Subcommittee on Energy
Hearing on
"Saving Energy: Legislation to Improve Energy Efficiency and Storage"
February 12, 2020

Questions for the Record Submitted to the Honorable Mark W. Menezes
Under Secretary
U.S. Department of Energy

QUESTIONS SUBMITTED BY THE HONORABLE PETER WELCH (D-VT)

Q1. Under Secretary Menezes, in response to questions, you said the administration had inherited the problem of missed deadlines for appliance standards. How many deadlines for energy conservation standards had already been missed when the current administration took office? Additionally, how many have been missed as of February 2020?

A1. The appliance standards program has historically been late in meeting its statutorily required rulemaking obligations. Since 1989, in more than 60 rulemakings subject to statutory deadlines, the Department has issued the required rule on time only six times. During that same time period, the Department has on average, nearly 15 outstanding deadlines each year relating to energy conservation standards. Over the 32 years starting in 1989 through 2020, only four years had fewer than five outstanding deadlines, and three of those years were 1989-1991. In calendar year 2020, DOE is at about the annual average for outstanding deadlines.

DOE is subject to two kinds of statutory deadlines. The first are those in which Congress sets an initial standard in law and directs the Department to review that standard, usually three to five years after the statutory standard is enacted. Second, DOE is required by statute to consider whether to amend the existing standards for a given product at least once every six years. The Energy Policy and Conservation Act also generally requires a three- to five-year compliance lead time after DOE publishes a final rule setting a new standard.

The nature of the standards rulemaking process is that data must be collected and analyzed to determine whether a new standard is justified, and if so, what that standard might be. Typically, there is no new data available until the market has adjusted to the previous rulemaking. Given the statutorily-prescribed three- to five-year lead-time period before compliance with a new standard is required, market adjustment to the

previous standard generally does not happen until many years after issuance of the last standards rulemaking. The problem is that the data gathering and analysis required for DOE to consider whether new standards are justified, as well as the public participation requirements specified in EPCA for the promulgation of a rule that DOE has found are invaluable to the standards development process, simply cannot fit within a statutory timeframe for rulemaking that requires a decision to be made before the data are available. As a result, the Department will always be in the position of missing statutory deadlines so long as the law requires that decision in six years or less.

Nevertheless, DOE is conscious of the requirements and continually strives to responsibly undertake the required rulemakings while ensuring that meaningful improvements are proposed and published through a robust public process.

To address the timing problem (to the extent possible within the existing law), DOE issued a final rule that would streamline and modernize its process for setting energy efficiency standards and test procedures. The "Process Rule" improves EERE's internal framework for establishing new energy efficiency regulations, with the goal of increasing transparency, accountability, and certainty for stakeholders. The Process Rule substantially changes the agency's process for setting energy efficiency standards and test procedures for residential appliances and commercial equipment. Among other things, the changes include:

- Establishing a threshold for "significant" energy savings at 0.3 quads of site energy over 30 years, or, if less than that amount, a 10 percent improvement over existing standards. Congress requires DOE to regulate only where doing so would save significant energy, but this term is not currently defined by Congress.
- DOE established the 0.3 quads threshold after conducting an analysis which found that over the last three decades, 60% of standards were projected to save 0.3 quads or

more over 30 years, and those 60% of standards accounted for 96% of total energy savings. The other 40% of standards, projected to save less than 0.3 quads, accounted for just 4% of total energy savings.

- Establishing a threshold of significant energy savings at 0.3 quads is grounded in rigorous analysis and will allow DOE to focus on standards projected to provide by far the largest return on investment for the American people.

DOE is striving to meet its legal obligations under the Appliance Standards Program and has made substantial progress to address missed deadlines. As the following summary shows, DOE's progress on appliance standards has accelerated since 2019, and the Department plans to take action on numerous test procedures and energy conservation standards in the next 12 months, including multiple proposed and final rules, all of which will make strides in clearing out the current backlog.

- Since January 1, 2019, DOE has published 40 notices relating to energy conservation standards, including eight final rules. (current as of June 19, 2020).
- Since January 1, 2019, DOE has published 22 notices relating to test procedures. (current as of June 19, 2020).
- In the next 12 months, DOE plans to issue 45 notices related to energy conservation standards, including 6 final rules.
- In the next 12 months, DOE plans to issue 48 notices relating to test procedures, including 10 final rules.

Q2. During your testimony, you cited 7 final rules issued in the past year. Please provide details on each of those seven final rules including whether they resulted from a court order. Please also specify which final rules increased energy efficiency standards.

