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On behalf of ASAP and ACEEE

*SUBCOMMITTEE ON ENERGY OF THE U.S. HOUSE COMMITTEE ON ENERGY AND COMMERCE
LEGISLATIVE HEARING ON BILLS TO STRENGTHEN ENERGY INFRASTRUCTURE, EFFICIENCY, AND FINANCING*

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Introduction

Thank you for the opportunity to testify on two very important bills, H.R. 7947, the Weatherization Enhancement and Readiness Act of 2022, and H.R. 7962, a bill to amend the Energy Policy and Conservation Act with respect to water heaters. I would also like to thank Representatives Tonko and Dingell respectively for the introduction of these bills, and all their cosponsors for their support.

I am here today on behalf of two organizations, the Appliance Standards Awareness Project (ASAP) and the American Council for an Energy-Efficient Economy (ACEEE). ACEEE, a nonprofit 501(c)(3) organization, acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors so that all households experience equitable benefits from energy savings. ACEEE produces more than 30 reports and other resources each year on energy-saving technologies, programs, and policies, including research focus areas on health, energy insecurity, and equitable program access and policy development. ASAP is a coalition project housed at ACEEE and led by a Steering Committee consisting of representatives of efficiency advocacy organizations, state government, advocacy organizations that work on behalf of low-income households and consumers, environmental organizations and utilities. ASAP works to advance and defend new appliance, equipment and lighting standards that cut emissions that contribute to climate change and other environmental and public health harms, save water, and reduce economic and environmental burdens for low- and moderate-income households.

I also want to recognize several organizations that were involved in the development of the Weatherization Enhancement and Readiness Act and helped us prepare this testimony: the National Association for State Community Services Programs, the National Community Action Foundation and the National Consumer Law Center. These organizations are deeply involved in supporting and helping states effectively deliver the weatherization program. We are grateful for their long-standing leadership on this program and their work to develop this bill. We appreciate the opportunity to support their work.

With respect to the water heater bill, I'd like to recognize the contributions of the Air-conditioning, Heating and Refrigeration Institute (the trade group for water heater manufacturers), the National

Rural Electric Cooperatives Association, the Solar Energy Industries Association and the Natural Resources Defense Council. We worked in collaboration with each of these organizations during the development of the proposal. We also consulted with state governments, other efficiency organizations and individual utility companies.

Of course, any errors of commission or omission in this testimony are mine alone.

Summary

Two bills before the committee today will improve two of the most important federal programs for easing the burdens of high energy bills on low-income families and delivering large energy savings that protect our environment, improve power system reliability, and improve energy security. The first, the Weatherization Enhancement and Readiness Act of 2022, would add needed flexibility to the federal Weatherization Assistance Program (WAP) which helps low-income families by making energy efficiency improvements to their homes. The reforms contained in the bill would:

- raise the maximum amount that the program can invest in any one home,
- increase the amount available to make essential repairs to a home, which are necessary for safe, effective and durable weatherization improvements,
- raise the cap on solar energy investments for a home allowed under the program, and
- remove bureaucratic barriers to weatherization improvements.

These enhancements are urgently needed in 2022. With energy prices on the rise due to the war in Ukraine and severe weather events that can threaten health and safety happening more frequently, people across the country need Congress to act on this bill. Households with the lowest incomes desperately need a strengthened weatherization program to reduce the tremendous strain of keeping up with high energy bills and enable them to qualify for investments that make their homes safe when heat waves or severe cold-snaps strike. Today, as many as one in five eligible households are not able to benefit from this program due to structural problems with their home. Generally, these are the households with the greatest needs. They live in substandard housing that requires basic home repairs for safety, to patch roof holes and make other essential repairs.

The reforms in this bill are urgently needed to make sure that the lowest-income households -- many of them rural, many people of color, many elderly -- that have the greatest need of assistance can fully benefit from the weatherization program.

The second bill would amend the national appliance efficiency standards law, a cornerstone of US energy policy that covers about 60 product categories. The average US household spends about \$500 less per year on its utility bills because of standards on the books today. Standards have also resulted in enormous reductions in climate change emissions and other pollutants. Water heaters are one of the largest energy users in our homes and businesses, therefore one of the most important products covered by the national standards program. This bill would amend the law with respect to this critically important product category. The bill would:

- Update and clarify the line between consumer and commercial water heaters to ensure that products meet the standards designed for their application.

