Testimony of
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U.S. House of Representatives
Committee on Energy and Commerce
Subcommittee on Energy and Power Hearing on
"Home Appliance Energy Efficiency Standards Under the Department of Energy – Stakeholder Perspectives"

June 10, 2016

Testimony on behalf of Natural Resources Defense Council

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to share the perspective of the Natural Resources Defense Council (NRDC) on national energy efficiency standards for appliances and equipment, a program that serves to increase the energy efficiency of appliances and equipment as a means to save money, promote job growth, and cut carbon pollution. My name is Elizabeth Noll and I am the Legislative Director for the Energy and Transportation Program at NRDC.

IN BRIEF:

NRDC is a national, non-profit environmental organization with more than 2 million members and activists. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment. NRDC's top institutional priorities include curbing global warming and

creating a clean energy future. NRDC has long advocated for energy efficiency as a critical component in meeting our energy demands and climate goals, now and in the future.

NRDC has spent decades working to build and improve the Department of Energy's (DOE) federal appliance standards program because of the important energy, environmental, and consumer benefits of appliance efficiency standards. NRDC participated in the enactment of the first federal legislation establishing efficiency standards and has been active in all significant rulemakings since then.

National energy efficiency standards set by the U.S. Department of Energy (DOE) for more than 50 types of household appliances and commercial products in our homes, businesses, and industries set a dependable minimum level of energy efficiency that all Americans can count on to reduce energy and lower their utility bills.

And by all measures this program has been widely successful: National appliance standards are already saving the typical U.S. household about $500 per year on utility bills.[1] In 2015 alone, American consumers saved $63 billion on their utility bills.[2] Taking into account appliances and equipment sold through 2035, consumers and businesses will save almost $2 trillion thanks to standards already on the books today.[3]

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[1] Press release, Appliance Standards Awareness Project, Appliance Standards Rank #2 as Energy-Saving Tool in US (Apr. 6, 2016), *available at* http://www.appliance-standards.org/documents/asap-press-releases/appliance-standards-rank-2-energy-saving-tool-us.

[2] Office of Energy Efficiency & Renewable Energy, U.S. Dep't of Energy, Saving Energy and Money with Appliance and Equipment Standards in the United States (2009), *available at* http://energy.gov/sites/prod/files/2016/02/f29/Appliance%20Standards%20Fact%20Sheet%20-%202-17-2016.pdf.

[3] Ibid.

National appliance standards are the second-biggest energy savings initiative in US history, second only the vehicle fuel economy standards for cars.[4] In 2015 alone, national appliance standards helped the U.S. avoid emissions of 300 million tons of carbon dioxide, which is equivalent to the annual CO2 emission from about 63 million automobiles. Standards enacted since 2009 are projected to cut carbon emissions by 2.3 billion metric tons by 2030.[5]

These products include everything from common household appliances like refrigerators and air conditioners to commercial and industrial equipment like electric motors and distribution transformers. The program's history reveals strong bipartisan support for energy efficiency standards. In 1987 President Ronald Reagan signed the first federal law establishing energy efficiency standards; President George W. Bush signed legislation strengthening the program in 2005 and 2007; and President Barack Obama has made efficiency standards one of the cornerstones of his energy strategy.

Innovation keeps opening up new, cost effective pathways for savings energy. There is still much more to do. For the first time since the early 1990s, the DOE is meeting the legal deadlines Congress set for issuance of new standards. The impressive consumer and energy savings that will be achieved through recently approved standards also shows that we are far from the exhausting the potential for savings energy. For example, the Department recently finalized the largest energy and pollution saving standard in the

[4] Press release, Appliance Standards Awareness Project, Appliance Standards Rank #2 as Energy-Saving Tool in US (Apr. 6, 2016), *available at* http://www.appliance-standards.org/documents/asap-press-releases/appliance-standards-rank-2-energy-saving-tool-us.

