benefit both our environment as well as our consumers.

In your testimony you stated that one of the positive aspects of the Appliance Standards Improvement Act we're discussing today is that it provides manufacturers the flexibility to choose several paths in providing energy efficiency to consumers while also allowing consumers choices in what lighting fixtures that they want in their homes. How critical was providing this flexibility? How does the residential lighting industry provide the balance between pro-

viding consumers with what they want decoratively and also most efficiently?

Mr. UPTON. Thank you for your question. It was on.

The decorative lighting industry in the portable section was a very fragmented industry. Literally, mom and pop kind of operations where you might make 50 of this and 75 of that and 100 of something else. Having pathways for those kind of companies to be able to meet those needs are really critical.

If we wouldn't have had that in California, it was our judgment that the only kinds of products would be available in portable industry would have been commodity products. You just couldn't afford to manufacture for one State. That's one of the reasons we asked for this to become a national bill.

But if you drop the various pathways that save the energy and especially the fourth item that we talk about which I call bulb in a box. We're going to be introducing people to energy efficient lighting that they've never experienced before because it's going to have probably at this time a compact fluorescent bulb in it, later an LED. If we can make those kinds of things happen the cost savings as far as the energy consumption was about 136 million kilowatt hours for California.

The payback time that you were referring to earlier is seven tenths of a year. So the value to the consumer's eye, the value of the manufacturer's eye, because he's got the various pathways. For different manufacturers different technologies will be valuable.

We think anytime that multiple technologies are available that are still energy efficient then the consumer has brought a choice and we've got a win/win situation for everyone. Government achieves what it wants. The manufacturer has a product he can deliver. The consumer has the choice of something that meets everybody's needs.

Senator LINCOLN. So that flexibility for those pathways is critical. I know because we've got a couple of those mom and pop operations where, like you talk, small businesses that produce decorative items and other things like that. But to be able to—

Mr. UPTON. Senator, the industry is so small. My family taught me energy efficiency was you turned the light off and if you didn't you got banged alongside the head.

Senator LINCOLN. That's right.

Mr. UPTON. Happily we've got more opportunities today, especially with controls that are becoming much more widely used. But I think if we can deliver the quantity of products that we want to have and provide all that choice then you've got the best of all worlds. That's one of the reasons we fought so hard to find the right answers.

Because the day you don't have consensus with government, advocates and industry then you have confusion in the marketplace. If there's confusion in the marketplace our experience is the consumer stays with what they know. We want them to move forward into new products.

Senator LINCOLN. Great.

Mr. UPTON. If I didn't respond to you properly, I'll try again.

Senator LINCOLN. No, you did great.

Mr. UPTON. Thank you.

Senator LINCOLN. Thank you. Thanks, Mr. Chairman.

Senator MENENDEZ. Thank you. I have one last question and one follow up and then we'll, unless a member appears we'll close the hearing.

Mr. McLean, I've heard that Energy Star covers a fairly large portion of products on the market, usually at least 25 sometimes 50 percent. That some including Secretary Chu is thinking that it might be useful to complement the current Energy Star program with a higher energy super star tier that might represent the top 5 percent of products. But still be required to be cost effective to consumers.

What do you think of this concept?

Mr. MCLEAN. This clearly is something we do want to talk to the Department of Energy about. We do agree that there is a range of products out there with a range of efficiencies. If we go back to the reason that we created Energy Star, what we were trying to do is overcome information barriers to consumers and other barriers in the marketplace.

We were not trying to invent new technologies or advance new technologies. We wanted to get the technologies that had been invented and were out there to get them consumed. So the whole brand was created around that concept.

Another concept is to identify a market segment of individuals who want to be first movers, who are willing to pay more for higher technology efficiency. We may need a new strategy to deal with that group. So we want to talk about how best to do that.

We agree that there are people who want higher efficiencies and are willing to pay for it. If the technology is there at no additional cost, then we can change the Energy Star level. The issue is not, you know, can you adjust it. But is there a difference in cost and are you talking about a different segment.

So in the product categories we want to look at that. If we can move toward some way of recognizing the highest efficiency products, that might be a very good thing to do. But I think we want to look at each of the categories and say, is this a generic thing or is this specific? Are we talking about a few specific areas where we could do that effectively? Then figure out how to do that.

Senator MENENDEZ. Ok. Mr. Pitsor, let me just go back to an answer you gave me a few minutes ago with reference to the BR type lamps. I heard you say, well we're engaged in the regulatory process. The question is this has been exempted for 17 years.

So when is it that you support, if you support, going ahead and including giving DOE the authority to regulate what is about 30 percent of total reflector lamp sales? What timeframe do you support it in?

Mr. PITSOR. Yes, Mr. Chairman. In the Energy Security and Independence Act 2007 we significantly narrowed the exemption of what was available. So in 1992 when the Congress passed the initial exemption, that has been narrowed over the years. DOE set actually a wattage cap on BR lamps of 65 watts during that process.

In 2007 now we've narrowed that group to even a smaller category such that 95 percent of your medium screw based sockets in your home are now or will be under Federal regulation. So we're

talking about a very small set remaining that we support being added to the Federal program at the conclusion of the—

Senator MENENDEZ. So are you saying that it's not 30 percent of total reflector lamp sales in the marketplace?

Mr. PITSOR. I'm talking about the options the consumers have in their home in terms of what types of bulbs they want to use for different settings. Because obviously how you light your dining room will be different than how you light your living room in terms of what types of bulbs and types of fixtures you're using. So you have reflector. You have incandescent. You have halogen. You have compact fluorescent.

There is a mix of products that are available to consumers.

Senator MENENDEZ. Mr. Nadel, do you have any views on this?

Mr. NADEL. Yes. I mean I do believe it's at least 30 percent of reflector lamps that are exempted even with the tightening up. It used to be 40 to 50 percent. What Mr. Pitsor is saying is he's adding in all the general service pear shaped bulbs.

Yes, if you add those all in it dilutes it. But the fact is that's it's about 30 percent or more of the reflector lamps. We estimate that closing this loophole will save enough electricity to power 300,000 American homes. So we think it's pretty significant and not small.

Senator MENENDEZ. Alright. Thank you all for your testimony. We appreciate that. Seeing no other members here, the hearing is adjourned.

[Whereupon, at 10:55 a.m. the hearing was adjourned.]

[The following statement was received for the record.]

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

Chairman Bingaman, Ranking Member Murkowski and members of the Committee, thank you for providing me the opportunity to testify on behalf of the Association of Appliance Manufacturers (AHAM) regarding the Appliance Standards Improvement Act of 2009 (S. 598) to amend the Energy Policy and Conservation Act to improve appliance standards. We appreciate the Committees willingness to listen to our views as this legislation was developed and as it moves through Congress.

AHAM is the trade association representing the manufacturers of major, portable and floor care home appliances, and suppliers to the industry. The home appliance industry is an important factor in the U.S. economy as its product shipments are valued at \$30 billion annually. Our members manufacture products that are in virtually every U.S. household and employ people in the U.S. in 32 states and 158 Congressional districts.

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

FEDERAL STANDARDS

We understand and have supported federal efficiency standards over the years for products that AHAM member company's manufacturer. Uniform standards throughout the U.S and even throughout North America and beyond are preferable to a patchwork of disconnected state-by-state standards. However, the Department of Energy (DOE) needs the proper resources to devote to the development of test procedures and standards to ensure a full analysis is completed. DOE's challenge is to stay on schedule, particularly with enactment of new laws, while ensuring that there is not a rush to judgment that yields poorly developed standards that do not save energy, frustrate consumers or that create unneeded costs to the manufacturers of these appliances.

The current law provides a framework to ensure federal standards balance a number of factors so that the final efficiency standard provides real energy savings. It makes no sense to establish a standard so stringent that penalizes consumers and

manufacturers and slows the rapid deployment of new much more efficient products. The current process can be improved through more DOE resources and encouragement and fast tracking of consensus standards and test procedures, but otherwise is a comprehensive process that starts with updating the test procedure taking into consideration—

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

Once a test procedure is established, then for standards revision there needs to be a determination of—

1. Baseline energy usage with existing standards using today's machines
2. Maximum levels of energy efficiency that are technically feasible, including impacts on performance, and which are economically justified to consumers and to US manufacturers, who, among other things, are trying to maintain domestic employment

However, the National Appliance Energy Conservation Act (NAECA) makes clear that no standard can be set which may result in loss of product availability in popular styles and prices, and product functions consumers want.

Analysis must determine what standard provides benefits exceeding the burdens. The factors considered are as follows:

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

Thus, energy savings is not the only factor because without assuming that manufacturers can make the product and consumers will buy the product everybody—the government, the manufacturers, the consumers and the environment—loses.

Further, establishing statutory schedules for new test procedures or standards must take into account other necessary regulatory activities and that future developments may occur that would obviate the need for some scheduled rulemakings. This could occur with the support of all stakeholders. For example, DOE was required by law to establish a new energy efficiency standard for clothes dryers in 2000 but determined, with the support of state energy offices, environmental advocates and manufacturers, that it was not necessary because the newly promulgated clothes washer standards reduced the average drying time for standard washer loads to such an extent that a new dryer standard would not result in any significant energy savings over the existing standard. These types of practical policy examples need to be weighed before new schedules are imposed on the Department of Energy. There have been numerous iterations of standards development and reviews over the years, with more already scheduled and not even fully implemented. The chart\* below shows the many iterations for a few products and how far into the future standards are already in the cue to be revised.

#### APPLIANCE STANDARDS IMPROVEMENT ACT OF 2009

As consideration is given to how much more energy savings can be achieved from home appliances, we need to be mindful that huge gains have been made recently and more are planned through recent laws and upcoming regulations. Refrigerators/freezers, dishwashers and clothes washers account for a 43% combined decrease in energy consumption since 2000. From a global climate change perspective, the energy savings realized in 2008 shipments of refrigerators, dishwashers and clothes washers versus 2000 models would offset the CO<sub>2</sub> emissions of more than 698 million gallons of gasoline consumed or the annual CO<sub>2</sub> emissions from 1.3 coal fired power plants.

Clothes washer energy consumption has decreased by 63% since 2000 while tub capacity has grown by 8%. Dishwasher energy consumption has dropped nearly 30% and water consumption has declined 29% since 2000. Refrigerator energy consump-

\* Chart has been retained in committee files.

tion has also decreased 30% since 2000 and efficiency, measured by a unit's energy factor has increased 39%. The average refrigerator sold today consumes less energy than a 60-watt light bulb left on 24 hours a day.

