Statement

Ms. Kateri Callahan
President, Alliance to Save Energy

U.S. House of Representatives
Committee on Science, Space, and Technology

Wednesday, February 10, 2016

Thank you Mr. Chairman, Ranking Member Johnson, and members of the Science, Space, and Technology Committee for the opportunity to testify before you today about the history, importance, and current status of energy efficiency standards for equipment and vehicles. My name is Kateri Callahan and I serve as the President of the Alliance to Save Energy, a non-profit coalition of over 120 businesses, organizations, and institutions that is committed to advancing policies that will lead to greater energy productivity in our country and internationally.[1]

Alliance to Save Energy: Leadership and Mission

In 1977, U.S. Sens. Charles Percy (R-Ill.) and Hubert Humphrey (D-Minn.) founded the Alliance to Save Energy. I am honored to be a part of their legacy, which to this day emphasizes bipartisanship and finding workable solutions that will help our country meet our diverse energy challenges. We are proud to count U.S. Rep. Paul Tonko (D-N.Y.), a member of this Committee, as one of 14 honorary Congressional members of our Board of Directors. Our leadership also includes U.S. Reps. Michael Burgess (R-Texas), Steve Israel (D-N.Y.), Adam Kinzinger (R-Ill.), David McKinley (R-W.V.), and Peter Welch (D-Vt.). In addition to Members of Congress, our Board of Directors includes leaders from the diverse sectors of our energy economy, including manufacturing, utility, fuels, finance, and public interest.[2]

For nearly 40 years, the Alliance has engaged in advocacy, outreach, education, and program-management with the goal of developing and implementing policies that improve energy resource utilization in every sector or our economy as doing so reduces energy waste, thereby saving American businesses and consumers money while simultaneously improving the environment and enhancing energy security and reliability. We do not advocate for or against any fuel type. Rather, our goal is reflected in our motto—"Doing More. Using Less."—which applies across all energy resources, from coal to renewables.

In addition to our work at the U.S. national level, we also have worked in states and foreign countries and have successfully launched affiliated organizations within the U.S., Europe, Australia, and India.

[1] The complete roster of the Alliance's Associate members is provided as an attachment to this testimony.
[2] The complete roster of the Alliance's Board of Directors is provided as an attachment to this testimony.

Energy Efficiency as a Driver of Productivity and Economic Growth

Since the founding of the Alliance in the wake of the oil crises of the 1970s, the U.S. has made huge strides in driving energy efficiency throughout our economy with the aid of new technologies, significant public- and private-sector investment, and sound policies. In fact, since then, our country has doubled its energy productivity—here, defined as the gross domestic product (GDP) derived from each unit of energy consumed. The cumulative efficiency improvements since 1980 helped Americans save an estimated $800 billion in 2014.[3]

These savings are directly attributable to policies such as appliance and equipment standards, fuel economy standards, and building energy codes that have been enacted by Congress over the years and implemented by the U.S. Department of Energy (DOE) and other agencies. The Alliance has set an ambitious goal of once again doubling American energy productivity, this time by 2030. The challenges to attaining this goal in such a relatively short time are formidable, but the promised benefits from doing so are transformative and more than worth the effort. Meeting this goal will mean more economic output, more jobs, and more money in the pockets of homeowners and businesses.

An independent economic analysis of attaining the goal of doubling U.S. energy productivity found that doing so would "recycle" $327 billion in energy cost savings back into the economy—we would create 1.3 million new jobs, reduce imported energy to represent only 7% of total consumption, and reduce CO2 emissions to one-third below the level emitted in 2005.[4] The Alliance is committed to working to turn a range of strategies into actionable policies that accelerate the increase in energy productivity. We look forward to engaging with leaders in Congress to speed the deployment of these policies.

Why Standards Make Sense for America

Appliance and equipment efficiency standards have a decades-long track record of strong bipartisan support, and for good reasons. First, the monetary benefits from appliance and equipment standards are several: greater value from more functional devices, less waste, and lower utility bills for consumers. In fact, the efficiency standards put in place over the past 30 years, according to U.S. DOE "…are estimated to be over $950 billion through 2020, growing to over $1.7 trillion through 2030."[5] Second, the process that leads to standards is informed at every step by stakeholders representing diverse sectors so that negotiations reflect the respective interests of industry *and* consumers and will have positive effects on the environment.