[5] Office of Energy Efficiency & Renewable Energy, U.S. Dep't of Energy, Saving Energy and Money with Appliance and Equipment Standards in the United States (2009), *available at* http://energy.gov/sites/prod/files/2016/02/f29/Appliance%20Standards%20Fact%20Sheet%20-%202-17-2016.pdf

history of the program, supported by industry and advocates alike, for commercial rooftop air-conditioners.[6]

We know efficiency is not fully achieved on its own; for example, beginning in 1947 electricity use from each refrigerator rose year over year until the first standard was set in 1978. There was simply no incentive for efficiency as the market encouraged design changes that saved money up front even if they ended up costing customers much more over the life of the product. Since then refrigerator electricity use has fallen precipitously all while providing the same or higher level of product performance. A new refrigerator meeting the latest standard uses about a quarter of the energy of its 1973 counterpart, offers 20 percent more storage and costs about half as much. This improvement would not have happened had the government not set minimum standards.

We know consumers want and support minimum efficiency standards; and we know manufacturers continue to innovate and rise to meet these standards while delivering the same or better performance and options. By all accounts, the U.S. is a global leader on efficiency. Thanks to the appliance standards programs Americans enjoy the best, most efficient appliances and equipment including heating and air-conditioning, lighting, and many others. Congress and the Department of Energy have played a critical role in this process. By setting minimum standards, it will save customers trillions of dollars and cut carbon emissions, while in a manner that allows manufacturers the flexibility to innovate and make better products.

FURTHER DISCUSSION:

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[6] Meg Waltner, *DOE Issues Biggest Energy Saving Standard Yet for Roof Top Air Conditioners*, NRDC (Dec. 17, 2015), https://www.nrdc.org/experts/meg-waltner/doe-issues-biggest-energy-saving-standard-yet-roof-top-air-conditioners.

One of America's most successful energy policies has been quietly delivering significant energy bill savings for consumers, sparking innovation and jobs, reducing the need to build new power plants, and cutting pollution that harms our health for nearly four decades. The U.S. Department of Energy's (DOE) Appliance and Equipment Standards Program today sets a basic minimum level of energy efficiency for more than 50 types of products in our homes, businesses, and industrial facilities. Ranging from common household appliances like refrigerators and air conditioners to commercial and industrial equipment like electric motors and distribution transformers, products covered by efficiency standards represent:

- 90 percent of home energy use;
- 60 percent of the electricity used in commercial buildings; and
- Approximately 30 percent of industrial energy use.[7]

And making our energy use smarter by increasing the efficiency of our appliances and equipment is the cheapest, cleanest, and quickest way to meet our power needs. Efficiency is a critical tool for meeting America's energy demands while reducing emissions from climate-changing pollution, both now and in the future. National energy efficiency standards provide the critical benefit of a uniform national regulatory environment, preventing a patchwork of different state standards that can be disruptive to business, and in many cases, manufacturers may find it beneficial and lucrative to offer products that exceed the minimum efficiency and produce even more energy savings.

Appliance Standards History – 40 years of success

[7]Office of Energy Efficiency & Renewable Energy, U.S. Dep't of Energy, Saving Energy and Money with Appliance and Equipment Standards in the United States (2009), *available at* http://energy.gov/sites/prod/files/2016/02/f29/Appliance%20Standards%20Fact%20Sheet%20-%202-17-2016.pdf

