BEFORE THE UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON ENERGY

TESTIMONY OF KATHERINE KENNEDY
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Hearing Entitled:

"WASTED ENERGY: DOE'S INACTION ON EFFICIENCY STANDARDS AND ITS IMPACT ON CONSUMERS AND THE CLIMATE"

March 7, 2019

Chairman Rush, Ranking Member Upton, and distinguished members of the Subcommittee, thank you for holding this hearing on the critically important topic of the U.S. Department of Energy's inaction on efficiency standards and its impact on consumers and the climate. Thank you also for the opportunity to testify today. My name is Katherine Kennedy and I am a Senior Director of the Climate and Clean Energy Program at the Natural Resources Defense Council (NRDC). I have 30 years of experience as a clean energy advocate, attorney, and policy expert. As an advocate, I have participated in numerous energy efficiency standard rulemakings at the U.S Department of Energy (DOE). As a lawyer, I have participated in many of the landmark cases that have led to the significant court decisions and consent decrees that helped to shape DOE's requirements and responsibilities with respect to the efficiency standards program. These include *NRDC v. Abraham*[1] and *New York v. Bodman*.[2] I have also written about the DOE efficiency standards program, including a chapter on the DOE program, attached to this testimony, that will be included in a book to be published later this month, *Legal Pathways to Deep Decarbonization in the United States*.[3]

[1] 355 F.3d 188 (2d Cir. 2004).
[2] Consent Decree, *New York v. Bodman*, No. 05-7807, 2007 LEXIS 80980 (S.D.N.Y. Nov. 1, 2007).
[3] Chapter 9, *Lighting Appliances and Other Equipment*, *Legal Pathways to Deep Decarbonization in the United States*, Michael B. Gerrard and John C. Dernbach, editors (ELI Press, March 2019), available at https://www.eli.org/eli-press-books/legal-pathways-deep-decarbonization-united-states. This chapter is attached as an Appendix to my testimony.

NRDC is a national, non-profit environmental organization representing more than 3 million members and online activists. Since 1970, our lawyers, scientists, and other environmental experts have worked to protect the world's natural resources, public health, and the environment. NRDC's top institutional priorities are focused on averting the worst consequences of climate change and scaling up clean energy. NRDC has a long history of engagement on federal and state energy efficiency standards as a key policy to lower energy bills and reduce greenhouse gas and other forms of pollution. NRDC staff have advocated for and helped to craft the National Appliance Energy Conservation Act (NAECA) and subsequent amendments that gave rise to the DOE program; participated in dozens of DOE rulemakings; negotiated consensus standards with manufacturers; and participated in litigation with respect to the program. NRDC staff also have conducted education and research related to efficiency standards.

I. EXECUTIVE SUMMARY

Climate change is the existential threat of our time. Combatting climate change requires bold, bipartisan action from Congress, whose most immediate and powerful weapon is strengthening energy efficiency. We see the effects of climate

change nearly every day. 2018 was the fourth-warmest year on record[4] and the impacts of this warming are clear: wildfires are costlier and more destructive than ever,[5] hurricanes are larger and occur more frequently,[6] and flooding in coastal communities has become the norm. Indeed, 20 percent of the U.S. federal deficit for fiscal year 2018 was in response to devastating wildfires, hurricanes, floods, and other natural disasters around the country.[7]

The International Panel on Climate Change (IPCC) released a special report in October 2018,[8] laying out the dangerous and frightening global ramifications if we fail to take rapid and transformative action to address climate change: hundreds of millions more people will be exposed to climate-related risks, including extreme temperatures, drought, and severe weather events.

[4] Steve Cole and Sean Potter, eds., *2018 Fourth Warmest Year in Continued Warming Trend, According to NASA, NOAA*, February 6, 2019, https://www.nasa.gov/press-release/2018-fourth-warmest-year-in-continued-warming-trend-according-to-nasa-noaa (accessed February 7, 2019).
[5] Robinson Meyer, *Why the Wildfires of 2018 Have Been So Ferocious*, The Atlantic, August 10, 2018, https://www.theatlantic.com/science/archive/2018/08/why-this-years-wildfires-have-been-so-ferocious/567215/ (accessed February 7, 2019).
[6] Melissa Denchak, *Hurricanes and Climate Change: Everything You Need to Know*, Natural Resources Defense Council, December 3, 2018, https://www.nrdc.org/stories/hurricanes-and-climate-change-everything-you-need-know (accessed February 7, 2019).
[7] U.S. Environmental Protection Agency, *Climate Change Indicators: Coastal Flooding*, August 2016, https://www.epa.gov/climate-indicators/climate-change-indicators-coastal-flooding (accessed February 7, 2019); Niv Elis, *Disasters Become Big Chunk of U.S. Deficit*, https://thehill.com/policy/finance/411215-disasters-become-big-chunk-of-us-deficit (Oct. 14, 2018).

[8] Intergovernmental Panel on Climate Change, *Special Report: Global Warming of 1.5°C*, 2018, https://www.ipcc.ch/sr15, November 2018 (accessed February 7, 2019).

The potential monetary and human costs of climate change are nearly unimaginable. The most recent climate assessment from the U.S. Global Change Research Program, a Federal program mandated by Congress to study and understand climate change, finds that "[w]ith continued growth in emissions at historic rates, annual losses in some economic sectors are projected to reach hundreds of billions of dollars by the end of the century—more than the current gross domestic product (GDP) of many U.S. states."[9] Even considering just the impacts of sea level rise, the costs are tremendous: the same report estimates that between $66 billion and $106 billion worth of real estate will be below sea level by 2050; and $238 billion to $507 billion, by 2100.[10]

But together we can still avoid the worst impacts of climate change, using tools and technologies that are already readily available. We know how to solve this problem; the biggest risks are inaction and delay.

Energy Efficiency Standards are a Crucial Tool for Fighting Climate Change

Scaling up energy efficiency is the best way to fight climate change while also reducing consumer energy bills, strengthening the electricity grid, and reducing

[9] D.R. Reidmiller, et al., eds., *2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief* https://nca2018.globalchange.gov/downloads/NCA4_Report-in-Brief.pdf.
[10] *Id.* at Chapter 8, https://nca2018.globalchange.gov/chapter/8/.

other forms of air and water pollution. One of the most effective policies to promote energy efficiency and reduce carbon pollution is through establishing minimum energy efficiency performance standards for appliances and equipment. Energy efficiency standards are technology-neutral and cost-effective, reducing energy consumption in appliances while maintaining the same level of service and comfort.

Well-known experts agree that energy efficiency standards are a critical tool for curbing climate change emissions. In a new book by energy expert Hal Harvey, chief executive officer of Energy Innovations, *Designing Climate Solutions: A Policy Guide for Low-Carbon Energy*,[11] Harvey notes that in the fight against climate change, "[d]elay is [k]iller,"[12] and calls out appliance energy efficiency standards as one of the most effective policies for reducing greenhouse gas emissions.[13] A report released in early February 2019 by former Secretary of Energy Ernest Moniz and Dr. Daniel Yergin cites the DOE energy efficiency standards program as one reason for "major drops in energy-related carbon emissions" in the United States.[14] Similarly, an upcoming book edited by Professor

[11] Hal Harvey, *Designing Climate Solutions,* Washington, DC: Island Press (2018).
[12] *Id.* at 2.
[13] *Id*. at 201.
[14] Breakthrough Energy, *Advancing the Landscape of Clean Energy Innovation*, February 2019, https://energyfuturesinitiative.org/s/BE2442_Report_013119.pdf (accessed February 25, 2019).

Michael Gerrard of Columbia Law School and John Dernbach of Widener University School of Law, *Legal Pathways to Deep Decarbonization*,[15] includes strengthening the DOE energy efficiency standards program as a key tool for reducing U.S. carbon emissions. I am the author of the energy efficiency standards chapter in this book, which is appended to this testimony. Finally, analysis from the International Energy Agency has consistently shown for years that smarter energy use and energy efficiency standards are the least expensive, yet most impactful, solution to fight climate change.[16]

DOE's Appliance and Equipment Standards Program Has a Strong Track Record of Success Reducing Carbon Pollution and Consumer Energy Bills

The U.S. Department of Energy (DOE)'s Appliance and Equipment Standards Program has, overall, had a strong track record of bipartisan success. The program was created by bipartisan legislation enacted by a Republican Senate and a Democratic House and signed into law by Republican President Ronald Reagan. Since then, this legislation has several times been strengthened by Congress on a bipartisan basis through subsequent amendments. Products covered by efficiency standards represent about 90 percent of home energy use, 60 percent of

[15] Michael B. Gerrard and John C. Dernbach, *Legal Pathways to Deep Decarbonization in the United States*, Washington, D.C: ELI Press (March 2019), *available at* https://www.eli.org/eli-press-books/legal-pathways-deep-decarbonization-united-states.
[16] International Energy Agency, *Energy Technology Perspectives 2017*, June 2017, https://www.iea.org/etp/ (accessed February 25, 2019).

commercial building energy use, and 30 percent of industrial energy use.[17] Improved and new efficiency standards for appliances and equipment are a critical way to lower energy consumption, and therefore reduce emissions, in both existing and new buildings. Diverse stakeholders have strongly supported the DOE energy efficiency standards program over the last four decades, including not only energy efficiency and environmental advocates, but also consumer and low-income consumer groups, utilities, state officials, and manufacturers.