The essential principle behind the underlying Energy Policy and Conservation Act (EPCA) is that national uniformity can be maintained with a series of vigorous national standards which save energy, water, carbon and consumer's money while maintaining product utility, moderate prices, a competitive manufacturer base, and minimizing the negative impact on domestic employment. A simplistic payback test, for example, which does not take into account all relevant factors, undermines this balance.

There is a critical need for coordination and integration of federal regulatory scheme because of the enormous cumulative regulatory burden on the appliance industry of investing in new designs for multiple products over many years while at the same time meeting increasingly challenging and related environmental requirements such as ozone depletion and climate change.

Improvements in overall appliance efficiency in consumer homes will not be achieved in the best way by additional micro-management and constant revision of the appliance standards law. This law was last substantially revised just in 2007 and many of its provisions, such as those requiring future rulemakings, the handling of standby energy power, and the acceleration of consensus rulemakings, have not been fully employed.

There are three major ways in which appliance efficiency can be enhanced:

1. Incentives: There should be support for continuation and expansion of consumer rebates and manufacturer's tax credit for all manufacturers of efficient appliances regardless of where the product is produced. These incentives not only create a critical stimulative effect in the economy but also incentivize manufacturers, retailers and consumers to buy increasingly energy-efficient products even when the existing units still function (accelerated replacement). Buying even average or above average efficient appliances today and replacing the 10-year old appliances, for example, provides significant energy and water efficiency and carbon savings for consumers and society.
2. DOE Resources: There must be significant additions of resources for DOE energy efficiency programs, including but not limited to appliance standards. Constant new Congressional mandates without additional resources are not a solution.
3. Energy Star Resources: The Energy Star Program should receive significant new funding for revision, expansion and promotion. It is a highly successful program and is a win-win for consumers, retailers, manufacturers, the environment and the economy.

#### TEST METHODS

The present EPCA test procedure wisely requires a balance between measuring actual field energy use (which is highly variable) with the cost, uniformity and repeatability parameters required for test procedures for products mass-produced globally. Congress must recognize that simply adding new mandatory deadlines on top of dozens of existing deadlines in EPCA does not resolve the problem of an agency that does not have the resources to undertake all these tasks in a timely, accelerated manner.

We support authorizing consensus test procedures to be adopted more quickly when the industry and others agree. It makes sense to allow noncontroversial test procedures to be "fast tracked," i.e., they can be promulgated in direct final if they meet certain criteria subject to subsequent sufficient negative comment such that a regular rulemaking is required.

#### ENERGY STAR PROGRAM

AHAM understands the need to periodically review Energy Star levels as long as the review does not require a modification. Further, specifying that a review has to occur based on a 35% market share may not be appropriate for every product. If 80% of the market is Energy Star, that shows it has been a success. Also, it is possible that a raise in the Energy Star qualifying level would be counterproductive. For example, today's refrigerator on average uses the same power as a 60 watt light bulb. If the market share were to be high for Energy Star refrigerators and DOE was forced to increase the qualifying level by let's say 10%, that would mean the consumer would see a savings of going from a 60 watt light bulb to a 54 watt light bulb and possibly a significant increase in cost of the refrigerator. The savings of 6 watts or about 50 cents per month in utility costs may not be enough to pay for



a large increase in the price of the refrigerator, which would lead the consumer to buy a model that is less efficient. It also is necessary to allow recoupment of investment such that, as with appliance standards, Energy Star levels are not changed constantly and there is opportunity to sell newly designed products.

Regarding third party test requirements, great care should be taken in requiring widespread, costly third party testing. If done the wrong way it will add many millions of dollars to costs, and there are not sufficient outside laboratories or programs to handle this volume. Allowing for a cost effective verification program through industry trade associations, for example, should be allowed.

#### STUDY OF COMPLIANCE WITH ENERGY STANDARDS FOR APPLIANCES

It is important that any study regarding the compliance standards program be undertaken from an expert and objective point of view.

#### INCENTIVES

It clearly remains vital that efficiency standards are dealt with at a national level providing consumers, ratepayers and appliance manufacturers the benefits of a national market. However, incentive programs are doing a powerful job of supplementing mandatory standards and can be targeted to regional energy concerns. The recently enacted American Recovery and Reinvestment Act of 2009 (Public Law No: 111-5) provided \$300 million for the Energy Efficient Appliance Rebate Program. This program provides rebates to replace used appliances with more energy efficient ENERGY STAR products, as authorized by Section 124 of the Energy Policy Act Of 2005 (PL 109-58). A State energy office would receive funding once it has established an appliance rebate program.

We appreciate DOE's willingness to listen to our views on this matter, but it is essential that DOE does not overly complicate this program and distribute this funding to the state energy offices quickly and simply. DOE should not allow outside interests to try to use this program, which is supposed to be to stimulate consumer spending on new, more energy efficient appliances, as a vehicle to try to achieve their longstanding political objectives. This program would have the dual impact of reducing home energy usage while incentivizing consumer spending for manufactured products. Further, the added savings that consumers would obtain through lower utility bills would stimulate additional spending in the economy. It is imperative that states be given the flexibility to implement the details and specifics based on their regional needs.

The stimulus package was intended to help the economy. Shipments of major appliances decreased 10% in 2008 and shipments of appliances continue to fall. Already, shipments for 2009 are down 20% compared to 2008. DOE must distribute this funding to the states quickly to help stimulate this area of the economy and save energy.

If every household in the US upgraded to ENERGY STAR appliances, residents would save more than \$10 billion in utility costs per year. The rebate would provide an important benefit to the environment through energy savings. By replacing appliances with ENERGY STAR appliances, the US would save more than 82 billion kWh per year.

The energy savings and climate benefits are significant from an Energy Efficient Appliance Rebate program. It is a practical, effective public policy measure at this time. Retiring older, less efficient appliances with ENERGY STAR products is the single, most cost effective step a consumer can take to save money and energy.

#### CONCLUSION

The bottom line is that consumers have great choices for dealing with energy efficiency in the home appliance arena. Public policy has evolved to blend mandatory and voluntary market programs through the Energy Guide label, national appliance standards and Energy Star providing a pragmatic approach, but federal agencies need the resources to do it right. We look forward to continuing to work with the Committee on these issues.



APPENDIX  
RESPONSES TO ADDITIONAL QUESTIONS

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RESPONSES OF STEVEN NADEL TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* Mr. Pitsor has recommended two amendments: to authorize an electric motor rebate program, and to give DOE exclusive jurisdiction for Energy Star programs involving Solid State lighting.

What is your position on these?

Answer. ACEEE has worked with NEMA to refine the proposal for an electric motor rebate program. We support the current proposal and understand that Senator Lincoln may offer it as an amendment.

Regarding Energy Star programs for solid state lighting, we prefer that DOE and EPA work this out rather than establish the precedent of Congress intervening on program details. Furthermore, we believe that the portable lighting fixture standard in ASIA provides the foundation for resolving this issue, with most solid-state lighting fixtures subject to the DOE specification, but fixtures that are primarily decorative subject to a specification along the lines of the EPA specification. But if the agencies cannot resolve this issue, then we support the proposed amendment.

*Question 2.* You have proposed amendments establishing efficiency standards for three additional products: water dispensers, hot food holding cabinets, and portable electric spas. In each case, your proposed standard is the same as that adopted in several states.

Please briefly describe what you know regarding the positions of the manufacturers of these products on a federal standard?

Answer. We have reviewed and discussed the portable electric spa standard with the trade association for these products, the Association of Pool & Spa Professionals, and they tell us they support this standard. Their one comment was to reference a forthcoming ANSI test standard and we have provided the suggested edit to Committee staff. For the other two products there is no trade association and so we have contacted multiple manufacturers. All of the manufacturers we have reached support the standard, a few with small edits that we have provided to Committee staff.

*Question 3.* The Energy Star program encourages the purchase of highly efficient products by identifying the top 20-30 percent most-efficient models with the Energy Star label. There has been discussion of authorizing a program that would label the top, few most-efficient models, a so-called "Super Star" program.

What do you see as the advantages and disadvantages of this concept, and do you think Committee should have DOE and EPA study it and report to Congress?

Answer. Energy Star typically includes at least 25% of the products on the market and in some cases more than 50% of the products on the market are Energy Star. For most of these products there is no way for consumers to differentiate between typical Energy Star products and the best products. We have heard suggestions from consumers, from manufacturers, and from program operators to provide recognition for the best products so consumers who are interested can look for these products, and manufacturers and program operators can better promote them. The prime advantage of such a "Super Star" program would be to increase sales and market introduction of the best products, accelerating the market transformation process. Such a label would not be appropriate for all products, and should be limited to products that are cost-effective to consumers over the product life. The disadvantage of such a program is that it would require a significant effort to explain a new dual program (Energy Star and Super Star) to consumers, and if there is not a significant consumer education effort at program launch, some consumers will be confused. We believe the potential advantages are large enough that EPA and DOE should be directed to study the concept.

*Question 4.* In Japan the appliance efficiency program is known as "Top Runner". Minimum efficiency standards for a product are automatically and periodically increased based on the market share of the most-efficient models.

What are the advantages and disadvantages of this approach and do you believe the Committee should have DOE study it and report to Congress?

Answer. The Top Runner approach provides a straight-forward way to set new standards and would significantly raise the standard levels over time. However, the Top Runner approach does not consider consumer economics nor impacts on manufacturers and therefore is a very blunt instrument. Furthermore, in Japan at least, my understanding is that Top Runner standards are not quite mandatory and that the standards cover fleet average efficiency, meaning that some products can fall short of the standard as long as an offsetting proportion exceed the standard. In Japan I have been told that there is a strong sense of shame that manufacturers feel, making the standards nearly mandatory. I think U.S. manufacturers have a different attitude and non-mandatory standards would not work here. Also, fleet average standards are very difficult to enforce. Given these disadvantages, I question whether it is worth the resources to study such an approach for the U.S.

#### RESPONSES OF STEVEN NADEL TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* Please describe briefly how, in your opinion, this bill best improves upon the existing structure for updating appliance standards.