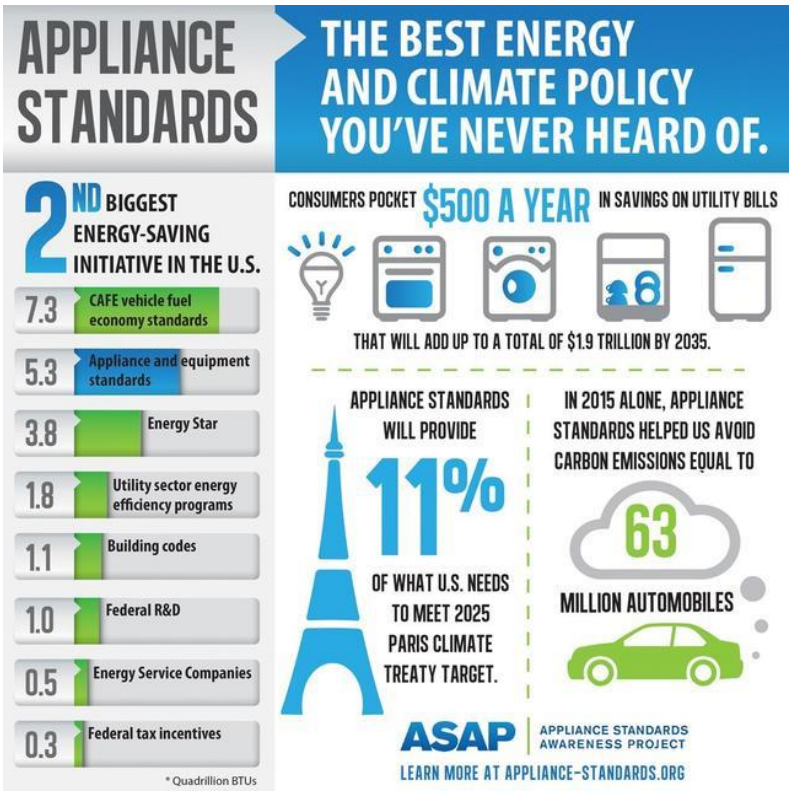
Appliance efficiency standards have been among the most effective government energy efficiency policies. Starting in the 1970s, Congress first authorized and then required the Department of Energy (DOE) to set minimum efficiency standards for energy-using equipment. With DOE making very slow progress, Congress intervened and established a dozen standards in the National Appliance Energy Conservation Act of 1987 (NAECA) along with a firm schedule for future updates at the "maximum level of energy efficiency…which is technologically feasible and economically justified." Subsequent federal laws including the Energy Policy Act of 1992, the Energy Policy Act of 2005, and the Energy Independence and Security Act of 2007, which were signed by Presidents Ronald Reagan, George H.W. Bush, and George W. Bush, respectively, expanded the number of products covered and many elements of the program.

Data from the Appliance Standards Awareness Project (ASAP) shows that U.S. appliance standards program is the second largest energy efficiency savings policy—saving 5.3 quadrillion BTUs (quads) of energy in 2014.[8] This puts savings from efficiency standards ahead of other important programs like Energy Star program, utility sector energy-efficiency programs, and federal tax incentives. Since President Ronald Reagan signed the original national appliance standards into law, savings from standards have grown in 2015 to reach 13 percent of electricity consumption and 4 percent of natural gas consumption.[9] As old equipment is replaced and new, more efficient appliances are installed, the full benefits of existing standards will continue to be realized for many years to come. Savings

[8] Press release, Appliance Standards Awareness Project, Appliance Standards Rank #2 as Energy-Saving Tool in US (Apr. 6, 2016), *available at* http://www.appliance-standards.org/documents/asap-press-releases/appliance-standards-rank-2-energy-saving-tool-us.

[9] Ibid.

from these standards will grow to 20 percent of projected electricity consumption and 6 percent of projected gas usage by the year 2030.[10]



Already, the energy saved through appliance standards in 2015 was enough electricity to meet the needs of 43 million homes (1/3 of current U.S. households) and enough natural gas to meet the heating needs of about 10 million U.S. homes. These energy savings helped American consumers collectively save $63 billion on their utility bills in 2015 alone. The typical U.S. household will save about $500 per year on utility bills thanks to standards. Taking into account appliances and equipment sold through 2035, consumers and businesses will save more than 1.9 trillion dollars because of standards already on the books today.[11]

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[10] Ibid.

[11] Office of Energy Efficiency & Renewable Energy, U.S. Dep't of Energy, Saving Energy and Money with Appliance and Equipment Standards in the United States (2009), *available at*

In 2015 alone, appliance standards helped the U.S. avoid emissions of 300 million tons of carbon dioxide pollution, which is equivalent to the annual carbon dioxide pollution emitted by about 63 million automobiles. Annual carbon emission cuts in 2030 from standards completed since 2007 will reach about 220 million metric tons, or about a quarter of the emissions reductions expected from the administration's Clean Power Plan.[12]

Frequently Asked Questions:

Where would we be if there were no appliance standards?