The energy efficiency standards program has already produced enormous carbon, energy, and dollar savings.[18] The program saves each U.S. household an average of $500 per year and has reduced carbon dioxide emissions by more than 7 billion metric tons over the last 30 years.[19] There are still far more savings to be had from updates to existing standards and from future new standards. The energy efficiency standards program benefits all consumers, especially low-income households and renters. Manufacturers have expressed that they benefit from nationwide standards as opposed to potentially differing state standards.

[17] U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, *Appliance and Equipment Standards Program*, https://www.energy.gov/eere/buildings/appliance-and-equipment-standards-program (accessed February 25, 2019).
[18] *See*, e.g., *Saving Energy and Money with Appliance and Equipment Standards in the United States* (Jan. 2017), https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917_0.pdf.
[19] Andrew deLaski et al., *Next Generation Standards: How the National Energy Efficiency Standards Program Can Continue to Drive Energy, Economic, and Environmental Benefits*, August 2016, https://appliance-standards.org/sites/default/files/Next%20Gen%20Report%20Final_1.pdf (accessed February 7, 2019).

DOE's Legal Obligations

The Energy Policy Conservation Act (EPCA) and the National Appliance Energy Conservation Act (NAECA) set clear obligations for DOE with respect to establishing energy efficiency standards. Federal courts have enforced these obligations when DOE has failed to take required actions on energy efficiency standards by the required Congressional deadline or has attempted to weaken the program. An important federal court decision, *NRDC v. Abraham*, holds that DOE cannot weaken an established energy efficiency standard once it has been promulgated because of an "anti-backsliding" provision that Congress included in the NAECA legislation. Another landmark case, *New York v. Bodman*, resulted in a consent decree that required DOE to issue 23 overdue appliance program standards by specific deadlines.[20] This case and the consent decree that resolved it underline that DOE has a mandatory duty to meet Congressional deadlines for issuing energy efficiency standards and related regulations, and that these legal obligations are enforceable by the federal courts.

[20] Consent Decree at 2-4, *New York v. Bodman*, No. 05-7807, 2007 LEXIS 80980 (S.D.N.Y. Nov. 1, 2007), http://columbiaclimatelaw.com/files/2017/02/NY-v.-Bodman-Consent-Decree.pdf. The overdue standards included efficiency standards, product-specific determinations and one test procedure.

DOE Must Move Forward, Not Backward on Energy Efficiency Standards to Meet the Challenge of Climate Change

The worst impacts of climate change are enormous, but not inevitable if we take strong action immediately. Now is the time to dramatically scale up our actions to reduce the most harmful impacts, using improved efficiency standards as one of the critical tools. Delaying action is costly, as appliances and equipment have relatively long lifetimes. Every inefficient piece of equipment that is installed today helps to lock in a higher level of carbon pollution for decades to come. Global warming is directly related to the total amount of carbon dioxide in the atmosphere, so the longer we delay our actions, the harder we make it to reverse course.[21]

Despite the long history of bipartisan support for the federal efficiency standards program, the current administration has brought the DOE energy efficiency standards program to a grinding halt and is trying to put the program in reverse. DOE has issued no new energy efficiency standards–or even released any for consideration–during the first two years of this administration (other than a few of the standards developed by DOE at the end of the Obama administration). Instead,

DOE's focus has been on unnecessary changes that will undermine the program and threaten its impact, including recent proposals to attempt to gut or eliminate important energy efficiency standards for light bulbs and to "reform" the way standards are established to make the process slower and more beholden to industry interests, contrary to Congress' directives.

This Subcommittee should be gravely concerned that DOE's illegal delays and inaction, combined with DOE's proposals to slow or gut the program entirely, will have consequences that stretch far beyond this administration. Fighting climate change without a robust efficiency standards program is like trying to finish a puzzle with missing pieces: it's harder, it takes longer, and at the end, it's impossible. That's not a risk we can afford to take.

Key examples of threatened rollbacks of energy efficiency standards include the following two DOE proposals, released in February 2019:

- DOE has proposed a wholesale gutting of the lighting efficiency standards due to take effect on January 1, 2020 by rolling back the existing definitions of the light bulbs that would be subject to the standard. This rollback would exempt common types of bulbs that go into 2.7 billion sockets, almost half of all U.S. residential sockets, from having to meet these crucial energy

efficiency standards.[22] Worse yet, at a recent public hearing, DOE staff incorrectly suggested that stronger "backstop" lighting energy efficiency standard that Congress specified should go into effect on January 1, 2020, could somehow be completely forestalled or avoided. These DOE positions, if finalized, would cost consumers an average of $115 per household each year.

- DOE has also proposed to "reform" the process by which DOE energy efficiency standards are set by adding further delay and unnecessary red tape to the process of setting energy efficiency standards, contrary to law.[23]

These damaging DOE proposals should not move forward. Instead, DOE should fulfill its statutory obligations to update energy efficiency standards under the schedule required by law and should act to expand the energy and carbon savings from the program. This would benefit all Americans, our economy, and our environment, and would protect our children and their future.

II. MAINTAINING AND ACCELERATING ENERGY EFFICIENCY IS A CRITICAL COMPONENT OF MEETING CARBON REDUCTION GOALS

NRDC's 2018 analysis and report, *America's Clean Energy Frontier: The Pathway to a Safer Climate Future*, shows that proven clean energy solutions have the potential to reduce greenhouse gas emissions across the entire U.S. economy by at least 80 percent by 2050, with fully half of those savings coming from energy

[22] *Energy Conservation Program: Energy Conservation Standards for General Service Lamps*, 84 Fed. Reg. 3120 (Feb. 11, 2019) (Lighting NOPR)
[23] *Energy Conservation Program for Appliance Standards: Proposed Procedures for Use in New or Revised Energy Conservation Standards and Test Procedures for Commercial/Industrial Equipment*, 84 Fed. Reg. 3910 (Feb. 13, 2019) (Process Rule NOPR).

efficiency.[24] With additional innovation, the U.S. can also strive to go even further, and faster, in cutting carbon pollution, which would further help to limit global temperature increases.

As Figure 1 shows, four strategies are crucial to the U.S. achieving these greenhouse gas emissions cuts:

> 1) implementing energy efficiency technologies and system-wide energy efficiency approaches to directly reduce energy demand by 40% compared to business as usual;
>
> 2) generating cleaner electricity primarily through the significant expansion of renewable energy resources such as wind and solar power;
>
> 3) employing near-zero carbon electricity, to the greatest practical extent, to directly displace the use of fossil fuels in transportation, buildings, and industry (this also contributes to overall efficiency gains); and
>
> 4) decarbonizing any remaining fossil fuel uses, primarily in transportation and industry.[25]

[24] Vignesh Gowrishankar and Amanda Levin, *America's Clean Energy Frontier: The Pathway to A Safer Climate*, Natural Resources Defense Council, September 2017, at 5, https://www.nrdc.org/sites/default/files/americas-clean-energy-frontier-report.pdf (accessed February ,7 2019).
[25] *Id.* at 8, 16-17.