Answer. This bill addresses a few limitations in the current appliance standards process such as setting deadlines for DOE to respond to petitions on initiating test procedure and standard rulemakings and allowing fast-track approval of consensus changes to test procedures. DOE has often been slow to respond to petitions in the past and this bill would prevent this process from dragging on too long, while still leaving DOE free to rule on the merits of petitions. The bill's process section primarily addresses test procedures and does little on the process for setting new standards. In addition, the bill directs DOE to study compliance with standards and to develop recommendations for improving compliance. Our understanding is that while compliance is generally pretty good, there are some compliance problems. We hope this study will lead to recommendations and actions to improve compliance.

*Question 2.* Please describe the different policy options available to greater deploy and use energy efficient technology.

Answer. There are a variety of policy options for increasing use of energy-efficient technologies. Among the options are:

- Labeling of products for energy consumption, so consumers can identify the most efficient and wasteful products. Labels can have numeric values, a scale (e.g. 1-5 stars), or be a simple pass-fail designation like the current Energy Star.
- Promotion and incentive programs to encourage consumers to purchase efficient products. These are commonly operated by utilities, but some states also offer programs. Incentives can also take the form of tax incentives, as were contained in the Energy Policy Act of 2005 and have been revised several times.
- Procurement initiatives targeting large-scale purchases of highly efficient products, so manufacturers have an incentive to develop and bring new high-efficiency products to market. Purchasers can be government agencies, utilities, or large companies.
- Mandatory minimum efficiency standards that set an efficiency floor and eliminate inefficient products from the market.

*Question 3.* Please describe an efficient process that could be undertaken to review test procedures within the DOE.

Answer. DOE needs to systematically review all of its test procedures to see that they reasonably estimate performance of typical products in actual use and to see that they reasonably measure the performance of modern products. EISA directed DOE to review and revise all test procedures over a seven year period. We recommend that DOE develop a plan and schedule for this process and that DOE prioritize test procedures for major products that are known to be out of date, such as the procedures for televisions (can't be used for flat screen sets), refrigerators (problems with how the procedure treats ice-maker energy use), air conditioners (procedure does a poor job of reflecting performance in the field), and water heaters (overestimates performance of on-demand water heaters). Key parties involved in the standards program should be surveyed or interviewed to help identify the test procedures that most need updating so these can be targeted first.

*Question 4.* Please describe a process that could be undertaken within the industry to ensure that there exists "broad consensus" regarding test procedures.

Answer. Industry trade associations often work together to develop test procedures they all support. Industry has a lot of expertise on how to do this. However, this process often leaves out non-industry participants who also have useful exper-

tise such as utility, state, federal and non-profit organization experts. On the other hand, these other experts often do not have enough time to be involved in the many detailed meetings needed to develop test procedures. I would recommend that at the beginning and middle of each process to develop a test procedure, a broad array of experts be invited to help define the needs and objectives at the beginning of the process, and assess how well these needs and objectives are being addressed in the middle of the process, so that the final test procedure is likely to meet the needs of most interested parties.

*Question 5.* Please describe options on how to ensure that solid state lighting (SSL) technologies are pursued in a cooperative fashion with both the DOE and EPA and interested stakeholders.

*Answer.* We believe that DOE has done an excellent job of working with industry to develop technologies, test procedures, and market support materials to help advance solid-state lighting. EPA and other stakeholders should be invited to identify issues that are not being adequately addressed and DOE should be asked to respond to these suggestions. As appropriate, some tasks should be delegated to EPA and other parties, but given all its work in this area, DOE is the logical agency to coordinate this effort.

*Question 6.* Please describe the process your organization undertakes with the appliance makers to address consensus standards. What is your definition of a consensus standard?

*Answer.* ACEEE works to develop consensus standards by working with a wide array of parties including manufacturers, their trade associations, states, utilities, environmental and consumer organizations and technical experts. We seek to obtain the best data on what is technically feasible and likely to be cost-effective to consumers. Based on these data we seek to develop workable draft proposals, share drafts with interested parties and solicit comments. Based on comments we receive, we modify the draft proposal and seek consensus of all parties. However, some parties want strong standards, others weaker standards, so consensus often requires compromise among the parties. We often seek creative solutions to bridge differences of opinion, such as creation of new product classes with different standard levels and development of multiple standards and effective dates (milder initial standards, stronger latter standards). In order to help drive this consensus process, it is usually helpful that some action will take place if consensus is not reached, such as a DOE rulemaking, state action, or Congressional action. Fear of these actions can often drive the critical compromises that are needed to reach consensus. In our view a consensus standard is one everyone can live with and that is considered superior by all to the alternative of not reaching agreement.

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RESPONSES OF RICHARD D. UPTON TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* Please describe briefly how, in your opinion, this bill best improves upon the existing structure for updating appliance standards.

*Answer.* The bill would establish "first time" energy efficiency standards for the portable lighting industry. Importantly, they are standards that both industry and advocates support.

*Question 2.* Please describe the different policy options available to greater deploy and use energy efficient technology.

*Answer.* Many policy options are available to help promote energy efficiency in residential lighting. The policy which would yield the most energy efficiency in residential lighting use would be a policy which incentivizes the conversion of the existing housing units to switch to more energy efficient lighting. Currently, many regulations exist at the state level such as Title 24 in California which requires new housing to meet some energy efficiency standards. All the new laws directed at residential lighting product whether fixture or portable only effect new lighting purchases and as such will take a very long time to make significant energy savings when compared to the total energy used in residential lighting. The best option to affect the greatest energy savings and to try to speed the conversion process to energy efficient product would be to supplement new portable lighting appliance standards with an incentive to replace the large existing stock of residential lighting fixtures through a significant tax incentive for consumers to convert to energy efficient product.

*Question 3.* Please describe an efficient process that could be undertaken to review test procedures within the DOE.

*Answer.* The organization responsible for lighting standards and lighting test procedures in the U.S. and Canada is the Illuminating Engineering Society (IES). The IES has a long history (100+ years) of developing practical and technically-correct

procedures that involve both measurement of light as well as proper lighting application information. IES standards are developed using a formal consensus process developed by the American National Standards Institute (ANSI). Many IES lighting standards are also approved as ANSI standards. Both the DOE and the EPA have utilized IES-developed standards in the process of advancing efficient lighting including new solid state lighting technology and this process has worked efficiently with the enthusiastic support of other lighting industry organizations such as the American Lighting Association (ALA) and the National Electrical Manufacturers Association (NEMA). These organizations have worked together, for example, to form ad hoc groups that quickly resolve specific test, measurement or lighting application problems. The process works well and the DOE should be encouraged to make greater use of it for their internal needs since it represents a broader consensus than the recommendations of individual contractors or consultants.

*Question 4.* Please describe a process that could be undertaken within the industry to ensure that there exists “broad consensus” regarding test procedures.

*Answer.* The lighting industry is experienced in working with others to develop a broad consensus on major issues including application recommendations and test procedures. The industry’s own codes and standards via the ANSI consensus process is a good example. Another example is the widely-used “Standard 90” which was first developed in 1975 and has now gone through several revisions. “Standard 90” is the basis of energy-efficient lighting design for new buildings in the U.S. It is an effort of the IES and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), but the development process has substantially involved the design community, building users, owners, developers and the general public.

The experience of the industry over the last 25 years has proven that broad consensus-based efforts, such as described above, are the most effective way to change lighting practice and transform the lighting market to incorporate energy-efficient products, policies and practice.

*Question 5.* Please describe options on how to ensure that solid state lighting (SSL) technologies are pursued in a cooperative fashion with both the DOE and EPA and interested stakeholders.

*Answer.* Options to gain cooperative action on LEDs between the EPA, the DOE industry and other stakeholders:

A. Direct the EPA & the DOE to keep their discussion agenda focused on substantive program differences vs. “turf” battles.

B. The Senate Energy & Natural Resources could direct the EPA & the DOE to add other parties to their 45 day process, including industry representatives (ALA & NEMA) one or two advocates, plus one or two members of the Senate and House Energy Subcommittees.

Totals:

Industry 2  
Advocates 2  
Government 2 or 4

C. If the EPA & DOE can not reach a successful resolution to their differences have the 6 to 8 parties identified in the above “B”, convene and develop recommendations and submit them to a joint Senate and House Energy Subcommittee panel for ratification.

*Question 6.* Please explain the benefits of a consensus process between advocates and industry and how they can work effectively with government to move the market forward. Can this be done without mandates?

*Answer.* The key benefit of gaining a consensus between advocates, industry and government, when establishing legislation on a product, is you create a “uniform voice” to consumers regarding the product. As a result you have the opportunity to gain the consumers “buy-in” and the best opportunity for a successful market transformation. Without a “uniform voice” the parties send competing messages to consumers and they are then confused. When confused the consumer tends to ignore all messages and continues to purchase products they know and are comfortable using.

In setting any mandates it is important that: 1) they not price any new technology out of the market place and/or stunt their development, 2) any requirements should be available. For example, after the 190 watt power limiter was legislated for torchieres we learned there was no technology available and the industry was very challenged to meet the required deadline set for the product.

Regarding mandates—they should, in our view, be limited and only used if there is a significant safety issue or over arching objective to be obtained. Most all, safety

issues are met in the lighting industry through the requirements of UL standards and the Uniform Electric Code. Both entities do an excellent job of keeping their standards/codes up-to-date and have frequent, scheduled reviews.

The most effective mandates are those that industry, with input from others, requests of government such as SB 598 where we, the lighting industry with the participation of ACEEE, have recommended action on energy efficient portables. In this instance government and advocates will gain significant energy savings and industry knows it will be able to successfully produce energy efficient products that give consumers the choices they want.

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RESPONSES OF MARK CONNELLY TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* Please describe briefly how, in your opinion, this bill best improves upon the existing structure for updating appliance standards.

Answer. The Appliance Standards Improvement Act of 2009 improves the existing structure for updating appliance standards in several ways:

- First, by allowing any person to petition DOE to amend test procedures and requiring DOE to act on the petition within 180 days.
- Second, it requires the DOE Secretary to review all test procedures at least once every 7 years. While an improvement over no review requirement whatsoever, this proposed review cycle remains too infrequent. In our opinion, the review cycle should be half that being proposed, that is, once every 3½ years, since technology changes quickly and test procedures need to keep up.
- Third, it requires a review of product categories when market share for an Energy Star product reaches 35%. Again, this is better than the current lack of any requirement, but it is our opinion that this percentage should be lowered to 25% since setting a higher bar will result in a more meaningful program.
- Fourth, test methods are to be reviewed and revised to reflect actual product use. (Please see my answer to question 6 for details.)
- Finally, a demonstration of compliance with Energy Star shall include, as appropriate, third-party verification, third-party certification, and government purchase and testing of products from the market. We suggest, however, that the phrase “as appropriate” be deleted since we believe these are always needed.