Without federal appliance standards, cost-effective energy efficiency opportunities would be lost, leading to unnecessarily high energy bills, increased energy consumption, and more harmful pollution, and uncertainty for manufacturers. The evidence is overwhelming that without appliance standards the market fails to promote appropriate efficiency levels, costing consumers more over the life of their appliances, increasing energy demands and increasing pollution levels. This is because of numerous market barriers that prevent consumers from making optimal choices about the efficiency of the appliances they buy, absent minimum standards. Even though any incremental cost of more efficient appliances is paid back and then some through energy bill savings over the life of the product, these market barriers prevent these savings from being achieved. A classic example is the "split incentives" that exist between landlords and tenants. For instance, when a landlord is buying a new furnace, he or she will focus on the initial price that the landlord is

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http://energy.gov/sites/prod/files/2016/02/f29/Appliance%20Standards%20Fact%20Sheet%20-%202-17-2016.pdf.

[12] Press release, Appliance Standards Awareness Project, Appliance Standards Rank #2 as Energy-Saving Tool in US (Apr. 6, 2016), *available at* http://www.appliance-standards.org/documents/asap-press-releases/appliance-standards-rank-2-energy-saving-tool-us

responsible for, rather than the tenant's cost of operating the furnace. The result is a cheap inefficient furnace and higher energy bills for the tenant. Information costs and time-pressure can also lead to selection of products that fail to provide a good, cost effective level of efficiency. For example, a homeowner may not have the time to research a new water heater's long-term cost of ownership when the old one breaks; instead the homeowner will often need to take whichever one is on the repairman's truck. By setting minimum energy-savings levels for these and other products, standards help capture at least minimum cost-effective energy efficiency opportunities that might otherwise be missed.

Nation-wide energy efficiency standards create certainty and predictability for manufacturers. Rather than having to meet a patchwork of state-level efficiency standards, manufacturers can focus on meeting one national efficiency standard, which saves costs and increases competitiveness. In addition, standards cover all products sold in the country, regardless of where they are manufactured. Standards ensure that American manufacturers can compete on a level playing field with foreign manufacturers, and that the market is not flooded with low-quality products. And this is without any loss to consumer utility. Through innovation, our manufacturers continue to make more efficient products that provide appliances that deliver equal – or in many cases substantially improved – quality to consumers.

Without standards:

- Appliances would use more energy than they do today—in fact, since 1990,
    - New clothes washers use 70 percent less energy;
    - New dishwashers use more than 40 percent less energy; and

    - New air conditioners use about 50 percent less energy.[13]
- You'd be paying about $500 more a year to power the appliances and lights in your home.[14]
- There would be added strain on the power grid on hot summer days, leading to more frequent power black outs.
- There would be even more asthma-trigger ozone, more soot and more greenhouse gas pollution in our air.

Can we expect future savings from the appliance efficiency program to continue at a similar rate as we have achieved in the past?

Yes. Innovation keeps opening up new, cost effective pathways for savings energy. A forthcoming report by ASAP and ACEEE finds that the next round of updates for existing standards has the potential to save more than has been accomplished over the past eight years.

Recent progress also shows that we are far from the exhausting the potential for savings energy. Just last year DOE formally adopted a negotiated efficiency standard for commercial rooftop air conditioners, heat pumps and warm air furnaces that together, represent the most energy and pollution savings under any energy-saving rule issued since the DOE standards program began in 1987. In fact, new equipment shipped over the next 30 years that complies with this standard will save 15 quadrillion BTU (quads) of energy, which is nearly equivalent to the amount of energy in all of the coal burned to generate