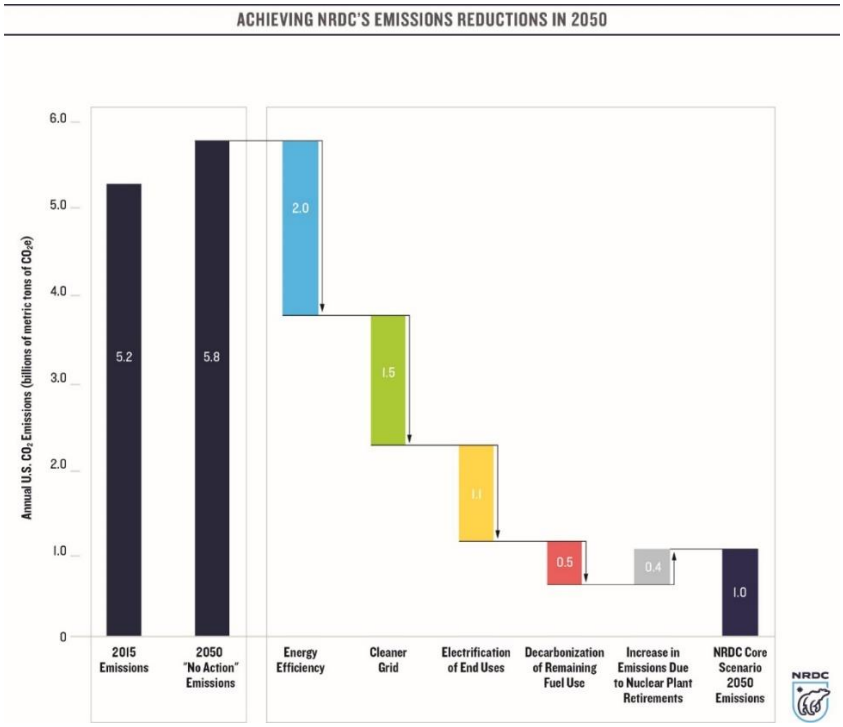


Figure 1: Strategies to achieve emissions reductions in 2050

Of these four strategies, as shown in Figure 1, energy efficiency provides half of the carbon dioxide emissions reductions that the U.S. needs to make by 2050. This means that maintaining and accelerating energy efficiency improvements is absolutely critical to achieving U.S. emissions reduction goals and doing so in an affordable manner. Aggressive deployment of energy efficiency technologies and system-wide energy efficiency approaches will be needed across all economic sectors, to slash our energy demand by 40 percent compared to a reference scenario (which represents business as usual), without compromising on service or comfort levels.[26] These include cutting energy demand through more efficient

[26] *Id.* at 21.

buildings, appliances, factories, and vehicles while conserving additional energy in buildings through operational and behavioral changes.[27] Further efficiency gains can be secured by displacing the use of fossil fuels in our transportation, buildings, and industry with technologies that run on clean electricity (e.g., electric vehicles and electric heat-pumps).[28] All told, energy efficiency can reduce our energy demand needs by 50 percent by 2050.[29]

These energy efficiency approaches and their deployment levels are based on proven solutions that are available today, real-world successes, and well-supported assumptions. As one of the most inexpensive energy solutions available, energy efficiency is instrumental in making the clean energy transition affordable, and over time is the most cost-effective approach to meeting our energy needs.[30] Capitalizing on energy efficiency allows us to avoid relying on other technologies that are costlier or riskier, or currently deployed at smaller scale.

Continuous improvement in federal energy efficiency standards will be crucial to achieving the carbon reductions outlined in Figure 1. To achieve the overall carbon dioxide emissions cuts, the U.S. also will need to universally adopt LED

[27] *Id.* at 21-24.
[28] *Id.* at 6.
[29] *Id.*
[30] *See id.* at 21.

lighting by 2050 and maintain a 2 percent annual improvement rate for efficiency, on average, across all appliances.[31] This annual improvement rate reduces new appliance energy use by 50% by 2050.[32]

To achieve this continuous improvement in efficiency across all appliances, many policies and incentives will be needed but the DOE federal efficiency standards program remains, and will remain, foundational. The 2016 National Academies of Science report *The Power of Change* clearly identifies the indispensable role that federal policies play in overcoming obstacles and driving the market.[33] It goes on to recommend that DOE set standards for equipment on an ongoing basis at the maximum levels that are technologically and economically justified, that DOE should help develop model building codes and energy management practices, and that DOE should invest in energy efficiency innovation.

DOE should maintain and strengthen the federal energy efficiency standards program because it is the central policy driver that requires improvements in product energy efficiency standards as technology improves and it requires

[31] *Id.* at 22.
[32] *Id.*
[33] National Academies of Sciences, Engineering, and Medicine. 2016. *The Power of Change: Innovation for Development and Deployment of Increasingly Clean Electric Power Technologies*. Washington, DC: The National Academies Press. doi: 10.17226/21712

consideration of regular updates to product efficiency standards. Instead, however, as is outlined in Section IV, DOE has delayed progress and, still worse, is attempting to the gut the program and move the United States backward on efficiency standards.

III. CURRENT AND FUTURE CLIMATE AND ENERGY SAVING BENEFITS OF THE DOE EFFICIENCY STANDARDS PROGRAM

Today, residential appliances, commercial appliances, industrial equipment, and lighting products account for a significant percentage of U.S. energy use and carbon emissions. The residential and commercial end-use sectors for appliances and equipment accounted for 18.6% and 17.0%, respectively, of CO_2 emissions from fossil fuel combustion in 2017.[34]

A. Savings from existing DOE efficiency standards

National energy efficiency standards set by the DOE are among the most successful energy-saving initiatives in U.S. history, second only to the vehicle fuel economy standards for cars.[35] The average U.S. family saves nearly $500 each year

[34] U.S. Energy Info. Admin., *Monthly Energy Review, Environment*, https://www.eia.gov/totalenergy/data/monthly/ (last visited Aug. 2, 2018).
[35] Appliance Standards Awareness Project, "Appliance Standards Rank as #2 Energy-Saving Tool in US," February 2017, https://appliance-standards.org/document/appliance-standards-rank-2-energy-saving-tool-us (accessed February 7, 2019).

on their utility bills due to efficiency standards for appliances, lighting, and plumbing products.[36] According to DOE's own estimates, between 1987, when the bipartisan National Appliance Energy Conservation Act (NAECA) was first enacted, and 2030, standards will save consumers more than $2 trillion on their utility bills and reduce carbon dioxide emissions by more than 7 billion metric tons, while saving 132 quads of energy.[37] For comparison, the entire U.S. economy uses about 100 quads per year.

Emissions reductions from already-implemented standards grow on an annual basis as more appliances and equipment are replaced with the more energy efficient ones required by the standards. The Appliance Standards Awareness Project estimates that existing standards will reduce carbon dioxide (CO_2) emissions by about 325 million metric tons in 2025 (relative to a 2005 baseline), achieving about 20 percent of the U.S. emissions reduction commitment made as part of the Paris

[36] Andrew deLaski and Joanna Mauer, *Energy-Saving States of America: How Every State Benefits from National Appliance Standards*, February 2017, https://appliance-standards.org/sites/default/files/Appliances%20standards%20white%20paper%202%202-14-17.pdf (accessed February 7, 2019).
[37] U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, "Saving Energy and Money with Appliance and Equipment Standards in the United States," February 2016, https://www.energy.gov/sites/prod/files/2016/02/f29/Appliance%20Standards%20Fact%20Sheet%20-%202-17-2016.pdf (accessed February 7, 2019).

Climate Treaty.[38] That's equivalent to the annual emissions from more than 69 million cars.[39]

B. Benefits of standards to low-income families

Efficiency standards help consumers of all income levels but are of particular importance to renters and those living on fixed incomes. Low-income households, households of color, and renters experience disproportionately higher energy burdens than the average household in the same metropolitan area.[40] This disparity in energy burden – meaning the percentage of gross household income spent on energy bills – is striking: on average, low-income households spend 7.2 percent of their income on utility bills, more than triple that spent by higher-income households.

Low-income residents often live in older, leakier housing with inefficient appliances and equipment. Standards ensure that when old equipment is replaced, the new equipment meets a minimum level of efficiency, which in turn saves

[38] Andrew deLaski et al., *Next Generation Standards: How the National Energy Efficiency Standards Program Can Continue to Drive Energy, Economic, and Environmental Benefits*, August 2016, https://appliance-standards.org/sites/default/files/Next%20Gen%20Report%20Final_1.pdf (accessed February 7, 2019).
[39] U.S. Environmental Protection Agency, *Greenhouse Gas Equivalencies Calculator*, December 2018, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator (accessed February 7, 2019).
[40] Energy Efficiency for All, Lifting the High Energy Burden in America's Largest Cities, April 2016, http://energyefficiencyforall.org/resources/lifting-high-energy-burden-americas-largest-cities (accessed March 4, 2019).

energy and money on electricity and gas bills -- and reduces energy burden. Efficiency standards are a critical safety net for renters and families living in multifamily housing – groups that are statistically more likely to be low-income. Renters do not have control over the types of appliances and equipment found in their homes, and landlords (who don't generally pay the utility bills) do not have an incentive to invest in anything but the cheapest equipment they can purchase. Standards ensure that even the least-expensive equipment available meets a baseline level of efficiency. Minimum efficiency standards protect all consumers, particularly those who don't have the ability to make the purchasing decisions but end up paying the energy bills.

Energy efficiency standards benefit anyone who pays a utility bill or wants to breathe clean air, whether or not they buy a new appliance. Strong standards reduce energy consumption over time, which means that the dirtiest power plants do not need to run as often -- and therefore, lower amounts of harmful pollution are emitted. As low-income households and households of color are often located in closer proximity to dirty power generation,[41] the savings from efficiency standards

[41] Natural Resources Defense Council, *Bridging the Clean Energy Divide: Affordable Clean Energy Solutions for Today and Tomorrow*, April 2015, https://www.nrdc.org/sites/default/files/clean-energy-benefits-vulnerable-comms-report.pdf (accessed March 4, 2019).

also means these populations benefit from cleaner air and fewer health issues exacerbated by pollution, like asthma.