---

[3] Testimony of Steven M. Nadel, Executive Director of the American Council for an Energy-Efficient Economy, U.S. Senate Energy and Natural Resources Committee, 114th Congress, First Session, "Hearing on Energy Efficiency Legislation," April 30, 2015, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=2e117f0a-3593-4d25-b25a-9ada97a5a0e5, last accessed February 7, 2016.

[4] "American Energy Productivity: The Economic, Environmental and Security Benefits of Unlocking Energy Efficiency," Rhodium Group, February 2013, http://www.energy2030.org/wp-content/uploads/rhg_americanenergyproductivity_0.pdf, last accessed February 7, 2016.

[5] "History and Impacts," U.S. Department of Energy Office of Energy Efficiency and Renewable Technology, http://energy.gov/eere/buildings/history-and-impacts, last accessed February 8, 2016.

Industry traditionally has been a major driver of standards. Manufacturers benefit from regulatory certainty and the rewards of bringing better appliances and equipment to market. And more competitive companies lead directly to the creation of American jobs. Efficiencies in one sector, no matter the magnitude, lead to a more efficient overall economy that better positions America to compete in the 21st Century.

For these important reasons, it is no surprise to the Alliance that the first equipment efficiency standards were signed into law by President Reagan and that the Congress has regularly updated and expanded this program with strong support from Members on both sides of the aisle.

Positive Effects of Timely Regulations on Innovation and Competiveness

The benefits of appliance and equipment standards go beyond energy and cost savings. Standards are an important policy tool for driving innovation in product development and commercialization as well as overall economic productivity. More efficient appliances and equipment do more while using less, and often at the same or a lower price. Some may suggest that standards lead to price increases over the long-term. But an independent analysis has shown, to use a common household example, that the real price of refrigerators decreased by about 35% between 1987 and 2010.[6] Similar results were found for clothes washers (real price decrease of about 45%) and dishwashers (real price decrease of about 30%).[7]

Trends of lower prices and effects on consumers have been studied many times and research routinely appears in journals or at conferences.[8] One study from 2009 finds "…that historic increases in efficiency over time, including those resulting from minimum efficiency standards, incur smaller price increases than were expected by [U.S. DOE] forecasts."[9] The researchers reach four conclusions: retail prices steadily fall while efficiency increases, prices are often overestimated at the outset, the incremental price to increase appliance efficiency is declining, and price mark-ups and economies of scale may have played a role. What these researches did *not* find was evidence that consumers lose when new or updated standards are published.

As prices have decreased, performance has increased. Refrigerators, now available in many more configurations, operate more quietly and maintain more constant temperatures than in the past. Clothes washers have larger capacities, use less detergent, and offer a wider range of cycles. And dishwashers offer a wider set of standard features while also offering water

[6] "Better Appliances: An Analysis of Performance, Features, and Price as Efficiency Has Improved," American Council for an Energy-Efficient Economy and Appliance Standards Awareness Project, May 20, 2013, http://aceee.org/research-report/a132, last accessed February 4, 2016. Summary also available at same Web address and http://www.appliance-standards.org/sites/default/files/Better_Appliances_Fact_Sheet_0.pdf, last accessed February 4, 2016.
[7] Ibid.
[8] "Publications," Lawrence Berkeley National Laboratory Energy Efficiency Studies Group, https://ees.lbl.gov/publications, last accessed February 5, 2016.
[9] "Retrospective Evaluation of Appliance Price Trends," Energy Policy, Volume 37, Issue 2, February 2009. Abstract and article available at http://www.sciencedirect.com/science/article/pii/S0301421508005193. Last accessed February 5, 2016.

savings.[10] Indeed, as the saying goes, "They don't make 'em like they used to." Rather, manufacturers produce more efficient appliances and equipment that offer more features—even at lower price points—saving money on energy bills for consumers and improving quality of life.