*Question 2.* Please describe the different policy options available to greater deploy and use energy efficient technology.

Answer. Some available policy options for deploying and using energy efficient technology include continually raising the bar for the Energy Star program. When more than 35% of all products sold in any given category have achieved an Energy Star, then that signals that the technology and economies of scale have reached a point where achieving an Energy Star is too “easy” and that the bar need to be raised.

Also of concern is that there are no minimum performance standards. For example, as dishwasher energy efficiency becomes tighter, manufacturers may be tempted to sacrifice wash performance. At this point, without minimum performance standards, there is a danger where Energy Star products get a bad reputation—much like low flow toilet had when they were first introduced.

*Question 3.* Please describe an efficient process that could be undertaken to review test procedures within the DOE.

Answer. One simple way to improve the process would be to solicit stakeholders once each year about what, if any, test procedure changes are warranted. (Stakeholders would include manufacturers, umbrella organizations like AHAM, retailers such as Sears, Home Depot, and Lowes, and consumer groups such as ACEEE and Consumers Union.)

Another way to improve the process is to review DOE test procedures when more than 10% of the products (as measured by sales volume) in any given category have been granted waivers by DOE.

That many waivers indicate that test procedures are out of date relative to the products in the market. At that point, a task force could be appointed by DOE to determine whether test procedures need to be modified. The task force would be given a short deadline (one month) to determine if test procedures need to be modified and recommend how they should be modified. The task force should be small, but consist of at least one representative from industry (e.g., AHAM), DOE, and a consumer group (e.g., ACEEE).

*Question 4.* Please describe a process that could be undertaken within the industry to ensure that there exists “broad consensus” regarding test procedures.

Answer. AHAM (Association of Home Appliance Manufacturers) the appliance manufacturers' umbrella organization, provides that process now. However, influence in AHAM is proportional to market share, meaning large companies can monopolize the process and possibly block consensus and progress. While non-manufacturers and consumer groups can comment on AHAM proposals, our experience—not surprisingly—has been that manufacturers' concerns and perspectives always come first. Outside the appliance industry, other similar umbrella organizations could be utilized. While it is always nice to have a broad consensus, it is our opinion that government needs to ensure that the expectations of the marketplace are met, especially when consumers are paying a premium, as they are with Energy Star products.

*Question 5.* Please describe options on how to ensure that solid state lighting (SSL) technologies are pursued in a cooperative fashion with both the DOE and EPA and interested stakeholders.

Answer. We suggest that one of the two agencies should be appointed as the lead. Our recommendation is that EPA be made the responsible agency. EPA has a larger staff and budget devoted to the Energy Star program. In fact, we believe that responsibility for all lighting products be given to EPA. The need for sustainable lighting development should take into account additional issues, like toxic materials and recycling needs. This can be best accomplished in a centralized approach that is lead by the EPA. Please note that we'd like to add our concern that halogen lighting is being exempted from efficiency standards. Halogen lights use much more energy than CFLs, just like other incandescent lights. While halogens are more efficient than standard incandescent bulbs, granting them an exemption would be unfortunate.

*Question 6.* Please describe how the energy star label factors into your product rating systems.

Answer. The Energy Star label does not factor into product ratings published by Consumer Reports or ConsumerReports.org. While we may report whether or not a product has an Energy Star, this is only to help our subscribers identify the product when they shop.

In many cases, we do not agree that the DOE test procedures represent consumers' experience. Quite simply, in many cases the DOE / Energy Star tests are too easy. For example, although dishwashers are now tested with soiled dishes, the amount of soil is anemic and on average, represents about 1 soiled plate (out of 10 plates). By EPA's own estimate, consumers would be wasting about 6,000 gallons of water per year—and the energy used to heat that water—by running pre-rinsed dishes through the dishwasher.

For washing machines, the test load averages to about an 8 pound load and does not "stress" or assess the machine at its maximum load. However, all manufacturers (especially for front loading and high-efficiency top loading washers) tout their machines' maximum capacity in advertising.

When testing refrigerators, electricity consumption is calculated with the fresh food compartment at +45° F. At this temperature, food will quickly spoil. (We recommend +37F). In many cases, the conditions at which appliances are tested are akin to measuring vehicle fuel economy when going downhill with a tailwind.

*Question 7.* In your opinion, will the Department of Energy ever be able to keep up with changing technology, even with these improved streamlines?

Answer. Yes with these improved streamlines and increased attention to the issues, DOE should be able to do a better job of keeping up with ever-changing technology. DOE has to keep up because consumers are relying on DOE's information when purchasing appliances and other products that will be consuming electricity for years to come.

*Question 8a.* You mentioned a test done on refrigerators with their ice makers turned off that allowed manufacturers to take advantage of a testing loophole in order to sell a product undeserving of an Energy Star.

What sanctions, if any, do you think there should be for these manufacturers?

Answer. The sanctions that DOE put in place were appropriate. However, DOE should threaten even bigger sanctions in the future to prevent manufacturers from taking advantage of situations like this again. DOE should also consider mandatory third-party testing and certification of appliances from manufacturers who take advantage of testing loopholes. For example, if one refrigerator is found out of compliance, all their models of that type in that line/type need to be subject to mandatory, third-party testing. Of course, if DOE reviews test procedures more frequently, the likelihood of this happening again diminishes.

*Question 8b.* Are the examples used in your testimony anecdotal, or do you believe there is widespread abuse?



Answer. The examples used in our testimony were real and disturbing. It is difficult to say how widespread they are without casting a very wide net and testing many more products.

*Question 9.* You mention the example of the dishwasher being tested with clean dishes instead of dirty ones, resulting in a skewed efficiency rating for dirt-sensing dishwashers. Are there examples where your reports have been able to positively influence the test procedures?

Answer. Consumers Union can only test a fraction of the total appliances in a market. In addition, the resources we can devote to publicizing our findings dwarfs those that manufacturers can marshal through advertising and promotion to drown out our findings. Finally, Consumers Union and Consumer Reports is no substitute for systematic, rigorous, and regularly updated test protocols.

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RESPONSE OF KYLE PISTOR TO QUESTION FROM SENATOR BINGAMAN

*Question 1.* Mr. Nadel proposes several amendments dealing with: BR lamps; state enforcement; multiple metrics; building codes; state waivers, and data reporting.

Please give the committee your reaction to these proposals for the record (if NEMA does not have stakeholders with an interest in any one of these amendments, would you help us coordinate a response from the appropriate association)?

Answer. BR Lamps—NEMA and ACEEE reached a consensus agreement on coverage of the remaining few BR lamps through a DOE rulemaking and submitted the recommendation to the Committee. The Committee subsequently approved the agreement during mark-up on March 31, 2009.

State Enforcement—States (and persons) currently have authority to enforce federal law under 42 USC Section 6305. Sec. 6305 allows “persons” to file citizen suits to enforce a violation of any part of the Act or a Rule provided they give 60-day notice to the Secretary of Energy, the Federal Trade Commission, and the alleged violator. Presumably this gives the alleged violator of a 60-day cure period to avoid an enforcement action from “any person.”

In EISA 2007, Congress amended Sec 6304 to allow States to seek injunctive relief to enforce general service incandescent light bulb standards. This was a special case due to nature of the regulated product and the manner in which light bulbs reach consumers through distribution. Light bulbs are not refrigerators or commercial HVAC equipment or utility distribution transformers. Over a billion light bulbs are sold each year and given the new light bulb standards that begin in 2012, it was felt that injunctive relief might assist in DOE’s enforcement of the light bulb standards. The key difference with the EISA provision, is that in the case of light bulbs, no 60-day notice need be given. The unique nature of light bulbs as a federally-regulated product is the only reason these products were treated specially for enforcement. Those reasons do not exist for other federally-regulated products.

Multiple Metrics—Efficiency is regulated at the appliance or equipment system-level. Permitting DOE to set a standard on a component of a regulated product is inappropriate since manufacturers need to have flexibility to trade-off various component technologies to achieve the overall efficiency of the product, and they need flexibility to innovate components as well.

Building Codes—Congress has established a specific framework for the interaction of the federal energy efficiency requirements on products and states establishment of building codes prescribing technologies and efficiency requirements. That framework must be supported; otherwise, products that are legally permitted under federal law could be prohibited due to a state building code that was written with efficiency requirements that prohibit such products.

State Waivers—The suggestion seems to be a solution looking for a problem. No state waiver has ever been denied due to lack of product data from manufacturers. States must show a compelling and unique state circumstance for a waiver of federal preemption. The unique or compelling state circumstance is not a function of manufacturers’ product data being available or not.

Data Reporting—DOE already has legal authority to request information of manufacturers. Manufacturers already provide information to DOE during the technical assessment for specific product rulemakings. Requiring detailed annual reporting of information to DOE raises questions on how the information would be used and protected, not to mention the costs for the hundreds of manufacturers and importers that would now file such annual reports.

## RESPONSES OF KYLE PISTOR TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* Please describe briefly how, in your opinion, this bill best improves upon the existing structure for updating appliance standards.

Answer. The bill provides certainty by establishing specific deadlines for decisions and/or actions by the administering agencies. The bill mandates a review every 7 years of standards/test procedures if the product is not under a prescribed review cycle. It expands on the EISA 2007 consensus process for standards by adding test procedure updating. The bill also seeks to improve on the enforcement of the standards through a study and report on recommendations to the Congress.

*Question 2.* Please describe the different policy options available to greater deploy and use energy efficient technology.