Over time, energy savings from standards can help avoid the need to build new power plants, saving both electricity and natural gas. Since the construction costs for building new plants are often passed along to customers, this means energy rates and energy bills are kept lower than they would be otherwise. All consumers benefit from lower energy bills, and especially low-income households since a larger proportion of their income goes toward paying these bills. As an example, in the Pacific Northwest, electric load growth was reduced from 1.1 percent per year to 0.8 percent per year, due entirely to federal efficiency standards finalized between 2010 and 2014. This equates to a savings of 13,000 gigawatt-hours per year by 2035 – about one-and-a-half times the annual electricity use of the city of Seattle.[42] This electricity will never have to be generated, and consumers will never have to pay for that energy – because it's not being used, thanks to efficiency standards.

[42] Northwest Power and Conservation Council, *Invited Testimony of Tom Eckman, Director, Power Division, Before the House Subcommittee on Energy and Power*, June 10, 2016, https://docs.house.gov/meetings/IF/IF03/20160610/105034/HHRG-114-IF03-Wstate-EckmanT-20160610.pdf (Accessed March 4, 2019).

C. Benefits of standards to manufacturers

In addition to the climate, energy, and consumer utility bill savings from efficiency standards, manufacturers benefit from a national standards program compared to a system of state standards. The standards program is designed to give manufacturers nationwide uniformity as a general matter, rather than having to comply with potentially differing state standards. The requirement for national standards to be updated on a regular basis (discussed below) gives manufacturers needed predictability and certainty, and spurs innovation.

Thanks to efficiency standards and DOE research and development programs, innovation has helped slash the costs of products like LED lightbulbs—which typically use 75 to 80 percent less energy than their incandescent counterparts—by a whopping 94 percent since 2008, enabling hundreds of millions of new bulbs to change the way we illuminate our buildings. Manufacturers benefit from selling more units – and thousands of Americans benefit as this increased manufacturing increases the number of jobs.

According to the 2018 U.S. Energy Employment Report, as of the second quarter of 2017, there are over 350,000 Americans working in producing, installing and

selling CFL, LED and other efficient lighting.[43] This is an increase from 2015, when there were around 330,000 jobs in the area.

Success stories, from both environmental and business perspectives, are not hard to find. For instance, manufacturers of swimming pool pumps recently supported a recent standard for their products. This industry has not been regulated by DOE prior to this standard, yet its trade association (the Association of Pool and Spa Professionals, APSP) and members recognize the inherent benefits of a national standard:

> Without question, APSP and its manufacturer members believe there should be a uniform federal rule pertaining to dedicated pool pump energy efficiency requirements. This best serves the interest of U.S. based manufacturers, distributors, retailers, installers and, most importantly, to the consumers who are the end-users that ultimately see the energy savings. The alternative is a patchwork of state regulations that make it difficult and more expensive to manufacture the products being regulated, the elimination of channels of trade reducing consumer choice, difficulty enforcing conflicting regulations, and due to this patchwork, consumer confusion and cross border purchasing that ultimately results in less savings to the consumer.[44]

[43] 2018 U.S. Energy and Employment Report, Energy Futures Initiative and National Association of State Energy Officials, *available at* https://static1.squarespace.com/static/5a98cf80ec4eb7c5cd928c61/t/5afb0ce4575d1f3cdf9ebe36/1526402279839/2018+U.S.+Energy+and+Employment+Report.pdf (May 2018) at 80.

[44] The Association of Pool and Spa Professionals, *APSP Comments on Final Rule and NOPR for Dedicated-Purpose Pool Pumps*, Docket No. EERE–2015–BT–STD–0008) *available at*: https://www.regulations.gov/document?D=EERE-2015-BT-STD-0008-0127.

Many manufacturers of products that have long been a part of the efficiency standards program are equally supportive. The residential central air conditioner and heat pump standard was negotiated in 2016 between representatives of manufacturers, advocates, utilities, and other stakeholders as part of a DOE-convened regulatory negotiation.[45] The standard was subsequently finalized by the current administration in 2017.[46] One company said that the negotiated standard "helps to limit the number of design iterations that manufacturers will be mandated to endure, especially in light of the fact that refrigerant regulations are very likely to begin with the 2023 cycle of energy regulations introduced by this rulemaking. We most definitely value the certainty provided for these products through the end of 2028."[47] This certainty to business comes on top of the 340 billion kilowatt hours that will be conserved over 30 years as a result of the standard—a win for the economy and the environment.[48]

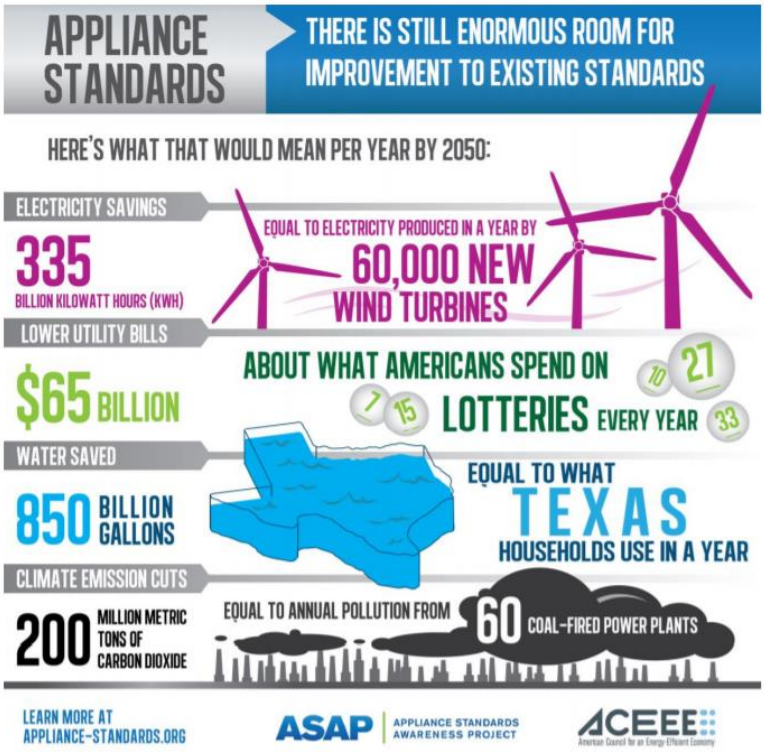
[45] *See* Meg Waltner, *Consensus Reached on Residential Air Conditioner and Heat Pump Efficiency Standards* (2016), *available at:* https://www.nrdc.org/experts/meg-waltner/consensus-reached-residential-air-conditioner-and-heat-pump-efficiency-standards.
[46] Rebecca Kern, *Release—Finally—of Appliance Efficiency Standards Applauded,* (2017), *available at:* https://www.bna.com/releasefinallyof-appliance-efficiency-n73014451638/.
[47] *Goodman Manufacturing, Comment on Energy Conservation Program: Energy Conservation Standards for Consumer Central Air Conditioners and Heat Pumps*, Docket No. EERE-2014-BT-STD-0048, RIN 1904-AD37, *available at:* https://www.regulations.gov/document?D=EERE-2014-BT-STD-0048-0191.
[48] Andrew deLaski, *DOE Completes New Consensus-based Air Conditioner Standards,* (2016), *available at:* https://appliance-standards.org/blog/doe-completes-new-consensus-based-air-conditioner-standards.

D. Future savings potential

Accelerating progress on standards is completely feasible and more necessary than ever. The good news is that we know what needs to be done. Scaling up the energy efficiency of appliances and equipment requires both mandatory measures—such as energy-efficiency standards and mandatory energy-efficiency goals—and voluntary measures such as energy-efficiency labeling programs like ENERGY STAR®, and incentives in the form of tax benefits, utility rebates, or other inducements. Integrating and synchronizing these two different approaches creates a virtuous cycle: initial mandatory standards establish a minimum efficiency floor, then voluntary measures lead to further innovation and improvements in technology that lead to higher levels of efficiency, which then allows higher mandatory efficiency standards to be established.