When we speak with Alliance Associates, regardless of sector, three words are mentioned with great frequency: "innovation," "productivity," and "competitiveness." These are attributes we should want to see in our modern economy. And standards drive all three. Energy efficiency does not result in making sacrifices or compromising on quality. Rather, as our motto states, it means doing more while consuming fewer resources. One Associate in particular always notes that improving efficiency in one area (such as in residential and commercial buildings) leads to better efficiency in all areas because of the systems effect. A more efficient appliance is a small but important contribution to a more efficient and productive economy. Innovation leads to efficiency and better devices and technologies. Standards reward innovation by assuring market leaders that early investments in more efficient product designs for appliances and equipment will be recovered in sales and market share.

Along with robust energy savings, appliance and equipment standards lead companies to invest in workers and create jobs. *In 2011, a report highlighted the fact that efficiency standards resulted in net job creation in all 50 states.* Many of our Associates have operations in the districts represented by members of this Committee and can attest to the quality and productivity of American workers. By 2020, appliance and equipment standards will be contributing 387,000 annual jobs to our economy.[11] Of course, these workers are also consumers, who will also have increased buying power for new appliances and equipment. That goes beyond the analysis cited here, but it still shows how efficiency in one area leads to greater efficiency across the economy.

Appliance, Equipment and Vehicle Standards: A History of Bipartisanship and Progress

Every president since Ronald Reagan deserves credit for the wide range of energy- and cost-saving appliance standards in place or under development today. Before being elected president, California Governor Reagan signed into law the legislation that led to the first state standards. Over time, the number and diversity of appliances and equipment subject to standards has grown. While standards have not usually been a partisan issue, it is worth noting that the most significant standards legislation has been signed into law by Republican presidents.

Legislation that aimed to improve the efficiency of household appliances was first enacted by Congress during the administration of President Gerald Ford. Later, the National Appliance Energy Conservation Act of 1987 was the first federal law that established standards. This legislation was approved 89-6—an overwhelmingly bipartisan margin—by the U.S. Senate and then passed by voice vote in the U.S. House of Representatives before it was signed into law by President Reagan.

[10] "Better Appliances," last accessed February 4, 2016.
[11] "Appliance and Equipment Efficiency Standards: A Moneymaker and Job Creator," American Council for an Energy-Efficient Economy and Appliance Standards Awareness Project, January 26, 2011, http://aceee.org/research-report/a111, last accessed on February 4, 2016.

President George H.W. Bush signed the Energy Policy Act of 1992 into law after overwhelming votes in the U.S. House of Representatives (381-37) and U.S. Senate (93-3); he also signed into law the Clean Air Act Amendments of 1990, which passed both chambers of Congress without objection, and which put in place new emission standards for vehicles.

Later, Congress sent two bills—the Energy Policy Act of 2005 and the Energy Independence and Security Act (EISA) of 2007—that enjoyed broad bipartisan support to President George W. Bush during his second term. Each of these landmark acts of Congress is rightly considered a legacy-defining achievement. And each has led to gains in energy efficiency from expanded and updated appliance, equipment and vehicle efficiency standards.

Today, according to U.S. DOE, appliance and equipment standards apply to "…more than 60 products, representing about 90% of home energy use, 60% of commercial building energy use, and approximately 30% of industrial energy use."[12] These standards represent the bipartisan policy efforts of nearly 30 years. Today, compared with 1987, our daily lives at home and at work are considerably more dependent on devices and other machines that require electricity to operate. Congress has recognized this trend in modernization and acted accordingly. As technology innovation brings new consumer products to market, it stands to reason that these devices, like ones that came before, warrant efficiency standards to make sure that consumers don't waste energy and money on relatively new products like flat-screen televisions, cell phone chargers, and other power supplies.

The Role of Congress and the U.S. Department of Energy in Setting Efficiency Standards

The authority from Congress to issue standards dates back, in many cases, to 1987 or 1992. The process leading to a certain standard often begins in one administration, continues through another, and ends with an effective date even later. For example, Congress established a standard for dehumidifiers in 2005, which was later updated in 2007. The 2007 standard took effect in 2012. Another update is due in 2016 and will affect units beginning in 2019. Similar timeframes apply to standards for other common residential appliances and equipment such as ceiling fans, furnaces, ranges and ovens, and water heaters. Congress—not U.S. DOE—mandates the timelines and deadlines, which are not tied or aligned to a given president's time in office.

