



**Testimony of David J. Friedman
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**Before the U.S. House of Representatives
Committee on Energy and Commerce
Energy Subcommittee**

Hearing on:

**“Wasted Energy: DOE’s Inaction on Efficiency Standards and
Its Impact on Consumers and the Climate”**

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2123 Rayburn House Office Building**

Introduction

Chairman Rush, Ranking Member Upton, and Committee members, thank you for inviting Consumer Reports to provide testimony at this hearing. I am David Friedman and I am the Vice President of Advocacy for Consumer Reports. I formerly served as Principal Deputy Assistant Secretary (2015-2016) and Acting Assistant Secretary (2016 - January 2017) for the Department of Energy's Office of Energy Efficiency and Renewable Energy. During my time as Principal Deputy and Acting Assistant Secretary, I was engaged with the department's work on appliance and equipment standards.

Consumer Reports is an independent, nonprofit member organization that works side by side with consumers for truth, transparency, and fairness in the marketplace. We use our rigorous research, consumer insights, journalism, and policy expertise to inform purchase decisions, improve the products and services that businesses deliver, and drive regulatory and fair competitive practices. Consumer Reports has 63 state of the art labs in our consumer product and service testing center, in Westchester, New York, which is the largest nonprofit educational and consumer product testing center in the world. Consumer Reports spends \$27 million on testing, rating and reviewing products.

We buy and test thousands of products every year, including those subject to Department of Energy standards such as dishwashers, clothes washers and dryers, microwaves, stove ranges, air conditioners, and refrigerators and then generate reviews and ratings to help consumers, support our investigative journalism and trusted consumer guidance, and advocate for consumer-friendly marketplace practices. We used to test lightbulbs, but there was so much improvement in the lighting market with the onset of widely available and affordable LEDs, that it was no longer feasible or cost-effective to test them over their lengthy lifetime.

The comfort, safety and affordability of Americans' homes play a large role in their quality of life. Consumer Reports recognizes the importance of home appliances in making daily lives better and easier, which is why providing consumers honest and data-driven information on these products during their purchasing decisions is a large part of our testing and rating program. As discussed below, appliance and equipment standards have been instrumental in cutting Americans' energy use and energy bills, even as home appliances have expanded their features and improved their performance.

The Appliance and Equipment Standards Program run by the DOE has been highly successful and saved billions of dollars for American consumers and businesses

A. Appliance and equipment standards save Americans money.

Home energy and water use are significant expenses, especially for low-income households. Average annual household home energy (electricity, natural gas, and home heating oil) and water spending totaled \$2,481 in 2017.¹ Cooling was the biggest energy draw,² with water heating and lighting being the next most significant costs, followed by refrigeration and space heating.³

The burden of energy costs falls heaviest on low-income households. When compared to the average, Americans in the lowest quintile spend four times as much of their income on electricity and three times as much on electricity, water, and natural gas combined.⁴ And, according to the most recent results from EIA's *Residential Energy Consumption Survey* (RECS) "nearly one-third of U.S. households (31%) reported facing a challenge in paying energy bills or sustaining adequate heating and cooling in their homes in 2015, about one in five households reported reducing or forgoing necessities such as food and medicine to pay an energy bill, and 14% reported receiving a disconnection notice for energy service."⁵

The 60+ products covered by appliance and equipment standards represent about 90% of home energy use, and as a result of these standards, American consumers saved \$63 billion on their utility bills in 2015, and by 2030, cumulative utility bill savings from all standards in effect since 1987 will reach nearly \$2 trillion, according to DOE's analysis.⁶ This means that a typical household saves about \$321 per year off their energy bills as a result of standards.⁷ Since 1990, additional efficiency gains in household appliances include the following: 1) new clothes washers

¹ Source: Consumer Expenditure Survey, U.S. Bureau of Labor Statistics, (September, 2018) at <https://www.bls.gov/cex/2017/standard/multiyr.pdf>. Energy totaled \$1,898, while water was \$583.