Answer. Advancing energy efficiency comes about through the use of a mix of policy approaches. Product standards establish energy efficiency requirements for products thereby eliminating the least efficient products in favor of higher efficient products. Consumer education is carried out by many stakeholders, including manufacturers, and is a key driver in gaining understanding and acceptance of new, energy efficient products. Labeling of products provides information to the purchaser on the energy costs of operating the equipment and assists the purchaser in making trade-off decisions of first cost versus life cycle costs of operation. Building codes that are performance based provides the builder or architect with flexibility in selecting specific components and technologies in order to achieve overall energy efficiency of the structure. Voluntary programs like Energy Star is another type of consumer education since the Energy Star mark on the product indicates that the product represents a higher efficiency than products not containing the mark. Procurement of energy efficient products by federal and state governments can be a driver in the market inasmuch as it can influence private sector procurement decisions. Most energy efficient products have an initial higher cost than inefficient products. Energy tax incentives (e.g., rebates, tax credits, accelerated depreciation, tax deductions) assist in overcoming the initial cost hurdle in purchasing energy efficient technologies.

*Question 3.* Please describe an efficient process that could be undertaken to review test procedures within the DOE.

Answer. Typically, test procedures are reviewed when DOE undertakes a rule-making to consider amending the energy standard for the product. The test procedure is the first step in the standards-setting process since an agreed upon test procedure is needed in order to determine if a product meets or exceeds an established energy efficiency level. Since products are reviewed by DOE on a prescribed basis, the revision of the test procedure should go hand-in-hand. In some cases, DOE adopts a specific version of a test procedure which may then get modified or updated by the Standards Development Organization (SDO) that wrote the standard. In such cases, it may be appropriate to update the DOE adopted procedure to reflect the changes made by the SDO. The legislation under consideration would permit such an update through the submittal of a petition and for DOE to conduct a rulemaking to ascertain whether the petition should be granted and the test procedure amended. In many cases, the SDO changes may be quite minor and the updating of the DOE adopted procedure is noncontroversial. In those cases, the legislation allows DOE to adopt the petition as a direct final rule, subject to objection by an interested party and withdrawal of the action by DOE.

*Question 4.* Please describe a process that could be undertaken within the industry to ensure that there exists "broad consensus" regarding test procedures.

Answer. The writing of a test procedure results in the sponsoring SDO to have the document balloted for approval. Under the American National Standards Institute (ANSI) process, such balloting takes place to ensure that there is a "balance of interests" involved in approving the procedure which include manufacturers, users, general interest, and government. Any negative votes on the document must be addressed by the sponsoring SDO, and there is a due process mechanism to address any balloting questions. A concern with "international" test procedures is that they may not apply similar "ANSI" processes.

In submitting a consensus recommendation to DOE, either on a test procedure or on an efficiency standard, the recommendation needs to have the support of a broad group of interests including manufacturers, non-governmental efficiency organizations, state governments, utilities, and other stakeholders related to the product in question.

*Question 5.* Please describe options on how to ensure that solid state lighting (SSL) technologies are pursued in a cooperative fashion with both the DOE and EPA and interested stakeholders.

Answer. Solid state lighting represents a new lighting technology which has the promise of transforming how lighting products are manufactured, designed, and in-

stalled. This process will take years, and the results could be quite dramatic for our economy. Such a paradigm shift in lighting will be successful if all parties approach the matter in a collaborative manner. All parties will have a role to play in assisting the deployment of the technology, in educating consumers, in changing codes and practices, and in sharing best practices. The Energy Star program offers the promise of assisting consumers in selecting the best performing of these new SSL products thereby supporting the transformation of the lighting market. If consumers have a “bad” experience with new technology, then they will resist change. It is therefore critical that the government agencies involved (and their contractors) coordinate efforts in a cross-agency process that engages the SSL industry. NEMA favors consolidation of SSL technology programs at DOE given its expertise in SSL, and recommends that EPA and other agencies defer to DOE on issues relating to SSL Energy Star requirements for residential and commercial lighting fixtures that use SSL technology as the light source.

*Question 6a.* Outdoor lighting efficiency standards seems like a huge opportunity for energy savings, considering the vast numbers of lights lining streets, highways and parking lots across America.

Can you elaborate on the specifics of the proposal that you mentioned in your testimony?

Answer. Discussions are underway within the lighting industry (lamps, ballast, luminaires, and lighting controls) on appropriate approaches to increase the deployment of energy-efficient outdoor lighting technologies and products. These approaches may include efficiency standards to prohibit lower efficient technologies in favor of commercially available alternatives that are cost effective to end-users; application based approaches given the variety of outdoor lighting uses that may require different products for different applications; and energy tax incentives to deployment technologies.

*Question 6b.* What barriers currently exist?

Answer. Outdoor lighting, like most lighting, is application specific and therefore no single approach may meet all the needs. In seeking to address energy costs associated with outdoor lighting, one must also consider concerns for sky glow, light trespass, effects on animals and plants, glare, brightness perception, safety and security, and circadian disruption. End-users of outdoor lighting also are quite varied. There is lighting associated with lighting the exterior of buildings, but also street and roadway lighting which includes municipalities, utilities, federal and state departments of transportation. Each of these end-use applications must be taken into account in crafting a national outdoor lighting approach.

#### RESPONSES OF BRIAN MCLEAN TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* How serious do you believe the compliance problem is with Energy Star; how many staff do you have for monitoring and enforcement; and are there specific plans to increase this capacity in FY2010?

Answer. For the product categories EPA manages, which comprise more than 50 of the 60 product categories covered in the ENERGY STAR program, EPA has in place a comprehensive quality assurance program for assuring the integrity of the ENERGY STAR label. This includes formal partnership agreements with manufacturers; an initial certification process that uses standardized, formal test procedures; and the review of submitted data. In terms of verification testing, EPA uses a combination of approaches to maximize coverage of the product categories covered under the ENERGY STAR program so as to effectively use government resources. These approaches include EPA testing of products, leveraging the testing programs of third parties, and specific testing programs for certain product categories. For example, in residential lighting, EPA also requires quality assurance testing to drive enhanced quality assurance and quality control processes for manufacturers, as quality has been shown to be lacking for some lighting products.

To date, EPA has conducted verification testing on 14 product categories, testing more than 400 product models. Of the more than 400 models tested, only four failed to meet all relevant ENERGY STAR performance requirements. The issues in those four instances have been resolved.<sup>1</sup> EPA recognizes that the dramatic growth in the size of the ENERGY STAR program and the increasing complexity of the products covered warrant expanded scrutiny. To that end, EPA is phasing in verification testing requirements (in addition to qualification testing) as part of the ENERGY STAR partnership, starting with computers. EPA believes this will be an effective mecha-

<sup>1</sup>Maintaining the Value of ENERGY STAR: 2007 Report (USEPA, 2008) and testing results from 2008 product verification testing.

nism to ensure compliance, without requiring a substantial additional investment in EPA staff time.

*Question 2.* The Energy Star program encourages the purchase of highly efficient products by identifying the top 20-30 percent most-efficient models with the Energy Star label. There has been discussion of authorizing a program that would label the top, few most-efficient models a so-called “Super Star” program.

What do you see as the advantages and disadvantages of this concept, and do you think Committee should have DOE and EPA study it and report to Congress?

Answer. EPA believes super efficient products offer an important opportunity for energy savings and greenhouse gas emissions reductions and is supportive of promoting them in the market. In fact, in response to a need expressed by our energy efficiency program partners (e.g., utilities), we have developed a “Save More” marketing platform that has been used in a number of successful applications to highlight higher tier ENERGY STAR products. This platform uses higher efficiency levels that have been developed by the Consortium for Energy Efficiency (CEE), a non-profit membership organization implementing energy efficiency programs across the country. Before pursuing additional approaches, there are a number of issues to consider:

- Is a new designation for super efficient products the most effective approach for promoting such products given the typically much higher first costs to consumers; and how would the issue of these higher first costs be addressed?
- How does such a designation interact with the tax credits that have been established for a variety of super efficient products? Do the tax credit requirements implicitly already provide this designation?
- How would this effort interact with a number of other ongoing efforts to define and promote super efficient products such as the Consortium for Energy Efficiency’s Tiers, the tax credits mentioned above, and a new Top Ten program designating the top ten efficient products being developed through a newly formed non-profit?
- Does the ENERGY STAR program already capture many of these benefits given that it is not a static program, but is regularly updated to have more stringent requirements as the market moves?
- Is this designation one that key market players such as utilities, retailers and others can effectively support in the market place and under what conditions does more information assist consumers versus complicate the purchasing process?

EPA continually reviews these types of issues and the role the ENERGY STAR is playing in advancing energy efficient products in partnership with market players.

#### RESPONSES OF BRIAN MCLEAN TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* Please describe briefly how, in your opinion, this bill best improves upon the existing structure for updating appliance standards.

Answer. EPA is responding to questions regarding this legislation from the perspective of its role with the ENERGY STAR Program, which involves a set of voluntary standards. As we indicated in our written testimony, we believe we have the necessary authority to update ENERGY STAR specifications and test procedures without the need for additional authorities as provided in this bill.

*Question 2.* Please describe the different policy options available to greater deploy and use energy efficient technology.

Answer. There is a broad range of policy options available to increase the deployment, use, and benefits of energy efficient technologies and practices. These go well beyond mandatory appliance standards and the labeling of appliances that were the focus of the March 19th Senate Energy and Natural Resources Committee hearing. The policy options cut across federal, state, and local governments and they involve a number of federal agencies including EPA, the Department of Energy, the Department of Housing and Urban Development, and the General Services Administration. The full portfolio of energy efficiency policy options include:

- Energy Efficiency Programs (utility, 3rd party, and/or government)
- Building Labeling and Energy Performance Disclosure (e.g., Energy Star and Energy Smart Home Scale)
- Appliance Labeling [e.g., Energy Star (voluntary) and Federal Trade Commission EnergyGuide (mandatory)]
- Building Codes (mandatory)
- Appliance Standards (mandatory)

- Utility Regulatory Policy (e.g., resource planning, utility financial incentives, rate design, and distributed generation policies)
- Tax Policy
- Other Government Policies (e.g., “lead by example” in government owned buildings and procurement policies)
- Energy Efficiency Resource Standards (EERS)
- Existing Federal Statutory Authorities (Clean Air Act)

*Question 3.* Please describe an efficient process that could be undertaken to review test procedures within the DOE.

Answer. EPA defers to DOE in responding to this question.

*Question 4.* Please describe a process that could be undertaken within the industry to ensure that there exists “broad consensus” regarding test procedures.