- Add a new definition of solar-thermal water heaters
- Authorize the development of demand response requirements for water heaters

The definitional changes are needed because the existing statutory definition of consumer water heaters encompasses some products that are used for commercial purposes. The updated definitions will provide regulatory certainty and clarity for manufacturers and purchasers and will ensure that products meet standards designed for their application. In addition, solar thermal water heaters are specialized products that can provide significant cost and energy saving benefits. A separate definition will allow for appropriate regulatory treatment of these products.

Two trends support the need for enhanced authority for demand response: increased frequency of severe weather events that strain the power grid and increased availability during off-peak hours of clean, renewable energy. Demand response is a well-established technique for shifting electricity use away from times of peak demand and to times when cheap, clean power is available, thus reducing costs and improving reliability. By heating water when power is cheap and clean, it is possible to save money, reduce demand peaks that can threaten grid reliability and cut emissions from fossil generation. Two trends support the need for enhanced authority for demand response: increased frequency of severe weather events that strain the power grid and increased availability during off-peak hours of clean, renewable energy.

For water heaters to provide these grid-flexibility services they must be equipped to respond to external signals. Historically, some utilities have retrofitted water heaters with demand response capabilities for customers at or after the time of installation. But the capability can be more cost-effectively added to products at the time of manufacture. Several states have established or authorized such manufacturing requirements. This bill would authorize the development of national demand response requirements that could improve business certainty for manufacturers and for utilities, facilitate broader access to this technology, and strengthen grid flexibility and reliability. It could ensure a common communications protocol, easing the pathway to large scale demand response and significant cost savings for households. A national requirement would preempt additional states from setting their own requirements, helping to promote a consistent national marketplace for water heaters.

Low-Income Weatherization

[H.R. 7947](#), The Weatherization Enhancement and Readiness Act of 2022

The Weatherization Assistance Program (WAP) helps low-income families by making energy efficiency improvements to their homes. Since 1976, WAP has funded and provided training to community assistance programs across the United States to make more than 7 million homes more energy efficient. Using energy assessments, contractors determine a package of efficiency measures that are appropriate and cost-effective for each home, such as sealing air leaks, adding insulation, and replacing old heating and cooling equipment.

For more than four decades, WAP has reduced energy usage in the homes of low-income families. The U.S. Department of Energy (DOE) estimates that these upgrades help each household save \$372 on

average in energy bills each year.¹ For every \$1.00 invested in weatherization \$1.72 is generated in energy savings benefits.² And while these energy and cost savings are great, this same investment results in \$2.78 in nonenergy benefits that are perhaps even more important to vulnerable communities: lower rates of asthma and respiratory illness, more money to pay for medications, and better home comfort. The program also leads to significant reductions in CO₂ emissions – 3.5 MMT CO₂ per year (roughly the equivalent emissions of 740,000 cars – and natural gas use – 27 trillion Btu per year).³ WAP also trains and employs thousands of workers, often from the same low-income communities that benefit from home improvements.

While WAP is highly successful, increased program flexibility is necessary. We are concerned that certain limitations in the program’s rules hamper its potential to prepare homes for worsening weather conditions. Additionally, some constraints on the program prevent low-income households from accessing innovative technology.

The Weatherization Enhancement and Readiness Act makes some major strides to address these issues, investing more money in eligible homes, fixing homes that need repairs before weatherization, normalizing renewable energy technology, and clarifying “re-Weatherization” restrictions.

First, the average cost limit per unit, or ACPU, is currently set in statute at \$6,500 per home (with a small annual escalator). As prices rise for labor and materials, and new resilience measures are added to the menu of efficiency investments, fewer measures fit under the cap. WAP workers are also often underpaid compared to their industry counterparts, and as private sector wages rise, trained workers are increasingly unavailable to many WAP providers. Wage growth without a higher ACPU means program officials must reduce the number of upgrades per house.

The \$6,500 ACPU limit also creates perverse incentives. After serving very low-income applicants in disadvantaged areas whose houses need significant upgrades, WAP teams are forced to find homes that need very few improvements in order to keep the ACPU down. This stands at odds with the program’s goal of serving those most in need.

Representative Tonko’s bill would increase the ACPU to \$12,000, permitting the program to keep pace with rising costs and enabling deeper retrofits with greater savings.