² U.S. EIA's *Annual Energy Outlook 2018*, Table 4, (February, 2018) at https://www.eia.gov/energyexplained/index.php?page=electricity_use.

³ U.S. EIA's *Annual Energy Outlook 2018*, Table 4, (February, 2018) at https://www.eia.gov/energyexplained/index.php?page=electricity_use.

⁴ Americans in the lowest quintile spend 8.4% of their income on electricity and 13.1% on electricity, water and natural gas combined. Source: Consumer Expenditure Survey, U.S. Bureau of Labor Statistics (September, 2018) at <https://www.bls.gov/cex/tables.htm#annual>.

⁵ U.S. EIA's *Residential Energy Consumption Survey 2015*, Chip Berry, Carolyn Hronis, Maggie Woodward [https://www.eia.gov/todayinenergy/detail.php?id=37072&src=%E2%80%B9%20Consumption%20%20%20%20Residential%20Energy%20Consumption%20Survey%20\(RECS\)-b2](https://www.eia.gov/todayinenergy/detail.php?id=37072&src=%E2%80%B9%20Consumption%20%20%20%20Residential%20Energy%20Consumption%20Survey%20(RECS)-b2)

⁶ Source: Department of Energy, "Appliance and Equipment Standards Program" (Jan, 2017) <https://www.energy.gov/eere/buildings/appliance-and-equipment-standards-program>

⁷ Department of Energy, "Saving Energy and Money with Appliance and Equipment Standards in the United States" https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917_0.pdf (January 2017)

use 70% less energy, 2) new dishwashers use more than 40% less energy, new air conditioners use about 50% less energy, and new furnaces use about 10% less energy.⁸ As Americans replace their appliances with newer models, they can expect to save over \$529 annually by 2030.”⁹ And lighting efficiency is already saving \$5 billion annually, and is projected to save a cumulative total of \$665 billion by 2050.¹⁰

When examining the full range of benefits, including consumer, commercial, and industrial savings, independent analyses confirm the tremendous past and future savings of the standards in the range of trillions of dollars. A Lawrence Berkeley National Lab study found: “The estimated cumulative energy savings over the period 1990-2090 amount to 216.9 quads. Accounting for the increased upfront costs of more-efficient products and the operating cost (energy and water) savings over the products’ lifetime, the standards have a **cumulative net present value (NPV) of consumer benefit of between \$1,627 billion and \$1,887 billion**, using 7 percent and 3 percent discount rates, respectively.”¹¹ The same study found that the energy savings in 2015 attributable to efficiency standards accounted for a 5% reduction in total US energy consumption.¹² The Consumer Federation of America calculated, “Combining benefits of past and present standards, we see over **\$1.5 trillion in benefits with less than \$300 million in costs**, for a benefit cost ratio of about 6-to-1.”¹³ “Future benefits that could be achieved under the current law and administrative approach have been estimated to be over \$720 billion in consumer pocketbook savings at a cost of less than \$240 billion. We add to this indirect, macroeconomic benefits of almost \$500 billion, for a total of over \$1.2 trillion and a benefit-cost ratio of 5-to-1.”¹⁴

⁸ Department of Energy, “Saving Energy and Money with Appliance and Equipment Standards in the United States”

https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917_0.pdf (January 2017)

⁹ Department of Energy, “Saving Energy and Money with Appliance and Equipment Standards in the United States”

https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917_0.pdf (January 2017)

¹⁰ ACEEE, “US Light Bulb Standards Save Billions for Consumers But Manufacturers Seek a Rollback”

<https://aceee.org/sites/default/files/bulb-standards-0803-2.pdf> (July, 2018)

¹¹ Stephen Meyers, Alison Williams, Peter Chan, and Sarah Price of the Environmental Energy Technologies Division of Berkeley Lab, “Energy and Economic Impacts of U.S. Federal Energy and Water Conservation Standards Adopted From 1987 Through 2015” (March, 2016).