Standards take many years to develop and fully implement because of the intensive and extensive stakeholder-involvement process managed by U.S. DOE. Another determining factor in the timeline of a given standard is the required testing protocol. Information on the status of standards is shared in meetings, presentations, and in the Federal Register. Several organizations such as the Alliance issue public statements and reports on a near-constant basis to track progress and count savings.

[12] "Saving Energy and Money with Appliance and Equipment Standards in the United States," U.S. Department of Energy Office of Energy Efficiency and Renewable Energy, July 2015, http://energy.gov/sites/prod/files/2016/01/f28/Appliance%20Standards%20Fact%20Sheet%201%2026%202016.pdf, last accessed February 6, 2016.

The U.S. Department of Energy (U.S.DOE) is mandated by Congress to establish and update appliance and equipment standards regularly. In 2006, U.S. DOE stated that "…[a]ppliance and equipment standards are clearly one of the Federal Government's most effective energy- saving programs…and is having a major positive impact."[13] But, the program had by then grown unwieldy and priority was given to standards with greater estimated impacts, which contributed to delays in the rulemaking process for other products.

In response to litigation (and a consent decree) along with new mandates from Congress, in 2008, U.S. DOE developed and reported on a plan that required new or updated standards to be put in place by June 2011. U.S. DOE worked diligently in the intervening years and the number of standards being developed at once remained a key challenge.[14] U.S. DOE met its June 2011 deadlines as required by the consent decree.

U.S. DOE's legacy with respect to appliance and equipment standards during the Obama Administration will be one of tremendous savings and positive environmental effects. Since 2009, U.S. DOE has issued "…40 new or updated appliance standards across more than 45 products…."[15] Just these standards will generate savings worth $447 billion.[16] Add to this the enormous environmental and societal benefits of not consuming nearly 4.5 trillion kilowatt-hours and the case for appliance and equipment standards, in our opinion, is clear. But again, and as stated above, U.S. DOE under the Obama Administration simply is doing the job it has been assigned by Congress within the time frames that Congress has established.

Industry and Stakeholder Engagement

When the first standards were established, manufactures contended with widely varying state requirements which complicated business. With the advent of federal standards, U.S. DOE, energy companies, and interest groups now are able to work toward a single, nation-wide regulation that balances interests, recognizes economic constraints, and mitigates uncertainty. The process leading to a standard is understood by interested parties and conducted as public policy with the average consumer's interests in mind.

One particular standard that has gotten an extreme amount of attention and remains controversial—notwithstanding how wildly successful it has been in the marketplace—required the phase-out of inefficient light bulbs. The call for a national light bulb standard was made by industry, working with the Alliance and other stakeholders in a "Lighting Efficiency Coalition." The standard was developed through negotiations among industry, the efficiency community, and Members of Congress, and eventually was codified in the Energy Independence and Security

[13] "Energy Conservation Standards Activities," U.S. Department of Energy, January 2006, http://energy.gov/sites/prod/files/2013/12/f5/congressional_report_013106.pdf, last accessed February 4, 2016.
[14] "Implementation Report: Energy Conservation Standards Activities," U.S. Department of Energy, August 2008, http://energy.gov/sites/prod/files/2013/12/f5/congressional_report_0808.pdf, last accessed February 4, 2016.
[15] Ibid.
[16] "Q&A: Appliance Standards Questions and Answers," Appliance Standards Assistance Project, January 2016, http://www.appliance-standards.org/sites/default/files/Progress_toward_3_billion_CO2_reduction_Jan%202016.pdf, last accessed February 4, 2016. Savings equal to net present value of savings through 2045 discounted to 2014 (2012$).

Act (EISA) of 2007. During a hearing before the U.S. Senate Energy and Natural Resources Committee, U.S. Rep. Fred Upton (R-Mich.) described how the light bulb standard came to be:

> …[The proposal to phase out 100-watt incandescent light bulbs] came from the industry, and because they're worried, I think, that some different, maybe fly-by-night group, that will come in, ultimately, and have a cheaper light bulb…on the shelf at the store. But in fact, the cost to the consumer will be…15 or 20 times more by buying that obsolete incandescent bulb versus the new standard that we're going to see. So they were the ones that came up with that idea and we wrote that right into the amendment, as it passed in the [U.S. House] Energy [and Commerce] Committee. I think this legislation that we've done is balanced, the preemption work was a great credit, kudos to [U.S. Rep. Jane Harmon (D-Calif.)]…, making sure it was properly constructed, all sides, in essence coming to the agreement…. The bottom line is this, by improving the standard, which is what we're doing, we will save American consumers 65 billion kilowatts of energy, just because of the light bulb changes, when this comes into [effect] beginning in 2012, 2013. Sixty-five billion kilowatts is the equivalent of 80 coal-fired electricity plants. That's pretty significant. This is more than just one light bulb at a time, it is in fact, a shining amendment in terms of what we can do together, House and Senate, Republicans and Democrats, environmentalists and industry, to make sure what we're getting the biggest bang for our buck.[17]

I quoted Rep. Upton at length because I could not convey his sentiments of bipartisanship and industry-stakeholder engagement any better. As the present chairman of the U.S. House of Representatives Energy and Commerce Committee, he should also be recognized as an authority on the subject of standards. The Alliance was proud to be a part of the efforts he and Rep. Harmon led to a successful conclusion.

Another example of a successful standard-development process happens to be very recent and very significant. In December 2015, U.S. DOE issued standards for commercial rooftop air conditioners, furnaces, and heat pumps, which will result in more savings than any other standard to date. This process, which began with legislation passed in 1992, involved—and was praised in press reports by—manufacturers, trade groups, energy efficiency advocates, and environmental and sustainability organizations.

To develop the standards announced in December, U.S. DOE convened 17 stakeholders including the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), which represents manufacturers of air conditioning, heating, commercial refrigeration, and water heating equipment. In a joint press release touting the standard, issued with other key stakeholders, the President and Chief Executive Officer of AHRI wrote: "The consensus agreement provides our members with certainty while providing benefits for consumers and businesses."[18] These standards are proof that, even when dealing with the biggest impacts, regulations in this context can work and result in benefits to all stakeholders.

---

[17] Transcript of U.S. Senate Committee on Energy and Natural Resources, 110th Congress, First Session, "To Receive Testimony on the Status of Energy Efficient Lighting Technologies and on S. 2017, the Energy Efficient Lighting for a Brighter Tomorrow Act," September 12, 2007, https://www.gpo.gov/fdsys/pkg/CHRG-110shrg39385/pdf/CHRG-110shrg39385.pdf, last accessed February 6, 2016.

[18] "Manufacturers, Efficiency Groups Praise Largest Energy-Saving Standards Ever Issued," Appliance Standards Awareness Project, Air-Conditioning, Heating, and Refrigeration Institute, American Council for an Energy-Efficient Economy, and Natural Resources Defense Council, December 18, 2015, http://www.ahrinet.org/site/A__1129/295/Modules/AHRI/Articles, last accessed February 5, 2016.

Constructive Suggestions for Improving Process

While the current standard development process is leading to positive outcomes, there remain ways to make improvements. For instance, many stakeholders would like U.S. DOE to find ways to increase transparency with respect to the data and models it uses to make performance and energy-savings calculations. More transparency could help stakeholders make more informed contributions to the standards process and, perhaps more importantly, help prevent situations that lead to litigation and delays. Simply put, good process pays dividends beyond energy savings.

Congress disrupts the established standards process each time it adopts *ad hoc* policy riders to appropriations bills. These riders, which are generally worded to prevent U.S. DOE from expending funds to implement standards for specific appliances and equipment, contradict directives from past statutes. Worse, from the perspective of manufacturers, riders introduce uncertainty and risk into a process that is designed to consider their needs. Riders only lead to longer delays that are costly to consumers.

To take the most famous case of inefficient light bulbs, which were phased out in EISA, Congress has repeatedly enacted a rider to prevent action by U.S. DOE to enforce the very standard that Congress itself enacted! Paying little heed to Congress's contradictory directive to U.S. DOE, most manufacturers simply went about their business and provided efficient, aesthetically attractive, and affordable light bulbs. If anyone benefited financially from later restrictions on U.S. DOE enforcement of the standard, it was unscrupulous importers and resellers who could flout the requirements with impunity. Today, thanks to the original impetus of EISA, consumers have better lighting choices than ever before, including high-efficiency halogen-incandescent bulbs, compact fluorescent bulbs (CFLs), and the latest innovation: solid-state light-emitting diode (LED) bulbs. LED bulbs are now selling at rapidly shrinking prices and steadily increasing their market share. We respectfully urge Congress to review the light bulb case study and to resist attempts to add regressive or restrictive standards language to future appropriations bills.