Even with the phenomenal savings achieved to date, there are still plenty more energy, carbon, and utility bill savings to be had from efficiency standards. As manufacturers continue to innovate, technologies that represent the "max tech" option (the highest feasible level of technology) become cost-effective for consumers. The Appliance Standards Awareness Project estimates that future updates to existing standards have the potential to reduce U.S. primary energy use by an additional 70 quads by 2050, while reducing CO_2 emissions by an additional

3.5 billion metric tons. For comparison, total U.S. CO_2 emissions in 2014 were about 5.6 billion metric tons. Consumers and businesses can likewise reap the benefits, with cumulative utility bill savings of an additional $1.1 trillion through 2050.[49]



Additional energy and carbon savings are available even from appliances whose efficiency already has been improved multiple times as a result of efficiency standards. Most of the products with the greatest savings potential (Figure 2) have already had their standards updated, in some cases several times, and yet

[49] Andrew deLaski et al., *Next Generation Standards: How the National Energy Efficiency Standards Program Can Continue to Drive Energy, Economic, and Environmental Benefits*, August 2016, https://appliance-standards.org/sites/default/files/Next%20Gen%20Report%20Final_1.pdf (accessed February 7, 2019).

continuing improvements in technology continue to emerge, creating still further opportunities for efficiency improvements. This goes to show that innovation will continue to drive energy savings opportunities even for products that have already made substantial improvements.

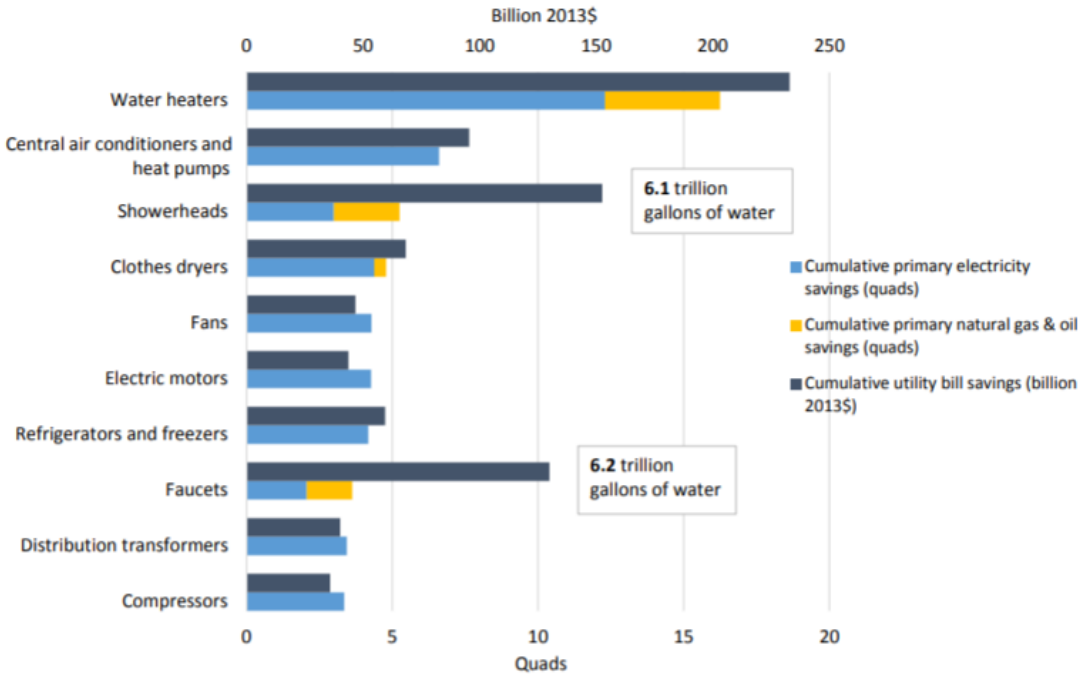


Figure 2: Potential cumulative primary energy savings and utility bill savings through 2050 for top 10 standards updates. Source: Appliance Standards Awareness Project

Manufacturers have shown time and time again that, through technology improvements and innovation, products can continue to become more efficient over time without increasing in cost. Take refrigerators as an example: Before the first efficiency standard was established in 1973, refrigerators were using more energy year after year. In the time since their efficiency standards were first set, refrigerators have gotten bigger, quieter, cheaper to run, and now include

additional features. A new refrigerator meeting the latest efficiency standard (which went into effect in 2014) uses only about a quarter of the energy of its 1973 counterpart, offers 20 percent more storage, and costs half as much, adjusted for inflation (Figure 3).

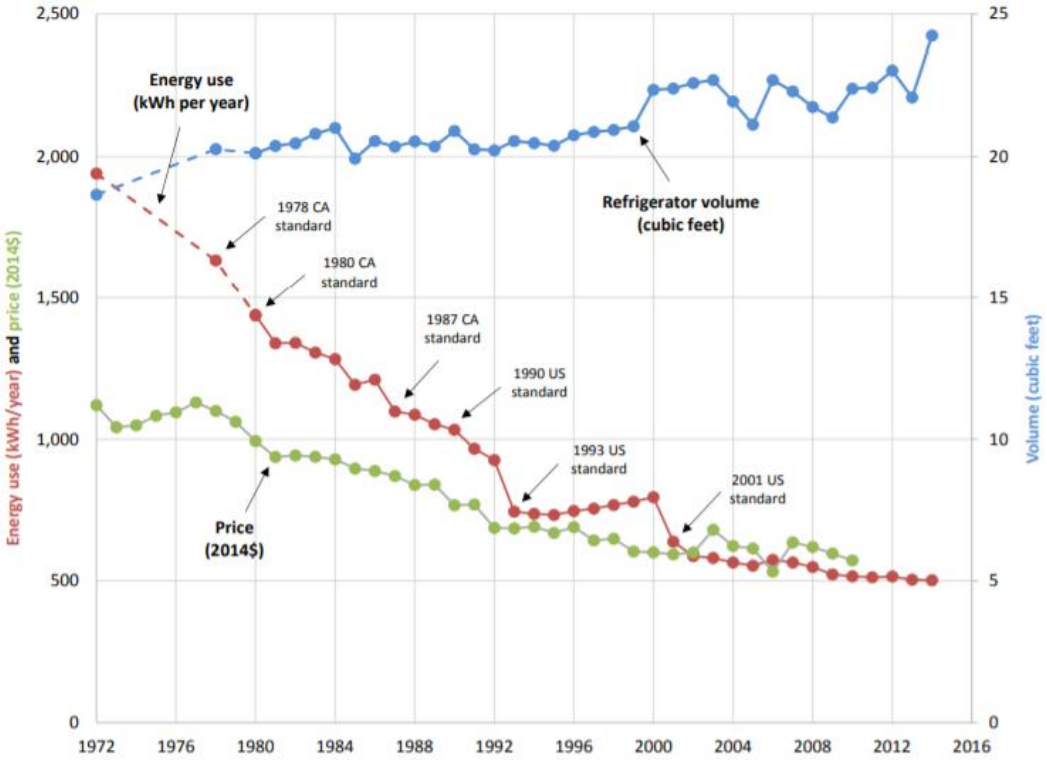


Figure 3: Average household refrigerator energy use, volume, and price over time. Data include standard-size and compact refrigerators. Energy consumption and volume data reflect the current DOE test procedure. Volume is adjusted volume, which is equal to fresh food volume + 1.76 times freezer volume. Prices represent the manufacturer selling price (i.e., excluding retailer markups) and reflect products manufactured in the United States. Sources: Association of Home Appliance Manufacturers (AHAM); U.S. Census Bureau.

Furthermore, there are a number of products that are not currently regulated by the federal government but have significant potential for energy, water, and carbon

savings, including lawn spray sprinklers, high-color-rendering index fluorescent lamps, and pool pump replacement motors. States may adopt standards for these products, and many states are choosing to adopt their own standards in lieu of federal action. In addition, plumbing products including faucets and showerheads are subject to a federal standard, yet are not currently subject to preemption by the federal government, so states may set standards.[50] If all states set standards for this suite of eligible products, they would lead to an additional 321 million metric tons of CO_2 savings by 2035.

IV. KEY LEGAL REQUIREMENTS GOVERNING THE DOE ENERGY EFFICIENCY STANDARDS PROGRAM

In *Lighting, Appliances and Other Equipment*,[51] attached to this testimony, I provide a history of the legislative underpinnings of the DOE energy efficiency program, the required process for establishing energy efficiency standards, and a review of key legal decisions. Several key points deserve emphasis here.

First, DOE may not weaken an energy efficiency standard that has already been established. NAECA, discussed above, added what is by now a hallmark of the

[50] *Energy Efficiency Program for Consumer Products: Waiver of Federal Preemption of State Regulations Concerning the Water Use or Water Efficiency of Showerheads, Faucets, Water Closets, and Urinals*¸75 Fed. Reg. 80289 (Dec. 22, 2010).
[51] *See* Chapter 9, *Lighting Appliances and Other Equipment, Legal Pathways to Deep Decarbonization in the United States, supra*, note 3.

appliance standards program, the anti-backsliding requirement that states that DOE "may not prescribe any amended standard which increases the maximum allowable energy use, or, in the case of showerheads, faucets, water closets, or urinals, water use, or decreases the minimum required energy efficiency, of a covered product."[52] In other words, DOE is prohibited from issuing standards that would weaken existing efficiency requirements.