<https://eta.lbl.gov/sites/all/files/publications/lbni-1004328.pdf>

¹² Stephen Meyers, Alison Williams, Peter Chan, and Sarah Price of the Environmental Energy Technologies Division of Berkeley Lab, “Energy and Economic Impacts of U.S. Federal Energy and Water Conservation Standards Adopted From 1987 Through 2015” (March, 2016).

<https://eta.lbl.gov/sites/all/files/publications/lbni-1004328.pdf>

¹³ Cooper, Mark, Consumer Federation of America, “Pocketbook savings, macroeconomic growth and other public benefits of Energy Efficiency Appliance Standards” (July, 2017)

<https://consumerfed.org/wp-content/uploads/2017/07/benefits-of-energy-efficiency-appliance-standards.pdf>

¹⁴ Cooper, Mark, Consumer Federation of America, “Pocketbook savings, macroeconomic growth and other public benefits of Energy Efficiency Appliance Standards” (July, 2017)

<https://consumerfed.org/wp-content/uploads/2017/07/benefits-of-energy-efficiency-appliance-standards.pdf>.

B. Efficiency and performance have both improved for covered products.

Importantly, the energy savings have occurred in tandem with improvements to the features and performance of appliances. By statute, DOE is expressly required to consider the “any lessening of the utility or the performance of the covered products likely to result from the imposition of the standard”¹⁵ when it is considering amending a standard so that the new standard is “technologically feasible and economically justified.”¹⁶

Some standout examples of improvement include refrigerators, dishwashers and clothes washers. A typical new refrigerator uses one-quarter the energy than in 1973, while offering 20% more storage capacity and being available at half the retail cost.¹⁷ An ASAP and ACEEE study used Consumer Reports’ ratings to conduct an analysis of performance and features and found that product performance stayed the same or improved as appliance and equipment standards tightened.¹⁸ For example, refrigerators’ temperature performance improved and noise levels decreased, while features and average volumes increased.¹⁹ Similarly, dishwasher performance stayed steady while energy and water use decreased substantially and more features were added (delayed start, soil sensors, automatic bulk detergent dispensers).²⁰ Clothes washer performance has also improved, showing better washing performance, becoming gentler on clothes, and having higher capacity.²¹ In fact, Consumer Reports had to increase difficulty of washing performance tests in 2011 to differentiate products.²²

C. Affordability has been maintained or improved as standards improved.

The same ASAP/ACEEE study found that, between 1987 and 2010, the real average retail prices for refrigerators decreased by 35% while energy use decreased by over 50% and average volume

¹⁵ 42 U.S. Code § 6295 (o)(2)(B)(IV).

¹⁶ 42 U.S. Code § 6295 (o)(2)(A) and (B).

¹⁷ Department of Energy, “Saving Energy and Money with Appliance and Equipment Standards in the United States,” at https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917_0.pdf (January 2017).

¹⁸ ACEEE, “Better Appliances: An analysis of performance, features, and price as efficiency has improved” (Page vii) (May 2013) <https://aceee.org/sites/default/files/publications/researchreports/a132.pdf>.

¹⁹ ACEEE, (Page vii) “Better Appliances: An analysis of performance, features, and price as efficiency has improved” (May 2013) <https://aceee.org/sites/default/files/publications/researchreports/a132.pdf>.

²⁰ ACEEE, (Pages 33-36) “Better Appliances: An analysis of performance, features, and price as efficiency has improved” (May 2013) at <https://aceee.org/sites/default/files/publications/researchreports/a132.pdf>.