Answer. EPA makes use of an open, transparent, and inclusive process when developing ENERGY STAR specifications. A key element of this process is the identification of a well vetted, fair, accurate, and reliable test procedure that ensures that products compete on a level playing field when testing for ENERGY STAR qualification. Whenever possible, the Agency references test procedures developed through a consensus-based standard development process like, for example, that which is offered by the International Electrotechnical Commission (IEC). Such testing standards are also global in nature and offer the benefit of international harmonization for product testing, saving manufacturers and governments considerable resources. For example, EPA was actively engaged in, and requires the use of, IEC62087 for testing On Mode TV energy use, and IEC 62301 for testing standby TV energy use as part of the ENERGY STAR program.

In cases where a consensus-based standards body has not created a test procedure for a product category that EPA wishes to add to the ENERGY STAR suite of products, EPA will draft and vet with stakeholders a product testing approach. For example, EPA proposed and vetted with a wide range of interested parties—from manufacturers, to cable, satellite, and telecomm service providers, to utilities, and non-profit organizations—a means of testing the energy performance of cable, satellite, and telecomm boxes. EPA and stakeholders finalized this test procedure and EPA has called for its use in the first phase of its ENERGY STAR Cable, Satellite, and Telecomm requirements (effective January 1, 2009). EPA has also engaged with the IEC in the development of a test standard for these products and IEC is considering making use of large portions of the current ENERGY STAR test procedure. Should IEC finalize a test procedure for cable, satellite, and telecomm boxes that EPA feels confident is fair and produces accurate and reliable results, EPA will call for the use of the IEC test procedure for the next phase of its ENERGY STAR Cable, Satellite, and Telecomm Requirements (in effect January 2011).

*Question 5.* Please describe options on how to ensure that solid state lighting (SSL) technologies are pursued in a cooperative fashion with both the DOE and EPA and interested stakeholders.

Answer. This is an issue that EPA and DOE will specifically address as part of the 45 day process to improve coordination between the agencies. We plan to report back to the Committee on a resolution to this issue in that timeframe.

*Question 6.* Please further describe the timeframe you will undertake to accomplish your recommendation to improve interagency coordination of the ENERGY STAR Program. Please describe how you will work with Program stakeholders to improve the success of the ENERGY STAR Program.

Answer. EPA and DOE will report back to the committee within 45 days as to the resolution of issues with interagency coordination and standardization of program management across the agencies. This effort will involve identification and discussion of these issues and resolution of the issues. Written documentation of the resolution will be provided.

EPA will continue to work with program stakeholders to increase the benefits the program offers in EPA’s areas of responsibility with the ENERGY STAR program, which constitute about 90 percent of the program areas and include:

- more than 50 product categories across heating and cooling, lighting, office equipment, home electronics, and commercial food service;
- new homes construction;
- new and existing commercial and existing buildings; and
- industrial energy management

*Question 7.* Please describe the administrative tools you have to improve the overall efficiency of appliances. What other tools do you believe are necessary to ensure that we continue to achieve greater success within this area?

Answer. EPA has designed and managed the ENERGY STAR program to improve the efficiency of a wide variety of consumer products including heating and cooling equipment, office equipment, consumer electronics, commercial food service and light fixtures. The ENERGY STAR program is employed to help consumers find products that are more efficient than federal minimum standards as well as products in product categories not subject to federal standards. The ENERGY STAR program is well positioned to continue to play this role. For example, as of 2007, the ENERGY STAR Program, with the support of ENERGY STAR program partners such as states, local governments, and others, is delivering more than 48 TWh of electric savings and 8.5 MMTC of greenhouse gas reductions annually from qualified office equipment.<sup>2</sup> ENERGY STAR qualified consumer electronics, such as TVs, DVDs, audio products and products with external power adapters are delivering a combined savings of 14.7 TWh and 2.8 MMTC in greenhouse gas reductions per year.<sup>3</sup> For rapidly changing, globally traded products such as office equipment and consumer electronics, ENERGY STAR has proven a particularly effective approach to driving greater efficiency.

*Question 8.* One area of concern regarding the Standards Program has been the turn around time in ensuring that test procedures and energy conservation standards are monitored and updated as needed. Please describe how you will address these concerns.

Answer. EPA defers to DOE in responding to this question.

*Question 9.* Within your testimony you reference that you are doing all that you can to examine and review operations to be even more efficient and productive—can you please further elaborate what these operations entail?

Answer. The testimony reference noted in this question is from DOE's testimony from the March 19, 2009, hearing and therefore EPA defers to DOE in responding to this question.

#### RESPONSE OF BRIAN MCLEAN TO QUESTION FROM SENATOR BARRASSO

*Question 1a.* Improving appliance energy efficiency is an important component of keeping consumers' energy bills down.

The Energy Star program has helped consumers make informed decisions regarding energy efficiency products.

It has also raised consumer awareness of the issue and encouraged manufacturers to improve efficiency.

There are, however, products made by small businesses in my state—innovative, energy-conserving products—that have faced challenges with the Energy Star program.

Are heating devices, like space heaters, currently included in the Energy Star Program?

Answer. Space heaters are not currently included in the ENERGY STAR program. EPA has historically focused on the mass market for traditional forms of heating where the greatest opportunities for reducing greenhouse gas emissions exist (i.e., central AC and heating). These equipment types also have solid, industry vetted test procedures, and meet ENERGY STAR program guiding principles, including:

- 1) Significant energy savings can be realized on a national basis.
- 2) Product performance can be maintained or enhanced with increased energy efficiency.
- 3) Purchasers will recover their investment in increased energy efficiency within a reasonable time.
- 4) Energy efficiency can be achieved with several technology options, at least one of which is non-proprietary.
- 5) Product energy consumption and energy performance can be measured and verified with testing.
- 6) Labeling would effectively differentiate products and be visible for purchasers.

EPA's prior assessments of space heaters demonstrated that although space heaters can deliver heat in a cost effective and efficient manner, in some limited situations they do not offer the opportunity for efficiency that whole home systems do. EPA could revisit this assessment if new information comes to light.

<sup>2</sup>ENERGY STAR and Other Climate Protection Partnerships: 2007 Annual Report (USEPA, 2008)

<sup>3</sup>Ibid.

*Question 1b.* Do residential heating systems that independently generate 100 percent of their power from an attached solar or wind power source qualify for consideration? If not, why?

Answer. The ENERGY STAR Program currently addresses furnaces, boilers and heat pumps. To the extent these products meet the relevant ENERGY STAR specification, regardless of their power source, they could qualify. We do not specifically qualify residential heating systems that independently generate 100 percent of their power. Given the need for back-up power for solar or wind sources, we are not aware that such a heating system exists.

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RESPONSES OF DAVID RODGERS TO QUESTIONS FROM SENATOR BINGAMAN

*Question 1.* I have a strong interest in the integrity of the Next Generation Lighting Initiative and I share the frustration of the industry partners in the Initiative that EPA and DOE have established different and conflicting test procedures for solid state lighting.

Given DOE's leadership in the development and understanding of this new technology, why should DOE not have exclusive jurisdiction with respect to Energy Star activities related to solid state lighting? How and when do you plan to resolve this conflict?

Answer. The Department of Energy has maintained a preeminent position in solid-state lighting (SSL) since 2002 with its research and development program and its commercialization support efforts. The Department has worked diligently to establish a strong relationship with industry and all stakeholders in an effort to assure that the marketplace for SSLs was in no way compromised by lack of quality products. The Department recognizes that the energy savings potential of SSLs is huge—the potential to reduce lighting energy use by 33 percent—and has focused each element of its Program on meeting that potential.

The Department intends to work in partnership with the Environmental Protection Agency (EPA) in the current inter-agency deliberations to address any ENERGY STAR Program differences, including those with SSLs.

*Question 2.* On page 5 you outline the case of cheating by a refrigerator manufacturer. The investigation by Consumer Reports indicates that compliance may be a systemic problem. You state that DOE is establishing third party testing and that there is "new work that coincides with recommendations for program improvement."

Could you be more specific? For example, how many positions are dedicated to monitoring and enforcing compliance, and what are the plans to increase this capacity in fiscal year 2010?

Answer. The Department of Energy (DOE) is exploring ways to strengthen monitoring and enforcement provisions of both ENERGY STAR and the Department's energy conservation standards. DOE is evaluating, for example, recommendations from its Peer Review of the ENERGY STAR Program, the Consumer Reports article, and stakeholder feedback.

The ENERGY STAR Program across the eight product categories managed at DOE already requires third party testing of Compact Fluorescent Lamps and Solid State Lighting, and third party qualification testing of windows, doors, and skylights. Appliances are currently self-certified by manufacturers using DOE test procedures. The Department is considering whether to establish a random off-the-floor testing program of these products in order to ensure products at retail meet ENERGY STAR qualifying criteria. If the program were started, the Department would anticipate dedicating up to one-half of a full time equivalent (FTE) position at Headquarters to manage third party testing for the products in the ENERGY STAR program. At DOE's operational contractor's office, it is expected 0.75 FTE will be required to handle the logistics of the program. At the testing laboratories, where there is one facility dedicated for lighting products, one for appliance testing and between seven to ten for fenestration product testing and simulation, the Department expects upwards of five FTEs working solely on ENERGY STAR verification testing.

The Appliance Standards Program is equipping a testing facility at the National Energy Technology Laboratory (NETL) where products will be tested to verify their compliance with efficiency standards. The facility will also be used to gather information related to product cost impacts resulting from increases in energy efficiency. Start up of this facility is underway with ramping up of activities to occur through out FY2010.

*Question 3.* The Energy Star program encourages the purchase of highly efficient products by identifying the top 20-30 percent most-efficient models with the Energy

Star label. There has been discussion of authorizing a program that would label the top, few most-efficient models, a so-called "Super Star" program.

What do you see as the advantages and disadvantages of this concept, and do you think the Committee should have DOE and EPA study it and report to Congress?

Answer. This concept of a "Super Star" has been discussed at the program level for some time and the Department welcomes the opportunity to investigate it more fully. The advantage of such a program is that it could provide the consumer with a broader picture of what energy efficiency purchases are available and allow better alignment with utility incentives for customers, or incentives to retailers and/or manufacturers. A potential disadvantage will be communicating the new approach to consumers to avoid confusion when individuals attempt to determine which level is appropriate for their specific needs. These are issues that need to be investigated.

Secretary Chu recently stressed the key role that energy efficiency in appliances and buildings should play in curbing greenhouse gas emissions. He also emphasized the need to ensure that consumers see efficient appliances and home materials as choices that will ultimately save them money. The Secretary has described a "superstar" category of perhaps the top 5 to 10 percent best performers, saying this would allow manufacturers to claim that their products would ultimately save consumers the most money despite higher up-front costs.