Second, many eligible homes are too dilapidated to support the upgrades made by WAP. Either the home structure itself cannot make use of them due to defects like leaking roofs, or work teams are

¹ US Department of Energy. “Weatherization Assistance Program.” <https://www.energy.gov/eere/wap/weatherization-assistance-program> (last accessed June 21, 2022).

² US DOE. “Weatherization Assistance Program” Fact Sheet. January 2021. https://www.energy.gov/sites/default/files/2021/01/f82/WAP-fact-sheet_2021_0.pdf.

³ ACEEE. “Weatherization Assistance Program” Fact Sheet. 2018. *available at* <https://www.aceee.org/sites/default/files/pdf/fact-sheet/weatherization-assistance-program.pdf>.

unable to enter due to unsafe conditions like rotting stairs (which low-income people live with every day). Yet only \$500 of WAP funds for a home may be used toward incidental repairs. According to the National Association for State Community Services Programs (NASCSPP) many states have deferral rates, the amount of income-eligible homes that are structurally unfit to receive upgrades, at or approaching 20%.⁴ But one state that had such a 20% rate just 3 years ago saw that dropped to 9% after the state government created a trust to fix a common structural problem in its homes.

These repairs come in all forms. NASCSPP has collected many stories from eligible homes that were unable to receive weatherization assistance because of the incidental repair limit:

- A senior citizen in Aberdeen, WA who is partially disabled was deferred from weatherization assistance due to extensive rot. A state program helped him repair these issues and then a WAP contractor was able to come in and do full insulation – reducing his annual heating bill below \$700 in his home built in 1912.
- A single mother with small children had a leaky roof, preventing the safe and effective installation of attic insulation which was badly needed.
- A couple with four children living in housing in need of insulation, updated ventilation, and more was found to have lead-based paint and soil surrounding the home, creating a hazard for family and workers if disturbed. The family was deferred for weatherization services.
- A disabled elderly client living in a manufactured home had rotten flooring that was not safe to walk on, preventing a crew from safely entering the home and installing necessary health and safety and weatherization measures.

This bill includes a much needed “weatherization readiness” fund that would allow WAP teams to complete major repairs in order to make homes structurally sound and safe for installers.

Third, renewable technology installations are limited to \$3,000 per home in the WAP program. When this was set in statute, these kind of upgrades were relatively uncommon and seen as untested. That is no longer the case. Residential renewable energy systems, especially solar, are much cheaper and well understood, and provide clear benefits for reduction of energy use and energy bills. This legislation would remove that cap and allow low-income households to benefit from proven technology where it makes sense. Renewable measures would still be subject to the cost-effectiveness requirements that apply to all measures and to the overall funding cap per home. They would just be treated on an equal basis with other measures.

Finally, current law prohibits installing more WAP measures in a home until 15 years have passed since a retrofit under the program. It also has language that can be read to imply that a WAP agency must investigate the records of *every* other similar federal program to be sure that no other agency has ever weatherized that unit. Thus, for example, a home that has received assistance under the Low-Income Home Energy Assistance Program for a new heater might be deemed ineligible for air sealing or more insulation.

⁴ E4theFuture. “Weatherization Barriers Toolkit.” April 2022. *available at* https://e4thefuture.org/wp-content/uploads/2022/04/E4-EFG_Weatherization-Barriers-Toolkit-4-7-2022.pdf.

This bill loosens those restrictions somewhat to allow for better program administration by only limiting homes that another program has “fully weatherized” in the past 15 years could not receive service from WAP.

Water Heaters

[H.R. 7962](#), "To amend the Energy Policy and Conservation Act to modify the definition of water heater under energy conservation standards and for other purposes"

Congress created the national appliance standards program in 1975 when it enacted the Energy Policy and Conservation Act (EPCA) and has amended and expanded it on a broad bipartisan basis many times since, most notably in 1987, 1992, 2005, 2007 and 2012. The laws established initial standards for products or, in some cases, directed the Department of Energy (DOE) to develop initial standards by rulemaking. Recognizing both the potential for technological progress and the ongoing need for saving energy, Congress directed DOE to review each product standard periodically to determine if strengthened standards make sense. By law, any increased standard must be both technologically feasible and economically justified. To provide for regulatory certainty, an anti-backsliding clause prohibits DOE from weakening any standard. These national standards also generally preempt state-level appliance efficiency regulation, helping to create the national-scale regulatory environment that manufacturers and sellers prefer.