²¹ ACEEE, (Page 2) “Better Appliances: An analysis of performance, features, and price as efficiency has improved” (May 2013) <https://aceee.org/sites/default/files/publications/researchreports/a132.pdf>

²² ACEEE, “Better Appliances: An analysis of performance, features, and price as efficiency has improved” (Page 22) (May 2013) <https://aceee.org/sites/default/files/publications/researchreports/a132.pdf>

increased by 13%.²³ Over the same period, clothes washers saw average retail price decline by 45% while energy use decreased 75% and average capacity increased by 33%.²⁴ Similarly, dishwasher prices fell by 30% while energy use decreased 50%.²⁵ These trends reinforce that in setting progressively better standards, DOE has been doing its job in promulgating “technologically feasible and economically justifiable” standards that conserve energy.²⁶ At the same time, DOE’s regulations for the efficiency program explicitly requires that impacts on low-income Americans be considered as part of the agency’s standard-setting process,²⁷ ensuring that, in cases where there might be issues, they are proactively addressed in the standard itself.

In an even more impressive example, the light bulb market has transformed, thanks in part to efficiency standards and DOE investment in R&D. A classic 60W equivalent LED bulb costs less than \$1.75 individually and less than \$1.25 in an 8-pack²⁸ and can last 25 times longer than an equivalent incandescent.²⁹ A 60W incandescent would have to cost \$0.07 or less just to compete on first cost,³⁰ and would have to fall to less than \$0.02 to compete on operating cost because it would still use at least four times the energy.³¹ As a result, the LED bulb will deliver significant savings over its life. In fact, DOE has predicted, “Widespread use of LED lighting has the greatest potential impact on energy savings in the United States. By 2027, widespread use of LEDs could save about 348 TWh (compared to no LED use) of electricity: This is the equivalent annual electrical output of 44 large electric power plants (1000 megawatts each), and a total savings of more than \$30 billion at today's electricity prices.”³²

²³ ACEEE, “Better Appliances: An analysis of performance, features, and price as efficiency has improved” (Page 16) (May 2013) <https://aceee.org/sites/default/files/publications/researchreports/a132.pdf>

²⁴ ACEEE, “Better Appliances: An analysis of performance, features, and price as efficiency has improved” (Page 28) (May 2013) <https://aceee.org/sites/default/files/publications/researchreports/a132.pdf>

²⁵ ACEEE, “Better Appliances: An analysis of performance, features, and price as efficiency has improved” (Page 37) (May 2013) <https://aceee.org/sites/default/files/publications/researchreports/a132.pdf>

²⁶ 42 U.S. Code § 6295 (o)(2)(A).

²⁷ 10 C.F.R. § 430 Appendix A Subpart C (5)(e)(3)(i)(G) “If the Department determines that a candidate standard level will have significant adverse impacts on a significant subgroup of consumers (including low-income consumers), that standard level will be presumed not to be economically justified unless the Department determines that specifically identified expected benefits of the standard would outweigh this and any other expected adverse effects.”

²⁸The Home Depot online store, at <https://www.homedepot.com/p/EcoSmart-60-Watt-Equivalent-A19-Non-Dimmable-LED-Light-Bulb-Soft-White-B7A19A60WUL11/303574508> and <https://www.homedepot.com/p/EcoSmart-60-Watt-Equivalent-A19-Non-Dimmable-LED-Light-Bulb-Soft-White-8-Pack-B7A19A60WUL18/303574541>.

²⁹ Department of Energy, Office of Energy Efficiency & Renewable Energy, “LED Lighting” <https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting>.

³⁰ A quick internet search for information on incandescents available today indicates they cost more than ten times that 7 cent per bulb value, even in bulk.

³¹ Department of Energy, Office of Energy Efficiency & Renewable Energy, “LED Lighting” <https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting>

³² Department of Energy, Office of Energy Efficiency & Renewable Energy, “LED Lighting” <https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting>

D. Americans continue to support strong appliance and equipment standards.

A Consumer Federation of America (CFA) study from last October found that 71% of Americans “support the idea that the government should set and update energy efficiency standards for appliances” and 95% agree that it is beneficial for appliances to be more efficient.³³ And Americans recognize that a reasonable payback period to account for higher upfront costs is still a good deal: “When asked if they would support appliance efficiency improvements if they increased appliance prices, 74 percent said they would if the payback period was three years.”³⁴