*Question 4.* In Japan the appliance efficiency program is known as "Top Runner." Minimum efficiency standards for a product are automatically and periodically increased based on the market share of the most-efficient models.

What are the advantages and disadvantages of this approach and do you believe the Committee should have DOE study it and report to Congress?

Answer. Japan's Top Runner program establishes energy conservation standards based on the most energy-efficient products on the market at the time of the standard setting process. Top Runner identifies the efficiency levels of the most efficient commercially available products, and uses this efficiency level as the baseline for which the corporate weighted average energy efficiency must meet or exceed. Unlike the U.S. system, this allows manufacturers to produce products that are less efficient than the standard as long as the manufacturer compensates by producing very efficient models in sufficient quantities to ensure that the total shipment weighted average efficiency is greater than the standard. Additional differences include that the Top Runner program has a shorter time frame for the standard setting process however it lacks provisions for potential needs such as regional variation in standards.

Although we see that key differences exist between the appliance standards programs in Japan and the U.S., we have insufficient information at this time to reach a conclusion on the merits of the Top Runner program. For example, while the corporate weighted average energy efficiency component of the Top Runner program allows for flexibility, it also makes enforcement more complicated, as it requires more data collection, record keeping, and verification of calculations. A more in-depth study of the Top Runner program would be needed to provide greater understanding of whether the differences that exist are advantages or disadvantages. This study would investigate areas such as support of innovation, speed of development, recognition of regional effects, relative magnitude of energy savings, cost of meeting standards, impact on the availability of product features, and manufacturer impacts.

*Question 5.* You describe DOE's requirement to release 22 final rules by June 30, 2011, and that the Department is assessing the resource needs to meet these requirements.

When will this assessment be complete and can a copy be made available to the Committee?

Have decisions been made regarding the funding level for the program for fiscal year 2010, and if so can you summarize them?

Answer. The program currently operates with a full-time staff of 11 employees. The efficiency measures that were introduced in 2006 greatly increased the productivity of the Appliance Standards Program and allowed the program to meet its obligations through 2008. In the last three years, the program has issued almost as many rulemakings as were issued in the 18 prior years. Additionally, 23 new rulemakings were initiated.

The additional workload to accomplish requirements from the Energy Independence and Security Act of 2007 (EISA) as well as other identified needs have created challenges for the program. Adding additional employees to the Appliance Standards Program and adjusting the program to meet growing demands will help overcome these challenges. A top priority is updating test procedures that have not kept pace with technological developments. Also, activities related to test procedures, such as petitions for waivers from DOE test procedures and verification of compliance with test procedure and efficiency standard requirements, need addi-



tional resources and attention. DOE will report back to the committee once the assessment of Appliance Standards resources has been completed.

RESPONSES OF DAVID RODGERS TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* Please describe briefly how, in your opinion, this bill best improves upon the existing structure for updating appliance standards.

Answer. The proposed bill would amend the requirements for the Department of Energy's (DOE's) consideration of a petition to establish amended energy conservation standards by adding time limits for DOE responses to petitions. The bill would require DOE to respond to a petition for an amended standard within 180 days and would require DOE to complete a rulemaking within three years from granting a petition.

This petition process is, to a certain extent, redundant given the existing rulemaking requirements in the Energy Policy and Conservation Act (EPCA). Section 305 of the Energy Independence and Security Act of 2007 (EISA) amended EPCA to require DOE to review the energy conservation standards for residential products and commercial equipment every six years.

As structured, the bill may allow for some acceleration of rulemakings compared to the schedule set by the EISA amendments and thus deliver energy savings sooner. This would be dependent upon the quality and extent of information included in a petition. Petitions that contain detailed information relevant to a standard and recommend changes could encourage more robust rulemakings. Petitions submitted with little information or without recommendations as currently permitted in the proposed bill, could increase the burden on DOE to respond in a timely manner and impact resources needed for other rulemakings.

*Question 2.* Please describe the different policy options available to greater deploy and use energy efficient technology.

Answer. There are several policy options available to greater deploy and use energy efficient technology. These options include Research and Development (R&D), information, incentive, and regulatory programs.

In addition to developing new technology, R&D programs include the establishment of performance metrics (e.g. EER, SEER, U-Values) and testing procedures to ensure standardization and also aid the commercialization and deployment of new technology. Technology competitions, like the L Prize, provide a bridge between R&D and the other deployment programs, and help to spur manufacturers to develop and deploy energy efficient technology. Programs such as the labeling programs (e.g., ENERGY STAR, the Federal Trade Commission's EnergyGuide and EnergySmart Home Scale (E-Scale) of Builders Challenge) help consumers understand energy performance and costs when shopping for a new product or home. Incentive programs are very effective in helping consumers overcome higher up front costs for efficient products that deliver net savings over the life of the product. Many of the incentive programs have been built on the information included in the education and labeling programs. Regulatory programs, such as the Department of Energy's appliance energy conservation standards program can be very effective at increasing deployment which results in significant energy savings.

*Question 3.* Please describe an efficient process that could be undertaken to review test procedures within DOE.

Answer. Test procedures are the foundation for consistent testing and measuring of product performance, and are the foundation for both the appliance standards program and the ENERGY STAR program. For those products that fall under the mandatory appliance energy conservation standards program, DOE develops test procedures vetted through the formal rulemaking process. In many cases, DOE encourages and adopts test procedures that have undergone a rigorous industry vetting process in which both industry and non-industry stakeholders participate. These voluntary consensus test procedures are a very efficient way to review and maintain test procedures as technology matures.

For example, DOE requires that ENERGY STAR windows, doors, and skylights be tested under procedures maintained by the National Fenestration Rating Council. Such test procedures have been carefully vetted with DOE input and are used as the basis for product qualification in residential and commercial building codes and standards across the U.S. and Canada.

*Question 4.* Please describe a process that could be undertaken within the industry to ensure that there exists "broad consensus" regarding test procedures.

Answer. Test procedures developed through notice and comment rulemaking provide the opportunity for all interested stakeholders to review and contribute, leading to test procedures that are transparent and apply equally to all. Furthermore, many DOE test procedures either incorporate by reference or are based on test procedures

developed by other standards bodies (e.g., Air-Conditioning, Heating and Refrigeration Institute, American Society of Heating, Refrigerating and Air-Conditioning Engineers, International Organization for Standardization, International Electrotechnical Commission, Illuminating Engineering Society, Institute of Electrical and Electronics Engineers, National Electrical Manufacturers Association). Each organization has its own procedures for enabling public participation in their standards-development process. Typically, these standards bodies involve multiple stakeholder groups, including industry, DOE and other federal agencies, energy efficiency advocacy groups, utilities, states, trade associations and others in developing their test procedures. In addition, DOE has supported contractors, including staff from the National Institute of Standards and Technology (NIST), to participate in many of these processes.

The Energy Policy Conservation Act as amended, requires DOE to review each test procedure on a seven-year cycle to determine if amendments are warranted. In carrying out this review, DOE will evaluate its test procedures as well as those developed by the relevant standards bodies, and will consider providing further support for those standards bodies that develop updated test procedures that meet the program's requirements.

*Question 5.* Please describe options on how to ensure that solid state lighting (SSL) technologies are pursued in a cooperative fashion with both the DOE and EPA and interested stakeholders.

*Answer.* This is an issue that DOE and EPA will specifically address as part of the process to improve coordination between the agencies. The Department and EPA plan to report back to the Committee on a resolution to this issue. The Department and EPA will focus on options that reduce confusion among consumers and manufacturers, provide consumers with efficient lighting choices with the features they want, clarify management roles for SSL, better utilize industry standards organizations for the development of test procedures, and align agency programs with the goals of the Next Generation Lighting Industry Alliance, and protect the integrity of the ENERGY STAR brand.

*Question 6.* You stated that the Department is currently assessing the resources needs of the appliance standards team in light of the ambitious schedule you have taken on in order to meet your deadlines. Do you feel that you have or will have the workforce necessary to complete your objectives?

*Answer.* Yes, the Department is taking steps to ensure it has adequate staff. The program currently operates with a full-time staff of 11 employees. That level is not adequate to meet all the existing appliance standards requirements, and additional staff are being hired. The efficiency measures that were introduced in 2006 greatly increased the productivity of the Appliance Standards Program and allowed the program to meet its obligations through 2008. In the last three years, the program has issued almost as many rulemakings as were issued in the 18 prior years. Additionally, 23 new rulemakings were initiated. The Department is proposing additional measures to help sustain this increased level of efforts.

A top priority is updating test procedures that have not kept pace with technological developments. Also, activities related to test procedures, such as petitions for waivers and verification of compliance, need additional resources and attention.

*Question 7.* You spoke of your education campaigns Operation Change Out and Recycle my Old Fridge. Have these programs been effective? What do you find is the best incentive for consumers to move from older appliances to newer, more efficient ones?

*Answer.* ENERGY STAR OPERATION CHANGE OUT—THE MILITARY CHALLENGE, a joint effort of the Department of Energy (DOE) and the Department of Defense (DOD), was launched on Earth Day of 2008 at Camp Lejeune and resulted in the immediate change-out of 17,500 inefficient, incandescent light bulbs with ENERGY STAR qualified compact fluorescent bulbs. As of April 2, 2009, 147 bases have joined the challenge with the Air Force at 100 percent participation of major commands in the U.S. Over 800,000 bulbs have been changed, saving over 214.6 million kWh, \$53.8 million energy costs, and preventing over 175,000 metric tons of greenhouse gases over the lifetime of the bulbs.

The ENERGY STAR, Recycle My Old Fridge effort focuses on drawing increased attention to the millions of inefficient refrigerators in homes throughout the U.S. and to the benefits of proper recycling and of replacing the inefficient models with ENERGY STAR qualified models. Begun in 2008, the program targets the 44.5 million households with refrigerators over ten years old and 16.9 million households with freezers over 10 years old. Combined, inefficient freezers and refrigerator-freezers use \$4.9 billion per year in energy costs. Also an estimated 84.1 million households have a top-loading washer; or which 24 million of these are at least ten years

old. Combined, the inefficient washers use \$9 billion per year in energy and water costs.