Appliance and equipment efficiency standards are an essential cornerstone of US energy policy. They establish an efficiency floor for many of the energy- and water-using products purchased by households and businesses. The energy savings from appliance standards translate into pocketbook savings for consumers and businesses, create jobs, make our energy systems more resilient and reliable, foster technological innovation, and reduce emissions that harm public health and the environment.

- The typical household spends about **\$500 less per year on utility bills** than if there had never been any standards. That’s equal to 16% of an average household’s utility bills, savings that are especially important for households with low incomes.⁵
- For businesses, which also buy and use products covered by standards, annual savings total about **\$23 billion**.⁶
- All told, standards on the books today will have saved consumers and businesses **\$2 trillion by 2030** on utility bills.⁷

⁵ deLaski, A. and J. Mauer. “Energy Saving States of America.” ASAP and ACEEE. February 2017. p 1.

⁶ Ibid. p. 6.

⁷ US DOE. “Saving Energy and Money with Appliance and Equipment Standards in the United States” Fact Sheet. January 2017.

- Research shows that standards **boosted the number of domestic jobs by about 300,000** in 2016.⁸
- Saving energy with improved efficiency standards helps make our **energy systems more resilient, reliable and affordable**.
- US carbon dioxide emissions will be cut by a **cumulative 7.9 billion metric tons by 2030** because of already existing energy-saving standards.⁹

HR 7962 updates and clarifies the law with respect to water heaters, one of the largest energy uses in our homes and in businesses. We strongly support HR 7962. We deeply appreciate Representative Dingell's leadership on this bill and the bi-partisan group of co-sponsors – Ms. Blunt Rochester, Ms. Moore of Wisconsin, Mr. Cooper, Mr. Rose, Mr. Tonko, Mr. Welch, Mr. Walberg, Ms. Escobar, Mr. Mullin, Mr. Kind, and Mrs. Harshbarger – who have worked to advance it.

We are pleased to have been able to work with manufacturers and their trade association, the Air-conditioner, Heating and Refrigeration Institute (AHRI), and in consultation with representatives of the utility industry, states and the solar energy industry to develop consensus recommendations that provided a foundation for this bill.

HR 7962 contains critical updates that are needed to modernize the law's treatment of water heaters for the energy policy challenges of the 21st century. The bill, which replaces a prior version that failed to advance in the previous Congress, contains a carefully negotiated package of complementary changes that enable broad support. It makes two important sets of updates to the law. First, it updates and clarifies the consumer and commercial water heater definitions. Second, it provides for authority to address water heater demand response capabilities.

Water heater definitions

The bill's updated definitions clarify the line between commercial and consumer water heaters. Because commercial and consumer products have different uses, the standards and underlying test procedures for each are different. The modified definitions will ensure that products manufactured and sold for consumer use meet the consumer water heater standard and those manufactured and sold for commercial use meet the commercial water heater standard.

When Congress enacted the original water heater standards in 1987, it provided a simple statutory definition for consumer water heaters based on maximum energy input (rate of energy use), an approach based on an assumption that products that use more energy are more likely to be used in

⁸ Stickles, B., J. Mauer, J. Barrett, A. deLaski. *Jobs Created by Appliance Standards*. ACEEE and ASAP. July 2018. Available at https://appliance-standards.org/sites/default/files/Jobs_Report.pdf.

⁹ US DOE. "Saving Energy and Money with Appliance and Equipment Standards in the United States" Fact Sheet. October 2016.

commercial settings. For example, for electric water heaters, the 1987 law drew the line at 12 kilowatts (kW) of input power.

Subsequently, through regulation, DOE specified additional criteria such as maximum temperature set point (i.e., products able to heat water to 180 degrees F were deemed commercial) that manufacturers came to interpret as allowing them to categorize products meeting the statutory definition of a consumer water heater as commercial.

DOE recognized that manufacturers' practice conflicted with law about a decade ago and in 2016 clarified its regulatory definitions and test procedures to ensure fidelity to the statute. As a result, many products which manufacturers had certified to the commercial water heater standard had to meet the more demanding residential water heater standard. In recognition of the potential for misunderstanding and to avoid market disruption, DOE exercised its enforcement discretion to allow time for manufacturers to adjust their product offerings. DOE extended and amended this enforcement discretion policy several times, and in 2019 announced that it would sunset at the end of 2021.

