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Before the House Select Committee on the Climate Crisis
Hearing on "Cost-Saving Climate Solutions: Investing in Energy Efficiency to Promote Energy Security and Cut Energy Bills

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Chair Castor, Ranking Member Graves, members of the House Select Committee on the Climate Crisis, my name is Paula Glover, and I am President of the Alliance to Save Energy. I thank you for inviting me to participate in today's hearing titled *Cost-Saving Climate Solutions: Investing in Energy Efficiency to Promote Energy Security and Cut Energy Bills*.

The Alliance to Save Energy is a nonprofit, bipartisan coalition of business, government, environmental and consumer leaders working to expand the economy while using less energy. Our mission is to promote energy productivity worldwide – by advancing energy efficiency policy to achieve a stronger economy, a cleaner environment and greater energy security, affordability, reliability, and equity.

The Alliance was founded in bipartisanship in 1977 by Senator Charles H. Percy (R-IL) and Senator Hubert Humphrey (D-MN). The organization was launched at a time not too dissimilar from today, when an instability in energy supplies exposed a fundamental weakness in our nation's economic and energy security. The challenges of the period required the nation to identify and develop solutions that would place the U.S. on a more secure energy path, less reliant on foreign resources with greater investments and development of energy technologies here at home. For Senators Percy and Humphrey, energy efficiency and demand-side solutions would provide part of the answer.

Today, in addition to a potential energy crisis resulting from the COVID-19 pandemic and the geopolitical crisis in Europe, we are also moving closer and closer to the climate tipping point. This requires us to develop climate change solutions while also meeting the challenges of energy security and affordability. We are required to lead in energy production— but we must also lead in energy efficiency.

However, the issue of energy security is not simply about supply. As Senators Percy and Humphrey identified 45 years ago, we must also invest in reducing energy demand through energy efficiency. Energy efficiency investments reduce energy intensity throughout all sectors of the U.S. economy — including manufacturing, transportation, in agriculture, and the built environment. In fact, but for investments made in energy efficiency since 1980, energy consumption would have been more than 60% higher.[1]

When measuring energy consumption, industry and manufacturing account for 33% of all energy consumed; transportation equals 26%; and the residential and commercial built environment represent 22% and 18% respectively.[2] As we make investments in energy efficiency 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.

Energy efficiency also effectively addresses the issue of climate change— and should be used as the first solution to the climate crisis. As indicated in the recent report *Halfway There*, energy efficiency alone can reduce carbon emissions by 50% by 2050[3], and according to the International Energy Agency (IEA), over 40% of the emission reduction objectives of the Paris Agreement can be achieved through energy efficiency by 2040.[4] Through energy efficiency standards and labeling alone, the U.S. already avoids 343 metric tons of carbon emissions each year.[5]

[1] https://energyefficiencyimpact.org.
[2] https://www.eia.gov/energyexplained/use-of-energy/.
[3] https://www.aceee.org/fact-sheet/halfway-there.
[4] https://www.iea.org/commentaries/how-energy-efficiency-will-power-net-zero-climate-goals.
[5] https://www.iea.org/reports/achievements-of-energy-efficiency-appliance-and-equipment-standards-and-labelling-programmes/executive-summary.

Finally, as efficiency effectively delivers on its ability to increase energy security and mitigate climate change, it also makes energy more affordable. As a result of the efficiency investments made since 1980, consumers avoid approximately $800 billion per year in energy costs.[6]

This is the power of energy efficiency— reduced carbon emissions; reduced demand on supply; and billions of dollars in savings for consumers— all of which directly impact today's challenges of energy and national security, energy affordability, and climate change.

Furthermore, energy efficiency has a positive impact on the economy. Energy efficiency is currently the largest employer in the clean energy workforce, employing over 2.1 million people in the U.S. — nearly seven times that of the wind and solar industries combined, and 12 times the size of the entire coal industry. These jobs pay on average $24.44 an hour, or 28% higher than the national median hourly wage.[7]

To advance the multiple positive benefits of energy efficiency as a tool for national security, energy affordability, and climate change— and I would add economic growth— there should be a whole of government approach. This means prioritizing the role of energy efficiency targeting the major sectors of the U.S. economy, including industry, transportation, and the residential and commercial built environment. As federal dollars are released and deployed through agencies and programs, policies should ensure that national energy efficiency objectives are substantively linked. This includes energy efficiency as connected to small business activity, affordable housing funding, mortgage lending, agriculture, commerce investments, and elsewhere.

This means retrofitting and modernizing the nation's critical facilities and public buildings— through direct investments, improved codes and standards, by leveraging private public partnerships, and through other measures. And this should also be across the federal footprint.

This also means research, development and commercialization of Active Efficiency technologies, which are the application and use of digital energy efficiency, including grid-

[6] https://energyefficiencyimpact.org.
[7] https://e4thefuture.org/wp-content/uploads/2021/10/Energy-Efficiency-Jobs-in-America_National-Summary-2021.pdf.

integrated enabled buildings, and technologies that allow single and multiple buildings to take on, shift, and share load on a continuous basis.

We should employ these same solutions in the residential built environment, and with an emphasis on equity. According to research conducted by the Alliance to Save Energy on single-family homeownership, of the nearly 74.5 million owner-occupied households, 35.2 million are households with annual incomes below $60,000.[8] Moreover some of these same households represent families with the highest energy burden, with rural households having the highest energy burden when compared to other groups.[9] At the same time, when segmenting energy burden by race, when compared to white households, Blacks spend 43% more of their income on energy costs, Hispanics, 20% more, and Native American households 45% more.[10]

To effectively deploy energy efficiency solutions in these homes, and to secure the full benefits of energy security and emission reductions, we must include these households as we deploy identified energy efficiency investments. This will also result in lower energy costs for these families, and reduced energy burden.