In early April, the Department will launch its 2009 campaign at [www.energystar.gov/recycle](http://www.energystar.gov/recycle), adding freezers and clothes washer information this year, with the updated names of ENERGY STAR, Make a Cool Change, and ENERGY STAR, Make a Clean Change.

Consumers generally buy new appliances when their current units fail, but they also replace appliances as part of a kitchen remodel or to upgrade for aesthetic or performance reasons. Consumers may be motivated to select an ENERGY STAR model for a number of reasons, including: energy bill savings, financial incentives from the retailer or manufacturer, rebates from their local utility, and a State-level sales tax holiday. Some also choose ENERGY STAR models for their unique performance features, e.g., the larger capacity of ENERGY STAR clothes washers. In addition to steering consumers towards ENERGY STAR when buying a new appliance, DOE encourages consumers to get rid of old "second refrigerators" that are often found in garages and basements. A number of utilities run programs designed to remove old inefficient refrigerators from the grid by paying a small financial incentive to customers who agree to have their old unit picked up and recycled.

Sometimes non-financial factors can motivate decisions to replace with ENERGY STAR products. DOE and EPA regularly promote the energy and environmental benefits of using ENERGY STAR products. During OPERATION CHANGE OUT DOE also found that competitive peer pressure among the military bases helped spur investment in efficient lighting.

*Question 8.* Do you think we should try to use the power of the Energy Star brand and the awareness of it by consumers to help out in other areas that we want to see rapid development in, like demand response technologies, distributed storage devices, smart meters and other smart grid technologies?

*Answer.* The Department believes the ENERGY STAR brand can be used to promote certain new energy saving technologies. The brand can lead both established markets such as refrigerators or dishwashers, and new markets, such as highly efficient water heaters and solid state lighting. The Department has successfully launched water heater and solid state lighting initiatives and has seen market entry of qualified products. However, without the availability of the ENERGY STAR label, these products may have been stuck on manufacturers' drawing boards.

Expanding the program to cover demand response technologies, distributed storage devices may be able to help consumers and businesses make wise purchases. However, much work would need to be done before the Department could determine whether ENERGY STAR could assist in the marketing of these products, and, if so, what criteria should be used to qualify eligible products. Further, substantial changes in the market place for how energy is priced may be important for consumers to see benefits from some of these technologies. However, the potential contribution of these technologies to peak load reduction and energy savings is large enough to warrant a thorough evaluation of ENERGY STAR labeling.

*Question 9.* Please further describe the timeframe you will undertake to accomplish your recommendation to improve interagency coordination of the ENERGY STAR Program. Please describe how you will work with Program stakeholders to improve the success of the ENERGY STAR Program.

*Answer.* The Department of Energy (DOE) made a commitment at the March 19, 2009, Senate Energy and Natural Resources Committee hearing on the Appliance Standards Improvement Act of 2009, to resolve inter-agency coordination issues within 45 days. This process has already begun and is expected to culminate in mutual agreement.

ENERGY STAR has become the Nation's most visible and consistent symbol of energy and resource efficiency. ENERGY STAR can become an even more important tool to achieve energy efficiency goals in the future.

Energy efficiency technologies and programs are more critical than ever given the growth of peak electricity prices and variable natural gas prices and the challenge of addressing global climate change. The Department will explore working with its ENERGY STAR partners to promote efforts to (a) tap into the power of the private sector to deliver savings, (b) focus end-users on comprehensive, efficiency-based solutions, and (c) establish a mechanism by which all public sector policy actors with a legitimate interest in energy efficiency can focus their energies on overcoming barriers in the efficiency marketplace.

Whereas simple dollar savings and an environmental message have been the mainstays of ENERGY STAR consumer marketing, broadening the impact on the commercial and industrial sectors would require more specific rationales for improving energy performance. The Department believes that ENERGY STAR has the po-

tential to remain both a strong, consistent call to action for end-users as well as a strong “rationalizing force” in the efficiency marketplace.

*Question 10.* Please describe the administrative tools you have to improve the overall efficiency of appliances. What other tools do you believe are necessary to ensure that we continue to achieve greater success within this area?

Answer. There are several administrative tools available to greater deploy and use energy efficient technology. These options include Research and Development (R&D) programs, information programs, financial incentives, and regulatory programs.

R&D programs, besides developing new technology, also include the establishment of performance metrics (EER, SEER, U-Values, etc) and testing procedures to ensure standardization and to aid the deployment of new technology. Information deployment programs such as the labeling programs used by ENERGY STAR and the Federal Trade Commission’s EnergyGuide program help consumers understand energy performance and costs when shopping for a new product or home. The American Recovery and Reinvestment Act (Recovery Act) provides for financial incentives for American consumers to buy energy efficient ENERGY STAR products to replace old appliances. Per the Recovery Act, approximately \$300 million will be allocated to states to develop and administer the ENERGY STAR appliance rebate programs. Regulatory programs, such as DOE’s appliance energy conservation standards program, provide the strongest form of deployment which results in significant energy savings. Working with product manufacturers, designers, utilities, consumers, and other government agencies, this program area develops test procedures and sets minimum efficiency standards for residential appliances and commercial equipment. DOE does not believe it needs additional tools to ensure deployment of energy efficient technologies.

*Question 11.* One area of concern regarding the Standards Program has been the turn around time in ensuring that test procedures and energy conservation standards are monitored and updated as needed. Please describe how you will address these concerns.

A primary technique for accelerating development of test procedures is to work with industry standards organizations (e.g. ASHRAE, ISO, NEMA). The Department has the authority to adopt voluntary consensus proposals and will work closely with standards organizations to accelerate the modernization of existing test procedures.

Answer. The Department is taking steps to ensure it has adequate staff in order to meet the turn around times. In the last three years, the program has issued almost as many rulemakings as were issued in the 18 prior years. Additionally, 23 new rulemakings were initiated. The Department is proposing additional measures to help sustain this increased level of efforts. A top priority is updating test procedures that have not kept pace with technological developments. Also, activities related to test procedures, such as petitions for waivers and verification of compliance, need additional resources and attention.

*Question 12.* Within your testimony you reference that you are doing all that you can to examine and review operations to be even more efficient and productive—can you please further elaborate what these operations entail?

Answer. In its January 2006 report to Congress, the Department of Energy (DOE) released its multi-year schedule to eliminate backlogged appliance standards, while keeping up with the new requirements of the Energy Policy Act of 2005. Since then, the productivity of the appliance standards program has substantially increased. DOE has accomplished this by implementing rule-making process improvements, such as “technology grouping,” “cross-cutting strategy meetings,” “bundling,” and “valley filling.” Such management tools enable DOE to take advantage of economies of scale for rulemakings that are related or have certain common elements, and to maximize rulemaking capacity.

DOE’s analysis teams are grouped by technology. Each team specializes in one or more common area, such as lighting, heating, home appliances, etc. This enables individual teams to become experts within their specialty, and increases the overall resource and knowledge-base sharing to accelerate the productivity of the program.

Weekly cross-cutting strategy meetings have significantly enhanced the program’s productivity. Meeting attendees include all the appliance standards program staff, as well as representatives from DOE General Counsel and Policy and International Affairs. The meetings give all parties the opportunity to discuss overarching rule-making matters that affect all teams, and enable DOE project managers to more efficiently apply strategies across multiple rulemakings.

Bundling increases productivity by combining multiple products into a single standard or test procedure rulemaking. DOE considers bundling when there is significant overlap among manufacturers that produce a particular product, have mul-

multiple products in common, or where the technologies and issues are related. Further, a single trade association may cover multiple products that are identified in different rulemakings and, therefore, many of the same manufacturers are able to review the DOE analyses and attend a single public meeting. When multiple products are consolidated into a single rulemaking, one project manager can oversee all the related rulemaking activities and thereby leverage DOE resources.

At certain times, there can be a break in the analysis activity for a particular rulemaking. Breaks in analysis activities include internal/external technical reviews, mandatory concurrence by other DOE offices, and public comment periods. At such times, DOE uses valley filling as a management technique to refocus a rulemaking team's efforts to another related rulemaking. Essentially, valley filling combines a 36-month scheduled rulemaking with an overlapping rulemaking. Thus, the total time to complete the combined rulemaking activities is less than if the related activities were performed sequentially.

With respect to the acceleration of the schedule presented along with the January 2006 Report to Congress and the addition of subsequent requirements in EISA 2007, DOE is losing some of its valley-filling benefits while expanding output. In effect, by accelerating the schedule, DOE is paralleling work that had originally been intended to be interwoven. While paralleling work enables the program to accomplish more in the same time, it does require greater resources. DOE continues to seek out productivity enhancements and is continually evaluating its processes.

#### RESPONSE OF DAVID RODGERS TO QUESTION FROM SENATOR BARRASSO

*Question 1a.* Improving appliance energy efficiency is an important component of keeping consumers' energy bills down.

The Energy Star program has helped consumers make informed decisions regarding energy efficiency products.

It has also raised consumer awareness of the issue and encouraged manufacturers to improve efficiency.

There are, however, products made by small businesses in my state—innovative, energy-conserving products—that have faced challenges with the Energy Star program.

Are heating devices, like space heaters, currently included in the Energy Star Program?

Answer. Certain space heating products such as furnaces, boilers, electric air-source heat pumps, and geothermal heat pumps are labeled by the Environmental Protection Agency (EPA) under the ENERGY STAR program. However, space heaters (i.e., vented and unvented room heaters) are not labeled as ENERGY STAR qualified products. Space heaters have been evaluated by EPA for inclusion in the program but DOE understands that there are no plans to label them at this time.

*Question 1b.* Improving appliance energy efficiency is an important component of keeping consumers' energy bills down.

The Energy Star program has helped consumers make informed decisions regarding energy efficiency products.

It has also raised consumer awareness of the issue and encouraged manufacturers to improve efficiency.

There are, however, products made by small businesses in my state—innovative, energy-conserving products—that have faced challenges with the Energy Star program.

Do residential heating systems that independently generate 100 percent of their power from an attached solar or wind power source qualify for consideration? If not, why?

Answer. The Department of Energy (DOE) has included solar water heaters as part of the ENERGY STAR program effective January 1, 2009, although these systems do not generate 100 percent of their power needs from renewable energy due to the need for backup power. Additionally, DOE is currently evaluating photovoltaic technologies and small wind turbine technologies for inclusion into the ENERGY STAR program.