Vehicle Emissions Standards

In addition to appliance and equipment standards, the U.S. Department of Transportation's Corporate Average Fuel Economy (CAFE) standards program is the other main federal policy driver of energy savings. Combined, in 2014 these two policies accounted for savings (12.6 quads) that were equivalent to more than 10% of our country's annual energy consumption (across all sectors).[19] Much like the history of appliance and equipment standards, CAFE has largely enjoyed bipartisan support and has evolved across the administrations of presidents of both parties.

[19] "Which Energy Efficiency Policies Saved the Most Last Year?" American Council for an Energy-Efficient Economy, July 28, 2015, http://aceee.org/blog/2015/07/which-energy-efficiency-policies, last accessed on February 4, 2016. "Energy Efficiency in the United States: 35 Years and Counting," American Council for an Energy-Efficient Economy, June 30, 2015, http://aceee.org/energy-efficiency-united-states-35-years-and, last accessed on February 4, 2016.

CAFE standards date back to the Energy Policy and Conservation Act of 1975, which laid the groundwork for energy policy at a time when oil shocks caused our country to think more carefully about resources. The first CAFE standard was 18 miles-per-gallon in 1978; by 2025 it is scheduled to be 54.5. Consumers who purchase a new vehicle in model year 2025 will save over $8,000 in fuel costs during its useful life.

CAFE standards are required to represent the maximum feasible levels of fuel economy for each vehicle fleet in a given year. To achieve this, the involvement of and input from manufacturers and stakeholders is critical. The last major standards were announced in 2011 and enjoyed the support of 13 manufacturers, which combined to produce nine of every 10 vehicles sold, including the Big 3: General Motors, Ford, and Chrysler.

One key reason for the success of CAFE standards is the flexibility built into the structure of the regulations. Because industry worked with policy makers to establish the regulations, the standards are designed to help manufacturers manage consumer demand, mitigate uncertainty and risk, and make optimal business decisions. For example, EISA included provisions for an emission credit trading mechanism to promote early action on the part of manufacturers. These credits can be banked for up to five years, applied to future obligations, and sold to other manufactures in non-compliance.[20]

Additionally, EPA has implemented several measures aimed at reducing the compliance cost for smaller and intermediate-volume manufacturers. These measures include additional lead-time flexibility and a process to petition for alternative carbon dioxide standards. CAFE regulations also provide credit for non-engine-related improvements like more efficient air conditioning and off-cycle efficiencies such as start-stop controls and active aerodynamics. EPA also offers specific incentives for electric, plug-in hybrid, fuel cell, flexible fuel, and compressed natural gas vehicles.[21]

For over 40 years, dating back to the 94th Congress and President Ford, CAFE standards have dramatically reduced petroleum demand and consumption. This program has led to a better environment and increased energy security. Along the way, manufactures have been encouraged to innovate because of the flexibility allowed by regulations. As CAFE standards have risen, vehicles have become safer, quieter, and more reliable. And consumers and businesses have saved hundreds of billions on fuel costs while still moving themselves and their goods at will across the country.

Conclusion

As stated at the outset, I very much appreciate the opportunity to testify before this august Committee. I urge the members of the Committee to continue the long-standing, bipartisan tradition of support for appliance, equipment, and vehicle efficiency standards that have served our country and our economy so well over the past three-plus decades.

---

[20] "EPA and NHTSA Propose to Extend the National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks," U.S. Environmental Protection Agency Office of Transportation and Air Quality, November 2011, http://www3.epa.gov/otaq/climate/documents/420f11038.pdf, last accessed February 6, 2016.
[21] Ibid.

Thanks to the leadership and visionary work of Congress, American businesses and consumers are wasting less energy and saving money on utility bills and at the pump; and our economy is producing twice as much GDP from each unit of energy consumed then it did in the 1980s. We need to continue this forward progress and double our energy productivity yet again if we are to continue to be the global economic leader. The technologies to do so are available today; what we need is a strong public policy infrastructure. Energy efficiency is an economic driver and the best means of delivering it into the economy is through federal appliance, equipment and vehicle standards.