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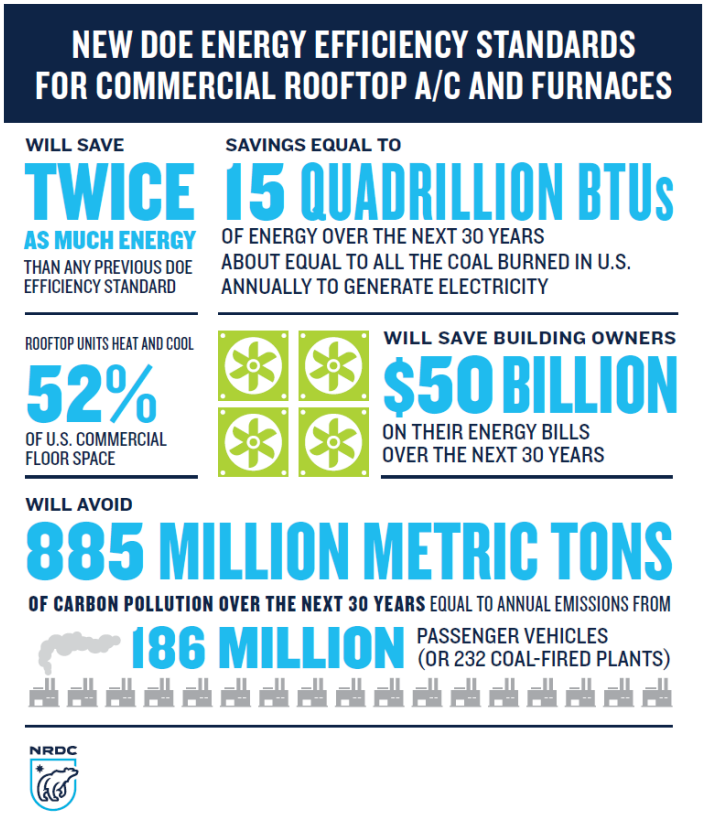
[13] Office of Energy Efficiency & Renewable Energy, U.S. Dep't of Energy, Saving Energy and Money with Appliance and Equipment Standards in the United States (2009), *available at* http://energy.gov/sites/prod/files/2016/02/f29/Appliance%20Standards%20Fact%20Sheet%20-%202-17-2016.pdf

[14] Press release, Appliance Standards Awareness Project, Appliance Standards Rank #2 as Energy-Saving Tool in US (Apr. 6, 2016), *available at* http://www.appliance-standards.org/documents/asap-press-releases/appliance-standards-rank-2-energy-saving-tool-us

electricity in the United States in a year.[15],[16] To put in context, that's enough energy savings to offset the carbon emission from more than 120 million U.S. homes for a year.



Further, this was the third time the standard for commercial AC has been revised. Commercial AC standards were first set in 1992, revised in 2005, and revised again last year. While the standard that was finalized last year is going to save a significant amount of energy and is hugely cost-effective, the standard is not even come close to the most energy-

[15] Meg Waltner, *DOE Issues Biggest Energy Saving Standard Yet for Roof Top Air Conditioners*, NRDC (Dec. 17, 2015), https://www.nrdc.org/experts/meg-waltner/doe-issues-biggest-energy-saving-standard-yet-roof-top-air-conditioners;

[16] U.S. Dep't of Energy, Energy Department Announces Largest Energy Efficiency Standard in History (Dec. 17, 2015), *available at* http://energy.gov/articles/energy-department-announces-largest-energy-efficiency-standard-history.

efficient AC commercially available, suggesting there is even more room for savings in the future.

DOE keeps breaking their own records. In 2009, DOE finalized an efficiency standard for fluorescent lights that at the time represented the most energy savings from a single rule. DOE matched that in 2014 with an efficiency standard for motors. And the standard for commercial rooftop air conditioners saves more energy than both of these record-breaking standards, combined.

