

**United States House of Representatives
Select Committee on the Climate Crisis**

Hearing on April 7, 2022

**“Cost-Saving Climate Solutions: Investing in Energy Efficiency to Promote
Energy Security and Cut Energy Bills”**

Questions for the Record

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The Honorable Kathy Castor

- 1. How would the energy efficiency investments in the Bipartisan Infrastructure Law, such as the \$3.5 billion for the Weatherization Assistance Program, funding for energy code adoption, and grants for schools and non-profits help advance energy efficiency across the nation? How would the House-passed climate investments build on that foundation?**

The residential and commercial built environment represent approximately 40% of U.S. carbon emissions. Funding through the IJA to support the Weatherization Assistance Program (WAP), grants for energy efficiency improvements in non-profits and public schools, and similar investment opportunities directly address the need to reduce emissions and respond to climate priorities. That said, additional and substantive investments in energy efficiency are required if we are to meet the urgent need. This includes but is not limited to additional WAP funds, and resources to support WAP readiness.

That said, federal investments proposed in budget reconciliation that are now part of the House-passed legislation are essential if we plan to move the ball forward. Key funding provisions include the energy efficiency tax incentives 25C, 45L, and 179D; Hope for Homes; critical facilities modernization; climate bank provisions, and others. Unfortunately, the critical facilities modernization provision in the House-passed measure is substantially reduced when compared to the Open Back Better legislation (H.R. 1485) on which the provision is based. The House-passed measure would provide \$500 million versus the \$18 billion proposed in H.R. 1485.

2. Could you please describe the role of appliance and equipment standards in furthering energy efficiency, energy cost savings, and reducing carbon pollution? What are some examples?

Appliance and equipment standards play an essential and critical role in reducing carbon emissions, and in fact, appliance standards and labeling alone avoids 343 metric tons of carbon emissions a year. Currently, the administration has a large task with some 100 plus rulemakings not yet completed, which could save consumers billions over the next 3 decades, while also lowering energy costs and carbon emissions.

That said, in addition to establishing clear standards to drive market penetration of high efficiency equipment and appliances, the Alliance recommends that policy makers also respond to concerns related to affordability and access. While we definitely want consumers using the most efficient product types, if they are unable to afford the equipment or retrofit, then the benefits of emission reductions and energy cost savings are avoided. Although high efficiency appliances and equipment repay the consumer over the life of the product, often when affordability is an issue, consumers make their purchase decisions based on exiting daily and monthly living expenses. To help address this issue, policy makers should support additional funding for the Weatherization Assistance Program (WAP), expansion of the energy efficiency tax incentives (25C, 45L, and 179D), and programs like Hope for Homes.

3. What are some additional Federal energy efficiency policies that could help reduce consumer energy bills and help achieve our national climate goals?

Energy efficiency tax incentives are an important tool to drive greater energy efficiency adoption, with specific attention to sections 25C, the tax credit for homeowners making efficiency upgrades; 45L, the credit for single-family and multi-family development; and 179D, the deduction for commercial buildings.

That said, many consumers do not itemize and are otherwise left without an incentive to drive efficiency investments. Hope for Homes, legislation that is part of the budget reconciliation bill that passed the House is idea for these homeowners, and provides a rebate when achieving identified efficiency levels.

Climate banks can also be effective tools in driving energy efficiency investments for consumers, and budget reconciliation as passed by the House provides \$11.970 billion for climate bank activity and an additional \$8 billion for the rapid deployment of low and zero-emission products, technologies, and services, specifically targeting financial and technical assistance in low-income and disadvantaged communities.

The Alliance would also recommend funding pathways to incentivize energy efficiency investments in small businesses, as provided in HR 4903, the Main Street Efficiency Act. Small businesses often lack the resources to prioritize energy efficiency, however once solutions are

deployed, owners are able to identify significant business savings. HR 4903 would provide grants to utilities that operate demand side management programs, and leverage those funds to provide reduced or no cost retrofits for the small business enterprise.

4. In your testimony, you mentioned that energy efficiency investments are essential to improving electric grid reliability as we continue to electrify homes, businesses, and vehicles. Could you please describe in additional detail how energy efficiency investments can complement upgrading and expanding the electric grid? How can energy efficiency help unlock a path towards a cleaner and more reliable grid?

As indicated in written testimony, investments in energy efficiency are essential to the reliability of the electric grid. This is particularly true as policy and markets shift a substantive share of energy demand toward electrification. Based on analysis and depending on the rate of electric vehicle (EV) adoption, we should anticipate significant future growth in grid load.

According to the Brattle Group, if the projected rate of EV growth increases from 1.5 million in 2020 to 10-35 million by 2030, we will need grid investments up to \$125 billion across the electric power sector— and that’s to serve 20 million EVs.¹ These vehicles will add 60-95 terawatt hours (TWh) of electricity demand to the grid annually, in addition to 10-20 gigawatts (GW) of peak load, which in turn would require 12-18 gigawatts of generation capacity from renewable energy.²

Energy efficiency directly reduces demand on the grid through efficient products and equipment that have lower energy intensity and still perform the same or better as a less efficient equipment or product type. A most common example would be the use of an incandescent light bulb versus an LED. LEDs in general use more than 75% less energy. As grid load decreases through energy efficiency we also increase the ability of the grid to provide power to customers and businesses without interruption. Additionally, “during power interruptions, lower loads due to energy efficiency measures allow more customers to be switched across feeders for [faster restoration time](#).”³

Energy efficiency’s positive impact on grid reliability and its ability to lower load and infrastructure investment costs, also make it possible to integrate more renewable capacity onto the grid faster. Researchers already appreciate the variability of renewable energy and the limited capacity of storage technologies, and see energy efficiency as a necessary complement to a cleaner grid.⁴

¹ <https://www.brattle.com/insights-events/publications/electric-power-sector-investments-of-75-125-billion-needed-to-support-projected-20-million-evs-by-2030-according-to-brattle-economists/>.