The effectiveness of standards depends on empowering DOE staff to run a robust program

A. The appliance efficiency program faced a difficult start, but then delivered for Americans.

In 1975, Congress passed the Energy Policy and Conservation Act (EPCA), which required the Department of Energy to set mandatory standards for energy use for major household appliances.³⁵ However, it wasn't until 1987 that efficiency improvements got underway, due to the administration at the time refusing to put standards in place under the erroneous claim that the savings weren't “significant.”³⁶ A federal lawsuit (for which Consumer Reports was a joint petitioner) finally resulted in DOE action in setting new efficiency standards for appliances.³⁷ As mentioned above, the standards put in place since 1987 are netting Americans in the trillion dollar range of savings, an amount reasonable observers would certainly consider “significant.”

³³ Consumer Federation of America, “Consumers Support Appliance Efficiency But Trump Administration Delays and Seeks to Weaken Standards” at https://consumerfed.org/press_release/consumers-support-appliance-efficiency-but-trump-administration-delays-and-seeks-to-weaken-standards/ (October 5, 2018).

³⁴ Consumer Federation of America, “Consumers Support Appliance Efficiency But Trump Administration Delays and Seeks to Weaken Standards” (October 5, 2018) https://consumerfed.org/press_release/consumers-support-appliance-efficiency-but-trump-administration-delays-and-seeks-to-weaken-standards/.

³⁵ EPCA Sec. 325(a)(1)-(2), Pub.L. No. 94-163, 89 Stat. 871, 923-24 (1975).

³⁶ NRDC v. Herrington, 768 F.2d 1355 (D.C. Cir. 1985) at 1369.

³⁷ See NRDC v. Herrington, 768 F.2d 1355 (D.C. Cir. 1985).

B. Over the last two years, DOE has again delayed statutorily required action.

Federal law requires that the standards be assessed for amendment every 6 years.³⁸ When DOE falls behind on statutory deadlines to evaluate, and as needed update, the standards, it not only violates the law, it creates a backlog of work for future administrations and can waste years of savings and delay distribution of efficient technologies in the market.

Unfortunately, for the last two years, DOE has fallen behind on nearly twenty decision points and if it continues to stall, will increase the backlog by a dozen more. This uncertainty, delay and lack of clear and public decision-making also hurts the appliance and equipment industries as they plan their product cycles and seek to differentiate those products in the marketplace.³⁹ By failing to open a public docket, collect data, properly and transparently weigh all the different factors that must be considered, and then reach a data-driven and fully justified decision, consumers and manufacturers are left spending more on energy and less on innovation and a more competitive market. It is neither permissible nor desirable for DOE to do nothing on appliance and equipment standards that were promulgated more than 6 years ago. Further, there remains a gaping hole in existing standards, as more and more home electricity use now comes from household items that have no standards.

C. DOE's recent rollback proposals undermine the benefits and intent of the program.

Making matters worse for consumers, DOE is now working to roll back the efficiency of some lighting products and put new barriers in front of the agency's ability to set standards for a variety of household items through its recently issued lighting definition rollback and "process rule" proposals just a few days before this hearing was originally scheduled to take place. We provide our initial reactions below, but note that more time will be required to evaluate the full implications.

When the Energy Independence and Security Act of 2007 (EISA) amended EPCA to expand coverage to include general service lamps (GSLs), it opened up new opportunities to tap into American innovation to reduce energy use. Moving to a wider range of efficient lighting products has transformed the lighting market, moving away from the incandescent bulb, which had seen

³⁸ 42 U.S. Code § 6295 (m)(1)(A) and (B): "(m)Amendment of standards: (1) In general: Not later than 6 years after issuance of any final rule establishing or amending a standard, as required for a product under this part, the Secretary shall publish—(A) a notice of the determination of the Secretary that standards for the product do not need to be amended, based on the criteria established under subsection (n)(2); or (B) a notice of proposed rulemaking including new proposed standards based on the criteria established under subsection (o) and the procedures established under subsection (p)."