A2. The table below lists the requested information.

Rulemaking Name	Publication Date	FR Citation	Court Order	Increased Efficiency
Process Improvement Rule	2/14/2020	85 FR 8626	No	No

Commercial Packaged Boilers	1/10/2020	85 FR 1592	No*	Yes
Compressors	1/10/2020	85 FR 1504	No*	Yes
Uninterruptable Power Supplies	1/10/2020	85 FR 1447	No*	Yes
Portable Air Conditioners	1/10/2020	85 FR 1378	No*	Yes
General Service Incandescent Lamps	12/27/2019	84 FR 71626	No	No
General Service Lamps	9/5/2019	84 FR 46661	No	No
External Power Supplies	1/29/2019	84 FR 437	No	No

* The rule did not result from a court order, though publication was ordered by a court.

Q3. In response to a question from Subcommittee on Energy Chairman Bobby L. Rush, you suggested that your record can be favorably compared to that of any prior administration. Please provide a list of final energy conservation standards issued by each administration from 1989 to the present day and indicate whether each final rule increased a standard or left it changed.

A3. The table below details this information

Energy Conservation Standards Published by DOE, 1989-Present*

1989-1992 Bush	1993-1996 Clinton	1997-2000 Clinton	2001-2004 Bush	2005-2008 Bush	2009-2012 Obama	2013-2016 Obama	2017-Present Trump
Residential Refrigerators		Room Air Conditioners	Residential Central Air Conditioners and Heat Pumps	Liquid-immersed distribution transformers	General Service Fluorescent Lamps & Incandescent Reflector Lamps	Distribution Transformers	Walk-in Coolers and Freezers (ASRAC)
Residential Freezers		Fluorescent lamp ballasts	Commercial Water Heaters, Hot Water Supply Boilers and Unfired Hot Water Storage Tanks	Packaged Terminal AC and Heat Pumps	Refrigerated Beverage Vending Machines	Microwave Ovens Standby Power	Pool Pumps***
Residential Clothes Washers		Residential Water heaters**		Commercial Refrigeration Equipment	Commercial Packaged Boilers	*Short Lamp Exclusion*	Commercial Packaged Boilers
Clothes Dryers		Residential Central AC and Heat		Residential Furnaces and Boilers	Cooking Products	Metal Halide Lamp Fixtures	Portable Air Conditioners

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		Pumps**					
Dishwashers		Commercial heating, AC and water heating**		Commercial Air-Cooled Air Conditioners and Heat Pumps	Water Heaters	External Power Supplies	Uninterruptible Power Supplies
Small Gas Furnaces		Electric Motors		Automatic Commercial Ice Makers	Direct Heating Equipment	Commercial Refrigeration Equipment	Miscellaneous Residential Refrigeration***
Water Heaters		Commercial Clothes Washers		Illuminated Exit Signs	Pool Heaters	Through-the-Wall CACs and Heat Pumps	Residential Central AC and Heat Pumps***
Residential Refrigeratory-Freezers		Low-voltage dry type transformers		Traffic Signal Modules and Pedestrian Modules	Commercial Clothes Washers	Walk-in Coolers and Freezers	Commercial Air Compressors
		Residential Refrigerators		Unit Heaters	Small Electric Motors	Electric Motors	*General Service Incandescent Lamps*
		Residential Freezers		Pre-rinse Spray Valves	Residential Clothes Dryers	Furnace Fans	
		Residential Refrigerator-Freezers		Ceiling Fan	Room Air Conditioners	Commercial Clothes Washers	
				Ceiling Fan Light Kits	Residential Furnaces	General Service Fluorescent Lamps and Incandescent Reflector Lamps	
				Torchieres	Residential Central Air Conditioners & Heat Pumps	Automatic Commercial Ice Makers	
				Compact Fluorescent Lamps	Residential Freezers	ASHRAE Products	
				Fluorescent Lamp Ballast	Residential Refrigerator-Freezers	*Packaged Terminal Air Conditioners and Heat Pumps*	
					Fluorescent	Single Package	

					Lamp Ballasts	Vertical Air Conditioners and Heat Pumps	
					Water and Evaporatively Cooled AC, VRF Water Source Heat Pumps, and Computer Room Air Conditioners	Commercial Air-Cooled Air Conditioners and Heat Pumps	
					Clothes Washers	Commercial Warm-Air Furnaces	
					Dishwashers	*HID Lamps*	
					Residential Refrigerators	Refrigerated Beverage Vending Machines	
					Commercial Refrigeration Equipment	Ceiling Fan Light Kits	
					Mercury Lamp Ballasts	Residential Boilers	
					Metal Halide Lamp Fixtures	Pre-rinse Spray Valves	
					Dehumidifiers	Commercial and Industrial Pumps	
						Battery Chargers	
						Dehumidifiers	
						Dishwashers	
						Ceiling Fans	
						Direct Heating Equipment	
						Commercial Air Compressors	

* Standards are those resulting from DOE rulemakings. They are grouped according to the year published in the Federal Register.

