Statement of

Paula R. Glover
President
Alliance to Save Energy

Before the

U.S. SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

March 16, 2022

The Alliance to Save Energy submits this statement for the record concerning the hearing, titled *Hearing to Examine the Use of Energy as a Tool and a Weapon*, before the Senate Committee on Energy and Natural Resources on March 10, 2022.

Introduction

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, and reliability.

Founded in 1977 by Senators Charles H. Percy (R-Ill.) and Hubert Humphrey (D-Minn.), the Alliance was launched at a pivotal time not dissimilar to today when the oil embargos of the 1970s 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.

The Effect of Supply and Demand Side Solutions

Supply side solutions are essential to the nation's energy security and are also critical to the issues of energy reliability and affordability. This is particularly true if the U.S. is to maintain readiness to respond to geopolitical conflicts directly impacting energy availability and costs while simultaneously addressing the challenges of climate change. As a result of the nation's response to

the energy crisis of 70s, in just over four decades the U.S. has positioned itself as a leading global energy producer, and in 2019 became a total net energy exporter for the first time since 1952.[1]

Energy efficiency as a demand side solution lowers energy intensity throughout all sectors of the U.S. economy, including industry and manufacturing, transportation, and the built environment. In fact, without the energy efficiency investments made since 1980, energy consumption would have been 60% higher.[2] Moreover, these same investments avoided approximately $800 billion more per year in energy cost for consumers. Investments in energy efficiency result in less demand for energy supply, and also has the effect of making energy more affordable and less carbon intensive.

Investing in Energy Efficiency in Major Economic Sectors

As a general rule, U.S. energy consumption is measured in sectors, including industrial (36%), transportation (35%), residential (11.5%), and commercial (8.7%).[3] Robust demand side investments and solutions should be targeted toward each to directly impact sector consumption levels.

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.[4] 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.

Transportation efficiency opportunities exist across the sector, including light and heavy vehicles, aviation, rail, and marine technologies. 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, and the application of fuel efficiency standards in addition to investments in alternative fuel vehicles is essential to reducing transportation energy demand.[5] As an example of the energy efficiency impact of electric vehicle (EV) technology versus gas powered, EVs convert up to 77% of the charged energy to the vehicle and braking systems versus 12%-30% for vehicles powered by gasoline.[6]

Residential energy consumption is mostly found in space heating and air conditioning (51%), followed by water heating, lighting, and refrigeration (27%), ending with home devices such as televisions, cooking appliances, washers, dryers, computers, etc. (21%).[7] Significant gains have been

[1] https://www.eia.gov/energyexplained/us-energy-facts/imports-and-exports.php.
[2] https://energyefficiencyimpact.org.
[3] https://www.eia.gov/energyexplained/us-energy-facts/ (includes electric power sector).
[4] https://betterbuildingssolutioncenter.energy.gov/sites/default/files/attachments/2021_Better_Plants_Progress_Update.pdf.
[5] https://afdc.energy.gov/conserve/system_efficiency.html.
[6] https://www.fueleconomy.gov/feg/evtech.shtml.
[7] https://www.eia.gov/energyexplained/use-of-energy/homes.php.

achieved over the years to increase energy efficiency in the residential built environment, particularly through the Department of Energy's (DOE) Appliance and Equipment Standards Program. Since 2009, the program has issued over 42 new and updated standards including more than 45 products, projected to equal 43.8 quads in energy savings through 2030.[8] This results in over $540 billion in energy bill savings for consumers.

Federal investments and incentives directly connected to the residential built environment are essential to motivate reductions in energy consumption for homeowners and renters. This includes— robust support for equipment and appliance standards and related research and development to forward active efficiency technologies such as grid integrated appliances and equipment; expansion and increased values for tax incentives such as 25C and 45L; rebates and grants for moderate and low-income consumers; and other efforts. Additionally, the development and application of up-to-date energy codes and building performance standards will also be required.

As we consider commercial energy consumption, warehouse and storage, office, and service buildings account for 48% of all commercial buildings and equal 42% of U.S. commercial floor space.[9] Mercantile, public assembly, religious worship, education, and lodging, together equal 45% of total floorspace, at 11%, 7%, 6%, 14%, and 7% respectively. All other building types— healthcare, food service, food sales, public order and safety, vacant, and other, equal 12%. To effectively curtail commercial energy consumption, policymakers should optimize the 179D deduction for commercial buildings; increase research and development efforts to forward the application of active efficiency technologies such as grid-integrated enabled buildings; incentivize the development and application of commercial energy codes and building performance standards; and support more robust investments in making federal and other government buildings more energy efficient.

Conclusion

We already know that the nation's limited investments in energy efficiency since 1980 have prevented energy consumption from being 60% higher than it would otherwise be today. However, we also know that we still have significant opportunities to reduce energy demand, with 19.2 quads of wasted energy in transportation, 12.9 quads in industrial and manufacturing, 4.01 quads in the residential sector, and 3.03 quads in commercial.[10] To convert this energy waste to greater energy security and affordability, policy makers must focus on energy efficiency demand side solutions that will result in energy savings for consumers and businesses.

These energy efficiency investments will also result in a reduction in carbon emissions, positively impacting the nation's response to climate change— without jeopardizing energy supply. As indicated in the recent report *Halfway There*, energy efficiency alone can reduce carbon emissions by 50% by 2050, achieved through energy efficiency investments in targeted parts of the U.S.

[8] https://www.regulations.doe.gov/eecompass/appliance-standards.
[9] https://www.eia.gov/consumption/commercial/data/2018/pdf/CBECS_2018_Building_Characteristics_Flipbook.pdf.
[10] https://flowcharts.llnl.gov/content/assets/images/charts/Energy/Energy_2020_United-States.png.

economy, including but not limited to industrial and manufacturing, transportation, residential, and commercial.[11] That said, the International Energy Agency (IEA) concludes that over 40% of the emission reduction objectives of the Paris agreement can be achieved by 2040 through energy efficiency.

The Alliance urges the Committee to prioritize investments in energy efficiency similar to what occurs for supply side resources. Doing so will optimize our nation's economic growth while strengthening energy security, affordability, resiliency, and reliability— concurrent with solutions to address climate change.

[11] https://www.aceee.org/fact-sheet/halfway-there.