The importance of this anti-rollback provision was made clear in 2001, when the Bush administration DOE delayed and attempted to suspend strengthened central air conditioner efficiency standards that had been published in the Federal Register near the end of the Clinton administration.[53] DOE published new central air conditioning standards in 2002 that sought to weaken the Clinton administration's standards.[54] DOE also attempted to interpret the anti-backsliding requirements in such a way that this backsliding would be permitted.[55]

NRDC, along with a coalition of states, efficiency, consumer and low-income consumer advocates challenged DOE's attempted rollback actions in federal court.

[52] 42 U.S.C. § 6295(o)(1); *see NRDC v. Abraham*, 355 F.3d 179, 187-88 (2nd. Cir. 2004) (discussing NAECA's addition of the anti-backsliding requirements to EPCA).
[53] *See NRDC v. Abraham*, 355 F.3d at 188-91 (discussing the procedural history of DOE's efforts to weaken the central air conditioner standards).
[54] *Id.*
[55] *Id.* at 190-91.

In 2004, the U.S. Court of Appeals for the Second Circuit ruled that DOE's actions were illegal due to NAECA's anti-rollback provision and ordered DOE to reinstate the stronger Clinton administration standards.[56] Specifically, the court ruled that the Bush DOE's attempt to vacate the stronger Clinton administration central air conditioner standards after they had been published in the Federal Register violated the anti-backsliding provision.[57] In addition, the court rejected DOE's interpretation of the anti-backsliding prohibition, which would have allowed DOE to weaken any standard prior to the manufacturer compliance date, as in conflict with NAECA.[58]

Unfortunately, DOE, under the current administration, has failed to heed the clear holding of *NRDC v. Abraham* and has continued to attempt to suspend and delay duly promulgated energy efficiency and related rules. Just last month, a federal court found such a recent delay by DOE to be illegal. In 2017, DOE attempted to suspend and delay a test procedure for central air conditioners in order to preserve a loophole requested by a specific manufacturer. NRDC filed suit and the court on

[56] *NRDC v. Abraham*, 355 F.3d 179.
[57] *Id.* at 197.
[58] *Id.* at 198-99. The court also ruled that, even assuming that the anti-backsliding provisions were ambiguous, DOE's interpretation was impermissible. *See id.* at 199-200.

Feb. 22, 2019, held that this suspension was arbitrary and capricious, and contrary to the record before it.[59]

Second, DOE must comply with Congress' required schedule for the adoption and updating of energy efficiency standards. In addition to the anti-rollback provision, NAECA added product-specific national standards and, because technology improves over time, also added specific deadlines by which DOE is required to update these standards.[60] Other products and deadlines were added in subsequent amendments. DOE's duty to comply with such deadlines is not discretionary and they are an essential element of the success of the program. DOE is also required to review each appliance standard every six years to determine if it should be strengthened.[61]

NAECA's deadlines are enforceable in federal court through a citizen suit provision.[62] In 2005, NRDC, joined by a coalition of states, efficiency advocates, consumer and low-income consumer advocates, sued the Bush administration DOE over some two dozen missed deadlines for updating energy efficiency standards

[59] *See NRDC v. Department of Energy*, 2019 Westlaw 858748 (S.D.N.Y. Feb. 22, 2019).

[60] *See* Pub. L. No. 100-12, Sec. 5 (amending Sec. 325 of EPCA).
[61] 42 U.S.C. § 6295(m)(1)
[62] 42 U.S.C § 6305(a).

and test method rules. DOE ultimately entered into a court-ordered consent decree that required these overdue rules to be issued by a specific schedule.[63] Today, DOE risks similar legal action by its growing delays in issuing energy efficiency standard updates.

Third, when establishing or amending an energy efficiency standard, DOE must establish it at the highest level that is technologically feasible and economically justified. This requirement is critically important to the appliance standards program. In the Reagan administration, DOE refused to finalize standards that had been developed in the Carter administration.[64] DOE had redefined the "significant" level of energy savings required to establish new standards under EPCA and had calculated that market forces would accomplish a high level of savings in the absence of a standard.[65] In effect, rather than establishing new standards, the rules merely articulated the department's assessment that no standards were warranted.

NRDC filed suit, challenging these "no-standard standards." In *Natural Resources Defense Council v. Herrington*, the U.S. Court of Appeals for the District of

[63] *See New York v. Bodman*, *supra* notes 2, 20.
[64] *Natural Res. Def. Council v. Herrington*, 768 F.2d 1355, 1367-69 (D.C. Cir. 1985) (discussing the history of appliance efficiency rulemaking during President Ronald Reagan's first term).
[65] *Id*. at 1383-84.

Columbia Circuit overturned DOE's rules, rejecting the department's methodology and its redefinition of "significant" savings.[66] DOE had attempted to undercut the appliance program by setting a threshold for "significant conservation of energy" that few products could meet. Specifically, they would have required that a standard either: 1) save 10,000 barrels per day of oil (or an equivalent amount of gas) over the average life of the product; 2) save "one percent of national electricity use" over the average life of the product; or 3) result in savings that equal at least 16.67% of the energy that would be consumed in a no standard scenario.[67]

The court rejected these thresholds as unduly stringent and contrary to the language and intent of EPCA.[68] The court directed DOE to start rulemaking anew and develop substantive minimum standards.[69] In so doing, the court criticized DOE's decision to "adopt[] tests for significant savings over well-founded objections that the tests openly violated congressional intent," and also noted that DOE made "persistently pessimistic assumptions about the burdens of standards and was conspicuously reluctant to address their benefits."[70]

[66] *Id.* at 1377-83.
[67] *Id.* at 1372 (quoting DOE's definitions).
[68] *Id.* at 1382-83.
[69] *Id.* at 1433.
[70] *Id.*

Following this decision, stakeholders negotiated for an improved federal program, resulting in the enactment of NAECA, which included many elements that arose from *NRDC v. Herrington* decision, including specific deadlines for updating standards and the requirement that DOE efficiency standards must ‘‘be designed to achieve the maximum improvement in energy efficiency which the Secretary determines is technologically feasible and economically justified.”[71]

V. THE CLIMATE AND WASTED ENERGY IMPACTS OF DOE’S CURRENT DELAYS

Despite the urgent need for action on climate, the current administration is mired in delay and is proposing actions to bring many of the best tools that we have to fight climate change, including the standards program, to a grinding halt. DOE has not finalized any new or updated energy efficiency standards – or even any proposed standards -- during the first two years of this administration. Instead, DOE’s focus has been on unnecessary changes that will undermine the program and threaten its impact. Furthermore, DOE recently proposed to roll back and has even suggested that it would eliminate upcoming efficiency standards for light bulbs that were

[71] 42 U.S.C. 6295 (o)(2)(A).

required by Congress, which would cost consumers $115 per household each year in lost energy savings.[72]

A. DOE Inaction and Delay

As of February 2019, DOE has missed legal deadlines for updating 16 product standards,[73] representing millions of lost dollars in consumer savings. There are 12 additional statutorily required deadlines between now and January 2021 that are also at risk. DOE is not following the regulatory agenda it sets for itself,[74] even for deadlines that are not statutorily mandated. This inaction is unwarranted, irresponsible, and illegal. Failure to update standards on the schedule required by law puts at risk the 70 quads of energy savings, 3.5 billion metric tons of CO2 emissions savings, and $1.1 trillion in utility bill savings by 2050, as discussed above. On an annual basis, this means consumers could miss out on $65 billion each year in utility bill savings -- which is 27 times greater than the annual budget of DOE's Office of Energy Efficiency and Renewable Energy.[75]

[72] American Council for an Energy-Efficient Economy, *Rollback of Light Bulb Standards Would Cost Consumers Billions - $100 per Household Each Year, February 2019*, https://aceee.org/press/2019/02/rollback-light-bulb-standards-would (accessed February 7, 2019).
[73] Appliance Standards Awareness Project, *Missed Deadlines for Appliance Standards*, January 2019, https://appliance-standards.org/sites/default/files/Missed_deadlines_as_of_Jan_2019.pdf (accessed February 7, 2019).
[74] Office of Information and Regulatory Affairs, *Fall 2018 Unified Agenda of Regulatory and Deregulatory Actions*, Office of Management and Budget, https://www.reginfo.gov/public/do/eAgendaMain (accessed February 7, 2019).
[75] *See* Andrew deLaski, Joanna Mauer et al. *Next Generation Standards: How the National Energy Efficiency Standards Program Can Continue to Drive Energy, Economic, and Environmental Benefits,* Appliance Standards Awareness Project and American Council for an Energy-Efficient Economy (August 2016), available at, https://appliance-standards.org/sites/default/files/Next%20Gen%20Report%20Final_1.pdf, at p vi.; *cf.*