** Published in January 2001 by the Clinton Administration.

***Publication of confirmation of effective date and compliance date for direct final rule.

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Note: Italics indicate a rule in which there was no change in the standard.

Q4. In testimony before the Committee on Science, Space and Technology earlier this month, Assistant Secretary Simmons said the agency plans to issue 34 notices related to energy conservation standards and 29 related to test procedures within the next six months. Which of these notices will fulfill a statutory deadline?

A4. Since providing testimony to the Committee on Science, Space and Technology on February 5, 2020, DOE has published 13 notices related to energy conservation standards, including finalizing the Process Improvement Rule, and 9 notices related to test procedures. The Department remains committed to meeting the other publication commitments made in February and most of these work toward meeting a statutory deadline. In this timeframe, DOE plans to publish one energy conservation standard notice that will meet a statutory requirement and three test procedure notices that will fulfill a statutory deadline.

Q5. Under Secretary Menezes, in response to a question I posed during the hearing, you said that the recently published process rule will enable the Department to focus on what is most important. Do you believe that the department can select which statutory deadlines it will comply with?

A5. The recently published Process Improvement Rule (85 FR 8626 (February 14, 2020)) specifically states unequivocally that the Department will establish its priorities for undertaking energy conservation standards and test procedure rulemakings consistent with applicable legal obligations, including the "applicable deadlines for rulemakings" (85 FR at 8704).

Q6. Finally, does the Department of Energy currently have a written plan for catching up on the statutory deadlines it has missed?

A6. Recent changes to the Process Rule will provide for a program that is transparent, predictable, and which meets its statutory deadlines. Notably, the amended Process Rule

has the potential to streamline DOE's rulemaking using the early assessment, which can better enable the Department to satisfy its statutory time constraints. The early assessment review consists of a focused analysis that would allow DOE to determine, based on one or more statutory criteria, whether a new or amended energy conservation standard or amended test procedure is warranted. This early review will ensure better use of both DOE and stakeholder resources by orienting those resources toward rulemakings that will satisfy the requirements in EPCA (*i.e.,* that a new or amended energy conservation standard save a significant amount of energy, and be economically justified and technologically feasible; and that an amended test procedure more accurately measures energy (or water) use during a representative average use cycle, and not be unduly burdensome to conduct).

DOE is also implementing a revised priority-setting process to increase stakeholder input early in the rulemaking process. This additional input will better inform the Department in its decision-making process concerning priority-setting and developing its rulemaking plan. The Department published a Request for Comment in the *Federal Register* (85 FR 20886 (April 15, 2020)) concerning prioritization of rulemakings. The modernized Process Rule provides that stakeholders will have the opportunity to provide input on the prioritization of rulemakings as DOE begins its preparation of the Spring Regulatory Agenda. Through the publication of the Request for Comment, stakeholders can offer input concerning which appliance rulemaking proceedings should be in particular action categories for the Spring Agenda. In making recommendations, stakeholders can utilize the regulatory text in the modernized Process Rule, Section 4,
titled "Setting Priorities for Rulemaking Activity," that sets forth the factors the Department considers in making its priority-setting.

Recent progress and the near term plan regarding appliance standards rulemaking activity is as follows:

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QUESTIONS SUBMITTED BY THE HONORABLE FRED UPTON (R-MI)

Q1. In January, DOE finalized the "Process Rule" to modernize and streamline the procedures for establishing energy conservation standards. The "Process Rule" had not been updated since 1996, and under the outdated procedures, DOE was expending a disproportionate amount of time and resources on standards that did not account for a significant amount of energy savings. To put this in perspective, 40% of the DOE efficiency standards accounted for just 4% of total energy savings over the last 30 years.

Q1a. Would you please provide an update on the "Process Rule" and explain how the new rule will increase transparency accountability, and regulatory certainty for energy efficiency standards?