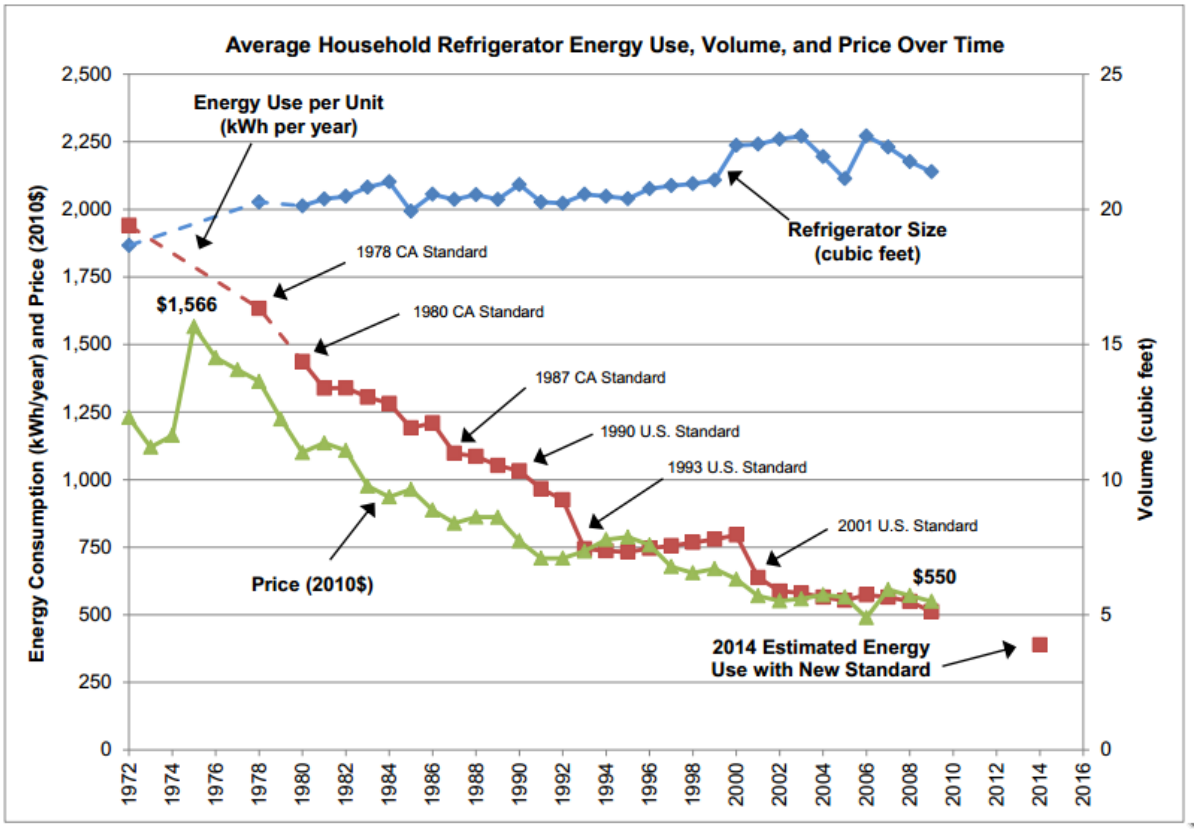
Through their continued engineering innovation, our manufacturers have ensured that products continue to get better as they also get more efficient. And DOE has ensured that consumer utility and product performance will not be impaired as it considers in the development of new standards, and that will continue to be the case as the program moves forward. NRDC has long advocated including these criteria when appropriate. For example in the ENERGY STAR specification for dishwashers, NRDC emphasized the importance testing and reporting cleaning performance. NRDC strongly supports testing cleaning performance to ensure that all new Energy Star-labeled dishwashers continue to perform their essential functions at levels that meet customer satisfaction. When it established the Department of Energy's standards program, Congress ensured that the Department consider consumer utility by specifying that the Secretary should consider, among other factors, "any lessening of the utility or the performance of the covered product likely to result from the imposition of the standard."[17]

Do new appliance and equipment efficiency standards make products more expensive?

[17] 28 U.S.C. § 6295(o)(2)(B)(i)(IV) (2015).

The federal appliance efficiency program is designed to provide manufacturers with ample lead-time and certainty on the minimum efficiency levels for the products they make. This allows manufacturers to implement improvements and innovations at their production facilities in coordination with updated standards. As a result, manufacturers make better products and the energy savings often come at lower cost than estimated. When setting standards, the Department carefully considers the potential increase in up-front product costs, including these costs in its analysis of consumer and manufacturer impacts.