Looking just at the standards that are already overdue,

Table 1), more than 70 million metric tons of carbon savings are at risk each year, equivalent to more than the annual emissions from all of the homes in New York City, Los Angeles, Houston, Chicago and Philadelphia, combined. [76]

Table 1: Potential 2050 carbon savings at risk, from standards already delayed

Product	Legal Deadline	Potential additional annual CO2 savings in 2050 (MMT)
Small Electric Motors	March 2016	0.8
Pool Heaters	April 2016	0.4
Water Heaters	April 2016	38.7
Clothes Dryers	April 2017	11.5
Room Air Conditioners	April 2017	1.1
Cooking Products	June 2017	1.1
Refrigerators and Freezers	September 2017	9.8
Fluorescent Lamp Ballasts	November 2017	Not analyzed
Dedicated Outdoor Air Systems	April 2018	Not analyzed
Computer Room ACs	April 2018	1.4
VRF ACs and Heat Pumps	April 2018	Not analyzed
Commercial Water Heaters	May 2018	0.5
Residential Clothes Washers	May 2018	3.0
Evaporatively-Cooled Commercial ACs	May 2018	Not analyzed
Water-Cooled Commercial ACs	May 2018	Not analyzed

115th Congress (2017-2018), HR 5895, "Energy and Water, Legislative Branch, and Military Construction and Veterans Affairs Appropriations Act, 2019," Title III – Department of Energy, Energy Programs, Energy Efficiency and Renewable Energy. https://www.congress.gov/bill/115th-congress/house-bill/5895/text.

[76] Using the EPA Greenhouse Gas calculator, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator, 70 million metric tons of carbon is the annual emissions from 8,382,230 households' energy use in a year. City household information was derived from the U.S. Census, https://www.census.gov/quickfacts/fact/table/philadelphiacitypennsylvania,houstoncitytexas,losangelescitycalifornia,newyorkcitynewyork/HSD410217

Metal Halide Lamp Fixtures	January 2019	0.8
Total		**69.1 MMT**

Furthermore, as discussed in the Appendix to my testimony, DOE failed to finalize standards completed, but not published, at the end of the Obama administration. Five of the final Obama administration energy-efficiency standards issued by DOE—standards for uninterruptible power supplies, portable air conditioners, air compressors, walk-in coolers, and commercial boilers—were issued in December 2016 but were not published in the *Federal Register*, the final step for them to be effective.[77] Due to these delays, NRDC and a coalition of states sued DOE, and in February 2018 a federal district court judge in the Northern District of California ruled that DOE had illegally delayed publication of these four standards and ordered DOE to publish them in the *Federal Register*.[78] DOE appealed this decision to the U.S. Court of Appeals for the 9th Circuit, which has stayed the district court's order pending the outcome of the appeal.[79]

DOE's action on consensus agreements (which can be developed when industry, efficiency advocates, government representatives, and other stakeholders work

[77] DOE has since published one of the five standards—for commercial walk-in coolers and freezers—in the *Federal Register*, but still has not yet published the remaining four delayed standards.
[78] *Nat. Res. Def. Council, Inc. v. Perry*, 302 F. Supp. 3d 1094, 1101 (N.D. Cal. 2018), *appeal filed*, No. 18-15475 (9th Cir. 2018).
[79] *Nat. Res. Def. Council, Inc. v. Perry*, No. 18-15475, 2018 U.S. App. LEXIS 9088, at *7 (9th Cir. Apr. 11, 2018).

together to establish energy efficiency standard levels) has been inconsistent. The Trump administration has added to the *Code of Federal Regulations* four energy-efficiency standards issued by the Obama administration DOE that were developed through a consensus process—for walk-in coolers and freezers, beverage coolers, residential central air conditioners and heat pumps, and swimming pool pumps. These standards were developed in 2015-2016 through a consensus process convened by DOE through its Appliance Standards and Rulemaking Advisory Committee to develop recommended standards for these products.

However, other standards developed through consensus for circulator pumps and pool pump motors remain in limbo. Importantly, the standard for pool pump motors closes a loophole in the separate swimming pool pump rule that must be fixed. In short, DOE required swimming pool pumps and pool pump motors to be addressed in two separate processes. The pump rule takes effect in July 2021, but only addresses new pump and motor combinations, not replacement motors. Industry and advocates submitted a joint proposal to DOE in August 2018 to fix the loophole and to set standards for pool pump motors, but DOE has not taken action to approve this proposal. Failure to also regulate replacement motors means that consumers who purchase even the most efficient variable speed pool pump on the market could unwittingly end up with an inefficient motor upon motor

replacement, which would immediately increase their utility bills by hundreds of dollars each year.[80] This is a common-sense fix which is fully supported by industry and efficiency advocates. DOE's continuing inaction means uncertainty and costs for manufacturers and higher bills for consumers.

B. DOE Action to Weaken the Energy Efficiency Standards Program

Even worse than inaction and delay on efficiency progress, DOE is currently taking steps that would drastically weaken the efficiency standards program. DOE is proposing to gut or even eliminate upcoming energy efficiency standards for light bulbs that Congress specified must go into effect in 2020. DOE is also proposing changes to the process it uses to set standards, which will dramatically slow the progress of the program and defer to the industry it regulates to make important program decisions. DOE is also considering a number of industry petitions which, if approved, would make detrimental changes to the program. NRDC is still reviewing the recent DOE proposals but offers the following initial reactions.

[80] Lauren Urbanek, *Pool Pump Motor Loophole Must Be Closed*, Natural Resources Defense Council, August 17, 2018, https://www.nrdc.org/experts/lauren-urbanek/pool-pump-motor-loophole-must-be-closed (accessed February 7, 2019).

1. DOE's Illegal Proposed Light Bulb Standard Rollback

In 2007, President George W. Bush signed into law the Energy Independence and Security Act (EISA), which was enacted by Congress with strong bipartisan support. As is explained in the Appendix to my testimony, *Energy Efficiency, Conservation and Fuel Switching in Buildings and Industry*,[81] EISA included several important and transformative provisions on lighting efficiency.

Specifically, EISA Section 321 established a two-tiered approach to strengthen the efficiency of general service lamps, i.e. the light bulbs commonly used for general illumination. First, EISA established initial energy efficiency standards for ordinary light bulbs, which required that bulbs use 25-30% less energy to produce the same amount of energy. As required by EISA, the first tier of the standards went into place between 2012 and 2014 and phased out the inefficient 100, 75, 60, and 40 watt common "pear-shaped" light bulbs. This process of phasing in the first tier of lighting standards was extremely smooth from a consumer perspective. Second, EISA Section 321 required DOE to revise the scope and strength of these standards via a rulemaking to be completed by January 1, 2017 and provided a legislative "backstop" second tier of stronger energy efficiency standards to go into effect on January 1, 2020 if DOE failed to act by the prescribed deadline or failed

[81] Supra n. 3 at 247-249.

to set a sufficiently strong standard. Because DOE didn't meet this deadline, EISA's Tier 2 "backstop" energy efficiency standards will go into effect on January 1, 2020, requiring that all general service lamps (GSLs, the regulatory term for everyday light bulbs) meet a minimum efficiency limit of 45 lumens per watt (LPW). ("Lumens" measure the amount of light produced and "watts" measure the amount of power used).[82] Under the 45 LPW standard, consumers will choose between efficient, long-lasting CFLs and LED bulbs as of January 1, 2020. Due to their superior performance, most consumers are likely to purchase LEDs. Because of their greater efficiency, LEDs typically save consumer around $50 to $100 over the bulb's lifetime. Similar to the Tier 1 experience, we expect a smooth transition to the Tier 2 standards, which are already in effect in California.

However, this progress is now threatened by DOE. In February 2019,[83] DOE announced a proposal to gut the scope of light bulbs covered by the upcoming federal 2020 Tier 2 energy efficiency standards, a change that will cost consumers up to $12 billion on their utility bills[84] and cause up to 25 more coal-burning power plants' worth of electricity to be generated every year. This extra electricity use,

[82] *Id.*
[83] *See* Lighting NOPR, *supra* note 22.
[84] Appliance Standards Awareness Project and American Council for an Energy-Efficient Economy, *US Light Bulb Standards Save Billions for Consumers But Manufacturers Seek a Rollback*, July 2018 https://appliance-standards.org/sites/default/files/light_bulb_brief_appendices.pdf (accessed February 7, 2019).

enough to power all the households in New Jersey and Pennsylvania, translates into 34 million tons of additional annual climate-changing CO_2 emissions. DOE's new proposal rolls back the definitions that were previously updated in early 2017 by DOE under the Obama administration.[85] The rollback will needlessly and illegally provide a lifeline for the inefficient incandescent and halogen bulbs designed to go into 2.7 billion sockets—just under half of all conventional sockets in the United States—even though more energy efficient models exist today.