A1a. In January 2020, DOE issued a final rule that would streamline and modernize its process for setting energy efficiency standards and test procedures. The "Process Rule" improves EERE's internal framework for establishing new energy efficiency regulations, with the goal of increasing transparency, accountability, and certainty for stakeholders.

The final rule expands the opportunities for the public to become engaged early in the rulemaking process. Other major elements of the final rule include:

- Establishing a threshold for "significant" energy savings at 0.3 quads of site energy over 30 years, or, if less than that amount, a 10 percent reduction in the product's (or equipment's) total energy use over 30 years compared to energy usage if the standard is not amended.
- Requiring that DOE establish final test procedures 180 days before proposing a new energy conservation standard rulemaking.
- Clarifying that DOE will codify private sector consensus standards for test procedures, as described in the original Process Rule.

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Q2. Our national security and our economy depend on the security and resilience of our energy infrastructure. As we work to modernize and harden the electric grid, what steps should be taken to improve cybersecurity?

A2. Cybersecurity is an area of priority for the Department, and is one that must be addressed through continuous evaluations for every business, system, network, component, manufacturer and service throughout the extended supply chain. As we modernize the electric grid, we must continue to ensure our focus on cybersecurity. This focus includes building in best practices for cybersecurity in product development and network designs (grid architecture), regular cybersecurity risk and maturity evaluations, supply chain risk management through component testing and vulnerability mitigation, system testing-penetration testing, and reducing the attack surface. Additionally, cultivating our relationships with private sector owners/operators is of key importance. Our ability to collaborate with these stakeholders on a persistent basis is critical to the success of our initiatives and is imperative to countering the potential for malicious actors to access and adversely affect physical electricity assets. Our Nation's foreign adversaries continue to target our critical infrastructure in cyberspace. By partnering with the private sector, the Department of Energy can continue to foster a culture of cybersecurity as a foundation element of business continuity and national resilience.

Q3. During the hearing, you were asked about whether the Department was spending the funds that Congress appropriated quickly enough. I understand that with respect to the Office of Energy Efficiency and Renewable Energy (EERE), DOE is consistent or ahead of schedule on issuing funds when compared to the prior Administration.

Q3a. Would you please provide a summary of DOE EERE spending for FY 2019?

A3a. EERE has worked hard to be good stewards of taxpayer funds and has implemented an annual planning process to expedite the release of funding opportunity announcements (FOAs), thereby better positioning ourselves to execute final conference report language

as early as possible.

EERE competes a large portion of its appropriations through competitive FOAs. The competitive process takes, on average, 9-13 months to complete. Every year, EERE carries forward funds that are associated to these competitive opportunities. One of the process improvements implemented was to accelerate the FOA timeline, wherever possible. For instance, the shift to release multi-topic office-wide FOAs has had a significant impact on processing times. EERE had all FY19 FOAs posted by early May in 2019 and had made selection announcements on 90 percent of our FY19 FOAs by February 10th, which is ahead of schedule in comparison to the two previous years. EERE recently completed selections on our final FY19 FOAs. Of EERE's FY 2019 appropriation of $2.379 billion, only $179 million remains to be obligated upon completion of award negotiation.

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QUESTIONS SUBMITTED BY THE HONORABLE ROBERT E. LATTA (R-OH)

Q1. One of the issues with new technologies and systems for energy storage in electricity delivery systems, and the bulk power system, is the introduction of new, more complicated vectors for cyber-attacks.

Q1a. Would you talk about the importance of building in cybersecurity protection in any energy storage system?

A1a. The importance of integrating cybersecurity into the design of critical cyber-physical systems in the grid of the future cannot be overstated. The risks of cyber-attacks that can lead to physical damage and injury is one that can have significant economic impact on the Nation as we continue forward. Influencing the engineering process and protecting the supply chain are effective ways to integrate resiliency and cybersecurity into a final product. This approach reduces vulnerabilities and limits the attack surface available for exploitation. It also makes a system easier to defend and maintain. Developing situational awareness tools and processes to help understand the state of an energy ecosystem and its relative defense is a key service CESER provides in support of the energy sector. Furthermore, CESER will continue to research, test, and partner with industry to help secure the energy infrastructure including energy storage systems.

Q1b. I have legislation, H.R. 360, the Cyber Sense Act, which would require DOE to establish a voluntary Cyber Sense program to test the cybersecurity of products and technologies intended for use in the bulk-power system. Would you support legislation like H.R. 360 to strengthen cybersecurity requirements?