That said, we must also address energy efficiency for renters, where multi-family households under $60,000 in annual income equal 33.4 million households out of 43.7 million.[11] These families often have little control over the energy efficiency investments in their homes, requiring policies and investments to incentivize landlords, including building performance standards, energy codes, tax incentives, and other mechanisms.

As we consider transportation, efficiency opportunities exist across the sector, including light and heavy vehicles, aviation, marine technologies, and rail. However private investments are costly, and research and development to advance future technologies are required, especially in aviation, rail, and marine engine performance. That said, on-the-road vehicles equal approximately 82% of transportation energy use, which makes the application of fuel efficiency

[8] All data from 2015 EIA RECS.
[9] https://www.aceee.org/press/2018/07/rural-households-spend-much-more.
[10] https://www.aceee.org/press-release/2020/09/report-low-income-households-communities-color-face-high-energy-burden.
[11] All data from 2015 EIA RECS.

standards in addition to investments in alternative fuel vehicles essential to reducing transportation energy demand.[12] As a brief example of the energy efficiency impact of electric vehicle (EV) technology as an alternative, EVs convert up to 77% of the charged energy to the vehicle and braking systems versus 12%-30% for vehicles powered by gasoline.[13]

From the industrial perspective, the U.S. Department of Energy (DOE) has taken the lead through its Better Plants Program, the purpose of which is to improve energy efficiency and sustainability through partnerships with some of the nation's leading manufacturers and water and wastewater treatment agencies. Total program participants equal 3,500 facilities and 13.8% of the U.S. manufacturing energy footprint. Most recent reporting indicates that program participants have avoided more than 1.9 quadrillion Btus and saved $9.3 billion in energy costs.[14] Avoided energy use and energy savings should be increased exponentially but will require greater support for and expansion of initiatives like the Better Plants Program and other related projects, including incentives for manufacturers to increase energy efficiency investments.

With the above in mind, we also see investments in energy efficiency as 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.[15] These vehicles will add 60-95 terra-watt 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.[16]

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[12] https://afdc.energy.gov/conserve/system_efficiency.html.
[13] https://www.fueleconomy.gov/feg/evtech.shtml.
[14] https://betterbuildingssolutioncenter.energy.gov/sites/default/files/attachments/2021_Better_Plants_Progress_Update.pdf.
[15] 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/.
[16] *Id.*

These investments will come at a cost. There will be a cost to develop and deploy the infrastructure, and there will be a cost transferred to consumers and businesses. Brattle estimates that $30-50 billion will be needed for generation and storage, with $15-$25 billion needed for transmission and distribution upgrades, and another $30-$50 billion for charging and customer related infrastructure.

Although some of these costs will be offset as we factor in fuel switching, carbon reductions, and the future ability of EVs to shed and share load, the payback is not immediate.[17] In all likelihood, consumers will realize an increase electricity costs, which will be necessary to ensure that the grid is reliable and able to meet consumer demand. However, energy efficiency can help avoid some of these increased costs, while also adding greater grid reliability.[18]

This is particularly true as we think about Active Efficiency when combined with traditional passive efficiency measures including building envelope retrofits. Active Efficiency reduces consumption through demand flexibility, and also reduces load through technologies that allow appliances, buildings, communities, neighborhoods, and potentially whole cities to shift, share, and shed load on a continuous basis.

In conclusion, the energy transition is here. However, if we fail to lead with energy efficiency, then our investments in the transition will have sealed-in decades of energy waste, in addition to lost savings for consumers. From a policy perspective— including as we think about national security and the nation's energy security— when forwarding policies on electrification, we must lead with energy efficiency. As we deploy renewable generation assets and related transmission and distribution investments, we must lead with energy efficiency. And as we identify future investments in oil, natural gas, coal, and carbon capture, we must lead with energy efficiency. We have the ability through investments in demand-side solutions to directly lower the level, rate, and cost by which we consume our energy supplies.

The focus on energy efficiency in the Infrastructure Investments Jobs Act (IIJA), and what might come out of a budget reconciliation package are a good start, including but not limited to

[17] *Id.*

[18] https://www.ase.org/blog/does-grid-study-many-reminders-success-energy-efficiency.

facilitation of energy code adoption, funding for the Weatherization Assistance Program, grants for schools and non-profits, and other measures. However, congress must also ensure passage of key investments proposed in budget reconciliation, including robust funding of energy efficiency tax incentives, 25C, 45L, and 179D, funding for Hope for Homes, and robust funding for climate bank activity targeting energy efficiency solutions in disadvantaged and tribal communities. And, we would also urge hearings, and consideration of the Main Street Efficiency Act— Alliance to Save Energy-led legislation that specifically targets energy efficiency investments in small businesses. This legislation was introduced by Congressman Peter Welch in the House, and Senator Catherine Cortez-Masto in the Senate.

I thank you for the opportunity to provide testimony as part of today's hearing. As we lead with energy efficiency, we add reliability to our energy supplies, we increase national and energy security, we help to ensure greater energy affordability, and we reduce carbon emissions. It is worth repeating— that through energy efficiency alone, we can reduce carbon emissions by 50% by 2050. And through energy efficiency we can achieve 40% of the reductions required by the Paris Climate Agreement. Thank you again for the opportunity, and I look forward to your questions.