An analysis by the American Council for an Energy-Efficient Economy (ACEEE) and the Appliance Standards Awareness Project (ASAP) evaluated the predicted manufacturer price increase for standards with the actual price increase for nine major product standards including standards for refrigerators, clothes washers, water heaters, air conditioners, and fluorescent lamp ballasts. For all products the analysis found that the actual price increase was less than the predicted price increase, with the difference often substantial, and in four of the nine cases prices actually declined over the period analyzed. Take refrigerators as an example: Before the standard was established, refrigerators were using more energy year after year. Since their efficiency standards were first set, refrigerators have gotten bigger, quieter, and now include additional features. A new refrigerator meeting the 2014 efficiency standard uses only about a quarter of the energy of its 1973 counterpart, offers 20 percent more storage, and costs half as much.



Has DOE increased stakeholder input and collaboration?

Yes. There has been more collaboration than ever before and every industry and trade association has been involved at some point in building that consensus. Of the 42 final rules[18] issued by DOE since 2009, almost a quarter of the rules are the result of negotiated consensus agreements. Those that were not completed through a consensus process were completed through the normal rulemaking process, and with the exception of a handful, without controversy.

[18] U.S. Dep't of Energy, Appliance and Equipment Standards Program, http://energy.gov/eere/buildings/appliance-and-equipment-standards-program (last visited Jun. 8, 2016).

Historically, and through the beginning of the Obama administration, most standards negotiations were privately held and comprised of only a few select participants. This was the case, for instance, in a multi-product negotiation over minimum standard levels for refrigerators, freezers, clothes washers, dryers, dishwashers and room air conditioners finalized in 2009. While private negotiations between individual parties can certainly be effective, there are times when it is beneficial to bring a broad group of stakeholders and DOE together to jointly negotiate efficiency standards. In 2014, DOE established the Appliance Standards Regulatory Advisory Committee (ASRAC) in an effort to further improve the DOE's process of establishing energy efficiency standards for certain appliances and commercial equipment. The creation of ASRAC also formalized a process for negotiated consensus rulemaking for the first time.

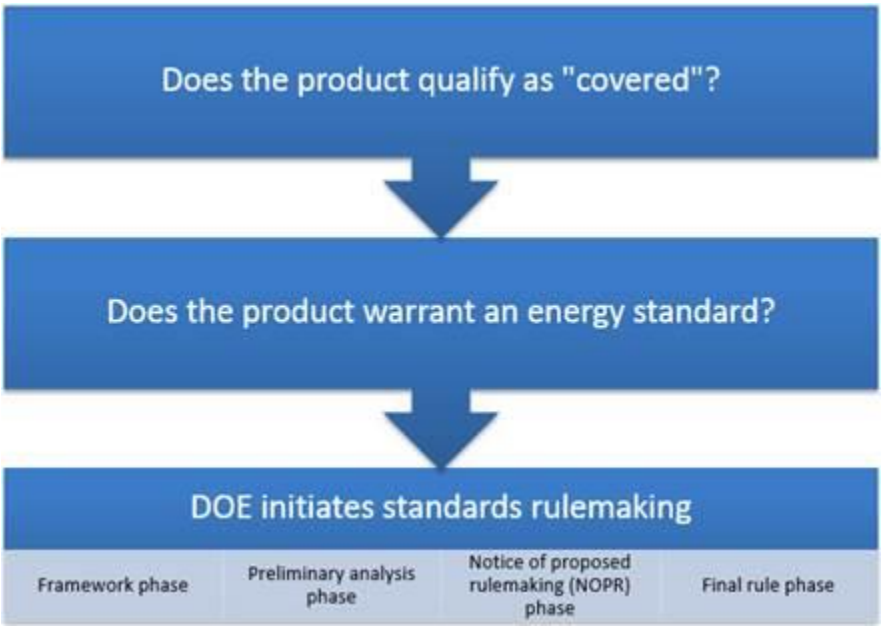
ASRAC is a discretionary advisory committee that provides advice and recommendations related to the development of standards and test procedures, standards enforcement, product labeling, and other issues of concern. Its 13 members consist of manufacturers, state government, consumer groups, and efficiency advocates. Specifically, ASRAC provides DOE a tool to engage interested parties, convene working groups, gather data and work toward developing consensus standards. The ASRAC working group recommendations are considered by DOE when developing the final standards. The use of the negotiated rulemaking structure means that standards can have more buy-in from a representative group of stakeholders. This "reg neg" process has now been used for 11 topics, some of which are still underway, which is further explained below.