A1b. DOE would support legislation that strengthens the cybersecurity posture of those that rely on these critical products and technologies. The Administration previously submitted a views letter on H.R. 360, which identified the Administration's concerns and provided the amendments necessary for Administration support of the legislation. In fact, DOE has established the Cyber Testing for Resilient Industrial Control Systems

(CyTRICS) program involving multiple DOE national laboratories to provide a foundation for achieving just such a purpose. We believe this will be instrumental in achieving the type of testing that the Administration envisions to support the Executive Order on Securing the United States Bulk-Power System. We hope to continue our partnership with Congress to provide for a more resilient and cyber secure energy system.

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QUESTIONS SUBMITED BY THE HONORABLE BILL FLORES (R-TX)

Q1. Sec. 304 (i)(1) and (4) of H.R. 3962, the Energy Savings and Industrial Competitiveness Act of 2019, call for the Secretary of the Department of Energy (DOE) to conduct a study to look at the feasibility of: "code and standards improvements that would require that buildings be designed, sited, and constructed in a manner that makes the buildings more adaptable in the future to become zero-net-energy after initial construction, as more advanced are achieved in energy-saving technologies" and "code and standards improvements that consider energy efficiency and water efficiency and, to the maximum extent practicable, consider energy efficiency and water efficiency in an integrated manner." With recent efforts across the U.S. to ban the use of reliable, clean, and affordable natural gas in residential and commercial buildings, I'm concerned that this section, and specifically the terms "zero-net-energy" and "maximum extent practicable," will only serve to worsen this short-sighted attempt to limit consumers' energy choices by banning natural gas.

Q1a. Because these terms are not defined in this section, what is DOE's interpretation of making buildings adaptable to "zero-net-energy" and deploying energy efficiency at the "maximum extent practicable?"

A1a. As the referenced H.R. 3962 has not become law, DOE does not have a current interpretation of the bill's current language but 42 U.S.C. 17082 (a)(3) defines "zero-net-energy commercial buildings" as a high-performance commercial building that is designed, constructed, and operated— (A) to require a greatly reduced quantity of energy to operate; (B) to meet the balance of energy needs from sources of energy that do not produce greenhouse gases; (C) in a manner that will result in no net emissions of greenhouse gases; and (D) to be economically viable. DOE is committed to a diverse range of fuel types and cost-effective energy efficiency technologies.

Q1b. Do you think that this language could be used to further limit or ban the use of natural gas either at a state or federal level?

A1b. Sec. 309 of the referenced legislative section directs DOE to undertake a study of the feasibility, impacts and merit of the aforementioned "codes and standards improvements" related to the aforementioned concepts. DOE interprets this direction as establishing a

research priority, which does not in and of itself have the ability or authority to ban the use of natural gas or any fuel type at any level of government. Further, DOE does not have the authority to establish building codes or standards, and is rather directed to provide technical assistance to support industry processes to update model building energy codes (42 U.S.C. 6836), and to States implementing building energy efficiency codes (42 U.S.C. 6833).

Q1c. Can you explain how this interpretation might change with future Administrations?

A1c. DOE is unable to speculate on how research findings might be interpreted by a future Administration.

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QUESTIONS SUBMITTED BY THE HONORABLE BILLY LONG (R-MO)

Q1. I am hearing from several stakeholders that the EERE is working on an efficiency standard for dedicated purpose pool pump motors used in US pool pumps. I am also told that this effort could ensure that an estimated 3.6 quads of energy are saved over the next several decades.

Q1a. Can you elaborate on where this effort falls in the list of priorities of the department?

A1a. On May 15, 2020, DOE provided to the Majority and Minority staffs of the Committees on Appropriations of both Houses of Congress a briefing on the status of the joint stakeholder proposal for an energy efficiency standard for dedicated purpose pool pump (DPPP) motors. DOE issued a proposal on August 28, 2020 (available at https://www.energy.gov/sites/prod/files/2020/08/f77/dppp-motors-nopr.pdf) and the rule is awaiting publication in the *Federal Register*.

DOE has met with stakeholders to discuss a labeling approach as an alternative to an energy conservation standard rule. On March 1, 2019 and March 7, 2019, DOE held follow-up meetings with these stakeholders in which a memo was submitted to DOE providing information on cost, energy savings, and other impacts of the proposed labeling rule. DOE is currently evaluating the joint proposal as it relates to labeling provisions for DPPP motors.