³⁹ Kern, Rebecca, "Efficiency Standard Delays Pose Challenges for Appliance Makers," Bloomberg News at <https://www.bna.com/efficiency-standard-delays-n57982088426/> (February 7, 2018).

little efficiency gain or other changes in one hundred years to the incredibly flexible light emitting diode (LED), which use less than a quarter of the energy, lasts ten times longer and has opened up whole new ways of using lighting. The efficiency standards promulgated in 2012 for A-type bulbs can save Americans \$323 billion by 2050, and the efficiency standards set to apply to additional bulb types starting in 2020 can save another \$343 billion.⁴⁰

Unfortunately, DOE just announced its intention to roll back the scope of Congressionally established lighting efficiency standards set to go forward in 2020.⁴¹ Such a move is likely to encounter lawsuits and could cost consumers up to \$100/year per household starting in 2025, according to ACEEE estimates.⁴² The irony of this rollback is that it comes about as marketplace innovation is rapidly accelerating in the lighting sector, yielding more consumer choice. This definition change risks retarding that innovation. Instead of rollbacks, DOE should invest its valuable time and resources in analyzing standards that are behind schedule to be evaluated, many of which could be made more stringent, to the economic benefit of Americans and greater energy conservation.

DOE is also working to promulgate a new “process rule” that imitates the poorly conceived tactic used by a previous administration by attempting to limit new appliance and equipment standards unless they overcome a new hurdle regarding the magnitude of energy savings.⁴³ This approach is out of touch with the changing consumer marketplace, due in part to the success of previous appliance standards themselves, where energy use is more and more spread across a large number of products rather than simply in a few major appliances. As noted above, more and more consumer energy use is coming from a variety of smaller products. It is not logical to saddle consumers with higher than necessary utility bills simply because they are exercising their marketplace power to take advantage of modern electronics.

The process rule proposal would also add more burdensome processes, tests and complications that would lead DOE’s own staff to be tied in knots when it tries to follow the statutory requirements to consider and promulgate updated standard, even if there is consensus among stakeholders that a stronger standard is warranted and appropriate with a net benefit for Americans.

⁴⁰ ACEEE, “US Light Bulb Standards Save Billions for Consumers But Manufacturers Seek a Rollback,” at <https://aceee.org/sites/default/files/bulb-standards-0803-2.pdf> (July 2018).

⁴¹ Department of Energy, “Energy Conservation Program: Energy Conservation Standards for General Service Lamps,” Notice of Proposed Rulemaking, at <https://www.energy.gov/sites/prod/files/2019/02/f59/withdrawal-of-gsl-definition-nopr.pdf> (Feb 6, 2019).

⁴² ACEEE, “Rollback of light bulb standards would cost consumers billions — \$100 per household each year,” at <https://aceee.org/press/2019/02/rollback-light-bulb-standards-would> (February 6, 2019).

⁴³ Department of Energy, “Procedures, Interpretations, and Policies for Consideration of New or Revised Energy Conservation Standards for Consumer Products” (“Process Rule”), Notice of Proposed Rulemaking, at <https://www.energy.gov/sites/prod/files/2019/02/f59/process-rule-notice.pdf> (Feb 6, 2019).

Conclusion

Appliance and equipment efficiency standards directly save Americans billions of dollars each year and help avoid the construction of costly new power plants. Further, the commercial equipment standards, not covered extensively in this testimony, increase corporate profitability and allow U.S. companies to better compete with overseas competitors.

Rather than continue to stall on or roll back standards, DOE should build on this progress and empower its staff to complete timely, data-driven, and thoroughly justified assessments of whether and by how much to improve appliance and equipment standards as part of a thorough rulemaking process that considers public and stakeholder input, as required by law and squarely in the interest of every American consumer.