² *Id.*

³ https://eta-publications.lbl.gov/sites/default/files/ee_reliability_resilience_2021_12_03.pdf.

⁴ <https://aip.scitation.org/doi/10.1063/5.0064570>

5. In your testimony, you describe “active efficiency.” How could active efficiency opportunities support better resilience to climate impacts like the extreme heat waves in the Pacific Northwest last summer?

Active Efficiency technologies would include solutions such as grid-interactive enabled buildings, smart buildings optimization and analytics, and use of distributed energy technologies that allow building systems to shift, share, and shed load, including direct links to light and heavy vehicles. As Active Efficiency technologies are added into the energy efficiency equation, overloading and wear and tear on the grid are reduced significantly, reducing the likelihood of equipment failure.⁵

6. Could you please describe how innovation in industrial energy efficiency could help save money for businesses while also reducing carbon pollution? Which Federal investments could facilitate greater innovation in industrial energy efficiency?

Industry and manufacturing account for 24% of U.S. GHG emissions.⁶ As a result, any viable strategy to reduce overall emissions must include industry energy efficiency.

When talking about energy efficiency in the industry and manufacturing context, we are targeting the equipment used, operations and process, and the application of smart manufacturing technologies. The end game is to optimize manufacturing and industry systems in a way that achieves the highest efficiency outcomes. In application, this means deployment and utilization of multiple solutions, including but not limited to distributed energy resources, carbon capture, electrification, low-emission fuel technologies, and storage. From an equipment and operations perspective, relevant solutions would include high efficiency motor systems, combined heat and power, strategic energy management, and others.

Federal investments that could be useful in driving energy efficiency include funding to support Industrial Assessment Centers, incorporating [First Three](#)— applications of transformative industrial technologies; [Flex-Tech](#) – DOE funding for states to create a version of the successful energy saving NY program; and [Commercial Deployment of Efficient Technologies](#) – building on the Clean Industrial Technologies Act provisions of the Energy Act of 2020.

7. How could Federal energy efficiency investments promote American energy security? Could increased energy efficiency help reduce demand for globally traded fossil fuels with volatile prices?

Energy efficiency investments reduce energy intensity throughout all sectors of the U.S. economy — including manufacturing, transportation, in agriculture, and the built environment.

⁵ *Id.*

⁶ <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

In fact, but for investments made in energy efficiency since 1980, energy consumption would have been more than 60% higher.⁷

As we make investments in energy efficient products, equipment, supplies, and technologies—and as consumers and businesses adopt efficiency solutions, energy consumption is reduced, and generation and production supplies are offset through lowered demand. This is achieved by investments that secure the building envelope, equipment standards, building codes, building design, and establishing policies that prioritize energy efficiency as a primary part U.S. domestic policy. If we are using less energy as a result of energy efficiency, we are also using less supply— reducing the need for larger and larger amounts of energy production.

The Honorable Mike Levin

- 1. The United States has a long history of developing fuel economy standards. President Ford signed the first standards into law in 1975 in response to the 1973 oil embargo by Arab nations in protest to U.S. support for Israel during the Yom Kippur War. These fuel standards, along with subsequent updates, have cut American oil consumption by 25 percent, or nearly 2 billion barrels a year. Strong fuel economy standards strengthen U.S. energy independence and help reduce reliance on fossil fuels, particularly from foreign nations. Unfortunately, the previous Administration sought to weaken these fuel economy standards and limit the ability of states like California to set their own emissions rules. According to Consumer Reports, each vehicle sold under the Trump rule would have cost its owner on average \$2,100 dollars more due to increased gas costs. Thankfully, the Biden Administration has reversed this decision – last week, the Department of Transportation office released new fuel efficiency standards for vehicles, increasing fuel economy to a fleetwide average for new vehicles of 49 miles per gallon by 2026. As a result, Americans purchasing new vehicles in 2026 will get 33 percent more miles per gallon as compared to 2021 vehicles. This means new car drivers in 2026 will only have to fill up their tanks three times as compared to every four times that new car drivers today do for the same trips. This rule is expected to save 234 billion gallons of fuel through 2050. Can you talk about why these strengthened fuel efficiency standards, along with parallel investments in electric vehicles, are good for both consumers and the environment?**

Fuel economy standards and electric vehicle deployment directly reduce demand for oil and gas supplies thus reducing the levels of carbon emissions that would be emitted from less efficient vehicle types. Additionally, fuel economy standards lower the cost of energy for consumers in that they are traveling further while burning or using less fuel. The efficiency impact of electric vehicle (EV) technology as an alternative is much greater. EVs convert up to 77% of the charged energy to the vehicle and braking systems versus 12%-30% for vehicles powered by gasoline.⁸

⁷ <https://energyefficiencyimpact.org>.

⁸ <https://www.fueleconomy.gov/feg/evtech.shtml>.