In response to DOE's clarifications, manufacturers sought statutory definitional changes to align more closely with the marketplace. HR 7962 amends the 1987 definition to exempt some water heaters that are intended for commercial usage but that have energy input in the consumer water heater range from the consumer water definition. These products would instead be categorized as commercial water heaters. Because some of these products could be modified for residential application, the bill includes protections to ensure that these exceptions do not become a path for circumventing standards. Most notably, if sales of the exempted water heaters grow at a rate indicative of significant circumvention, the exemptions would expire.

In addition to updating the line between commercial and residential water heaters, the bill provides a new definition for solar-thermal assisted water heaters. This definition provides legal clarity that will assist DOE in determining regulatory treatment for products that primarily heat water using solar-thermal energy, but which also have electric or gas back up.

Demand response

The second major element of HR 7962 authorizes the development of demand response requirements for consumer water heaters. This authority is found in section 1, subsection d.

Severe weather events, such as the heat wave that affected much of the country last week, are driving higher peak electricity demand levels that can threaten grid reliability and increase electricity prices. Over the past several years, extreme heat waves have occurred with increasing frequency and severity.

Additionally, in many parts of the country, emissions-free renewable power is in surplus and available at low cost during certain times (e.g., nighttime wind resources). Grid-flexibility technology that enables storage water heaters to respond to grid conditions and variable electricity prices can help reduce peak demand and consumer costs by heating water when power is cheap, clean and plentiful. The water heater preheats the water at a favorable time, storing energy for later use.

The best way to reduce energy bills and cut power sector emissions remains using less energy to provide the desired service (e.g... keeping food cold; warming or cooling a home, etc.). By saving

energy, a more efficient water heater reduces utility bills and the environmental consequences of energy production. Increasingly, these same benefits – lower bills and reduced environmental harms – can be achieved by adjusting the timing of energy use. Shifting energy consumption to times when clean power is cheap and plentiful can be nearly as valuable as reducing consumption.

Utility demand response programs have generally focused on large commercial and industrial energy users, paying these customers to adjust their consumption to help meet the needs of the power grid cost-effectively. Some programs have provided these benefits to residential consumers by retrofitting water heaters or other products at the time of installation or after installation. However, the cost savings of providing flexible demand have not been widely available to households. Few utilities offer flexible demand rates or incentives for residential customers because few customers have technology to take advantage of those rates. Consumers have little reason to demand products that offer flexible demand capabilities because utilities do not offer time of use rates or incentives. In essence, the market for demand response appliances has been slow to develop because of a classic “chicken and egg problem”: one of these two conditions (widespread availability of time-of-use rates or household demand response capabilities) needs to be achieved so, the consumer market for flexible demand products can grow.

Several states including Washington, Oregon, California, and New York have now enacted or authorized manufacturing requirements to ensure that new water heaters are factory-ready to provide grid-flexibility services. Incorporating demand response capabilities into products as part of their original manufacture is far less costly than retrofitting products at the time of or after installation. It can also increase the number of products installed with the capability, which when combined, can provide demand-side resources at scale. A manufacturing requirement potentially can dramatically lower the cost of demand-response-capable water heaters for consumers and create a large scale, at-the-ready demand-side resource for stabilizing the grid and avoiding the need for costly additional grid upgrades that will be passed to consumers.

By authorizing a national approach, HR 7962 would provide a pathway that could improve business certainty for manufacturers and for utilities, facilitate broader access to this technology, and strengthen grid flexibility and reliability. It could ensure a common communications protocol, easing the pathway to large scale demand resources. A national requirement would preempt additional states from setting requirements, helping to promote a consistent national marketplace for water heaters.

The bill directs DOE to consider setting these requirements subject to similar criteria used for establishing traditional energy efficiency standards. Any requirement must be technologically feasible and economically justified, considering impacts on consumers and manufacturers, any impacts on product performance and competition among manufacturers. The bill would require DOE to consider industry consensus standards developed by AHRI as the basis for national demand response requirements. Work on the relevant AHRI standard is now far advanced as AHRI has already put several years of work into developing a consensus approach. In addition, the bill establishes reasonable rules for federal preemption of state requirements that will provide certainty for state and power grid utility planners, utilities companies and manufacturers.

Conclusion

H.R. 7947, the Weatherization Enhancement and Readiness Act, and H.R. 7962, concerning amendments to water heater definitions and grid flexibility requirements, are two important bills for addressing the burdens of high energy bills, protecting health and safety, strengthening the energy system, and reducing climate emissions and other environmental harms. Both bills are urgently needed: we urge the committee to approve them.