Under DOE's proposal, inefficient types of 3-way bulbs, reflector bulbs used in recessed cans and floodlights, candle-shaped bulbs used in chandeliers and sconces, and globe bulbs typically used in bathroom lighting fixtures would be exempt from the upcoming Tier 2 federal standards established in EISA, despite the major loss of savings and even though efficient brands of these types of bulbs are widely available today.

If DOE succeeds in excluding the bulbs going into almost half of America's light sockets from the 2020 Tier 2 efficiency standards, a huge amount of money and energy will be wasted. And if this revised definition is adopted, the U.S. will be positioned to become the world's dumping ground for inefficient light bulbs, as

[85] *Id.*

they have already been phased out throughout Europe and elsewhere with similar phaseouts planned in many developing countries.

Finally, DOE staff recently suggested at a public hearing that it has a new legal theory that somehow it can delay or prevent Congress' Tier 2 "backstop" lighting standards from going into effect in 2020, contrary to the plain language of EISA Section 321. Under DOE's new theory, if finalized, the 2020 Tier 2 EISA standards will not apply to even the common pear-shaped light bulbs, thus wiping out all of the savings from the standards required in EISA. DOE must not be allowed to rewrite the law that Congress enacted.

2. Unnecessary and Harmful Proposed Changes to the DOE "Process Rule"

DOE has in February 2019 also formally proposed changes to its Process Rule, which is DOE's guidance on the steps to be taken to the process of establishing energy efficiency standards.[86] NRDC has no issue with DOE reviewing and updating its procedures, as long as DOE follows the law, improves predictability, and makes the rulemaking process more easily understood while not hamstringing one of the most successful federal energy-saving initiatives.

[86] Process Rule NOPR, *supra* n. 24.

However, DOE is doing none of the above. Instead, the proposed revisions to the Process Rule will make it more difficult to set strong standards in a timely manner and will make the rulemaking process needlessly more complex. With the challenge of climate change, every bit of progress counts; this is another example of DOE moving in the wrong direction.

The Process Rule – despite its name -- is guidance the agency sets for itself, not a law or binding regulation.[87] DOE still must follow the law when it comes to implementing and updating energy efficiency standards. A guidance document can't justify or stand in the way of an agency to meet its statutory obligations—and yet, the changes DOE proposes will no doubt slow the process and make it more difficult for DOE to complete standards in the time frame mandated by Congress.

The proposed changes are extensive and far-reaching. We highlight a few of the most detrimental below, though this list is far from comprehensive. It is unclear at this point how all of the proposed process changes will work together. What is clear, however, is that implementing the proposed changes will hamper the

[87] 10 C.F.R. § 430, Subpart C, Appendix A, Procedures, Interpretations, and Policies for Consideration of New or Revised Energy Conservation Standards (describing the Process Rule as "guidance" and "guidelines").

efficiency standards program at a time when it's never been more important, making energy and carbon savings significantly more difficult to achieve.

Additional unneeded steps and requirements

The process DOE uses to set standards has been working well for decades, giving manufacturers predictability for their product development while enabling the standards program to produce massive amounts of consumer energy savings. DOE proposes to set additional, seemingly unnecessary requirements for itself, including changes to how and when procedures for measuring the efficiency levels of appliances and equipment are completed, additional reviews the agency must go through before it even decides to set a standard, and higher hurdles a proposed standard must pass before it can be considered for adoption by the agency.[88]

Defining a "significant" energy-savings threshold

Under the law, DOE may not set a new or amended standard that does not "result in significant conservation of energy." While the definition of "significant" is not specified by Congress, this issue was litigated and decided in *NRDC v. Herrington* in the late 1980s, as discussed earlier.

[88] Process Rule NOPR, *supra* note 23, at 3910.

DOE now proposes to set an arbitrary threshold of savings of either 0.5 quads, or a 10 percent improvement in efficiency, over 30 years, which standards must meet to be considered "significant."[89] While some standards save more than others, the savings from smaller standards add up. Had a .5 quad limit been in place to date, consumers and businesses would have missed out on more than 4 quads of energy savings.[90] As noted previously, the entire U.S. economy uses 100 quads of energy each year, and the emissions from power plants that generate that energy are a prime contributor to climate change. Setting the proposed savings limit is completely contrary to the direction that the country—and the world—need to go to avoid the worst impacts of climate change. DOE seems to be ignoring the lessons from the *Herrington* decision, where the D.C. Circuit rejected DOE's overly stringent savings thresholds that would have needlessly blocked energy efficiency savings.[91]

Changes to test procedures

DOE also proposes to finalize test procedures, which are used to measure the efficiency of products, at least 180 days prior to the publication of a proposed new or amended standard for those products.[92] It is certainly a good goal to figure out

[89] *Id.* at 3924.
[90] *Id.* at 3923.
[91] *See NRDC v. Herrington*, *supra* note 64.
[92] Process Rule NOPR, *supra* n. 24, at 3926.

how to test the efficiency level of a product before starting to set a standard. However, this change gives DOE less flexibility and opens up the test procedure development process—which is highly technical and should be based on significant input from industry and advocacy groups like NRDC and other stakeholders—to becoming a potential mechanism for delaying the development of standards indefinitely.

Even more concerning is the requirement that DOE proposes to adopt, without modification, industry standards as test procedures, with exceptions for certain circumstances.[93] DOE is giving away one of its most important powers and putting it in the hands of the industry that it is tasked to regulate. There's nothing wrong with using industry test procedures as a starting point, but DOE must maintain the final say to maintain the integrity of the standards program.

3. Industry Petitions

DOE also is currently considering petitions submitted by industry and anti-regulatory groups to make detrimental changes to the standards program. If approved, these petitions would enact changes that make it impossible for DOE to

[93] *Id.* at 3926-27.

set standards to save significant amounts of natural gas;[94] set special, unnecessary standards for dishwashers with short cycle times;[95] withdraw test procedures for stoves and ovens;[96] and prevent DOE from enforcing a standard for furnace fans that takes effect in July 2019.[97] DOE has acted swiftly to move these damaging petitions along while missing deadlines, ignoring its statutory obligations, and failing to act on consensus standards that would generate additional carbon, consumer, and energy savings.

VI. CONCLUSION

To avert the worst impacts of climate change, the United States must accelerate action on all fronts and in particular, must accelerate energy efficiency. The DOE energy efficiency standards program has long been one of the most effective tools in reducing U.S. greenhouse gas emissions. But instead of moving forward, DOE is putting the brakes on and indeed moving into reverse at the worst possible moment. Going forward, DOE should fulfill its statutory obligations to issue energy efficiency standards and should act to strengthen its energy efficiency standards program. This will be critical not only to limiting climate change, but also to protecting consumers and especially low-income consumers.

[94] 83 Federal Register 54883 (Nov. 21, 2018).
[95] 83 Federal Register 17768 (April 24, 2018).
[96] 83 Federal Register 17944 (April 25, 2018).
[97] 83 Federal Register 56746 (Nov. 14, 2018).

First and foremost, DOE must get back on track where it has missed deadlines. The Appliance and Equipment Standards Program is fully funded and DOE has its professional staff and experts at the national labs at their disposal to conduct research and analysis and develop proposals. There is no excuse for DOE's failure to meet its statutory obligations to promulgate regulations, which are, in any event, binding in all circumstances. There are many steps that DOE takes before issuing a proposed standard, including data gathering, market analyses, and issuing requests for information. The DOE could have been doing this work without interruption throughout the course of the Trump administration, and yet it has chosen not to. DOE must work to meet its missed deadlines and get the efficiency standards program back on schedule at haste. This is not discretionary: Congress is exceptionally clear in its directives to DOE about the program.

Research and development are also crucial components of long-term success. DOE must invest in research and development to support the next generation of efficiency standards. Thankfully, there has been strong bipartisan support in Congress for clean energy innovation, despite recent proposals from the administration to make dramatic cuts to DOE funding. It is essential for Congress to continue defending existing DOE funding, and in fact funding should be increased two- to three-fold to accelerate progress. Efficiency solutions for

buildings, including advances in appliances, equipment, and lighting, must be one of DOE's strongest focuses. Other recommendations for how Congress and DOE should strengthen the efficiency standards program are described in the Appendix to my testimony, *Energy Efficiency, Conservation and Fuel Switching in Buildings and Industry*.[98]

In sum, DOE must concentrate its efforts on strengthening the standards program, not delaying its progress and moving it backward. Thank you again for the opportunity to testify today. I'm happy to answer any questions.

[98] *See* Appendix, *supra* n. 3, *Chapter 9, Legal Pathways to Deep Decarbonization in the United States, Lighting, Appliances and Other Equipment, Section III A.2,* at 233-238.