Of course, the agency is busier than they have ever been before, meeting all of its legal deadlines set by Congress for the first time since George H. W. Bush was president. While

DOE seeks to engage stakeholders throughout the process and is responsive to input received by all stakeholders, the authority granted to them by Congress is to set standards independent of consensus. The agency has done more than ever to open up avenues for negotiation and public participation, as evidence by the ASRAC process, but also through requests for information, workshops, and standard public meetings.

As with any type of federal rulemaking, occasionally DOE efficiency rules are challenged in court. However, this is the exception rather than the rule. During the Obama administration there have been five contested final rules out of the 42 rules finalized, representing less than 12 percent of final rules. As well, this is part of the process that allows stakeholders to raise concerns and seek relief as they see fit.

In general, how does the standard-setting process work at the Department of Energy?



Determining that a product is covered under the provisions of EPCA is necessary before a standard can be established. The flow chart above provides a helpful way to think about the standards process, but note that DOE often starts their analysis of a product before a determination of coverage is made. DOE must also determine whether a particular piece of equipment warrants a minimum energy efficiency standard, by analyzing the following:

1. average energy use of the product,
2. the total energy use of the product across the country,
3. whether a substantial improvement in energy efficiency is technologically feasible, and
4. whether a labeling rule (rather than a full-blown energy standard) would be sufficient to induce the maximum energy efficiency.

DOE's notice of proposed rulemaking, the next major step in the rulemaking process, will include DOE's proposals for minimum efficiency standards. Rulemakings take about three years to complete and generally consist of four phases: framework, preliminary analysis, notice of proposed rulemaking (NOPR) and final rule. The **framework phase** is the first step in this process, and sets up the basic outline for the rulemaking. DOE also seeks feedback on specific questions in this phase, which is then fed into the **preliminary analysis phase**. In this phase, DOE gathers data and information about the technical, economic, and market characteristics of the product, and makes initial determinations of possible efficiency improvements. DOE then takes public feedback on their analyses and issues a **Notice of Proposed Rulemaking**, which includes a proposed efficiency level that is both technologically feasible and economically justified. Taking into account additional

public comment on the proposal, DOE issues a **final rule**, which generally goes into effect within 3-5 years.

How else can stakeholders engage in the process?

Stakeholder feedback is crucial to the standards-creation process. Interested stakeholders may engage in the standards development process in one or a combination of the following ways:

(a) Participate in public meetings or webinars: DOE releases information about all public meetings and opportunities for comment in the Federal Register and through their public email listserv. Meetings are also broadcast as webinars and are open to the public, with the opportunity for public comment.

(b) Access documents related to the standards rulemaking at Regulations.gov: All documents related to the rulemaking for a particular standard can be found on Regulations.gov, including proposed and final rules (as applicable), stakeholder comments, public meeting transcripts, and other supporting information. DOE has links to the dockets for all of the covered products, as well as those in process, on the Appliance and Equipment Standards section of their website (http://energy.gov/eere/buildings/appliance-and-equipment-standards-program). The DOE website also has a wealth of other procedural and background information that is useful for stakeholders looking to engage in the process.

(c) Submit comments to the docket as part of the rulemaking process: DOE welcomes public comments at multiple stages of the rulemaking process, and carefully considers all comments received. Detailed information about submitting comments is found in DOE Notices, on the Appliance Standards section of the DOE website, and in the Federal Register.