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TESTIMONY OF
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SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

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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 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.¹ 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.²

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%³ of carbon dioxide (CO₂) emissions from fossil fuel use in the country that is associated with commercial and residential buildings, in addition to the CO₂ 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

¹ 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.

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

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

Intergovernmental Panel on 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 bills⁴. And these benefits are on track to nearly double⁵ 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

⁴ ENERGY STAR Overview of 2007 Achievements (US EPA, 2008)

⁵ Ibid.

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 show⁶:

- 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.⁷

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

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

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

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.⁸

- *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 20 metropolitan areas.⁹ More than 5,000 builders have partnered with EPA,¹⁰ 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

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

⁹ *ibid.*

¹⁰ *ibid.*

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.¹¹ 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.¹²

- *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.¹³
- *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

¹¹ U.S. Census Bureau. American Community Survey (2006).

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

¹³ Ibid.

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.¹⁴ 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.¹⁵ Achieving the label is becoming increasingly important. For example, CoStar, the leading multiple listing service for U.S. Commercial real estate 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

¹⁴ ENERGY STAR Overview of 2008 Achievements (US EPA, 2009)

¹⁵ EPA Press Release, March 3, 2009.

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:¹⁶

- Establishing ENERGY STAR requirements for product categories using criteria that are employed consistently across the program

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

- 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.^{17,18} 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 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.¹⁹

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

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

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

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

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.