Environmental and Energy Study Institute

Testimony of Daniel Bresette
Executive Director
Environmental and Energy Study Institute

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Full Committee Hearing on Energy Efficiency Efforts in the United States and Internationally

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Thank you, Chairwoman Murkowski and Ranking Member Manchin, for the opportunity to join you today to discuss energy efficiency and its potential to reduce greenhouse gas emissions, stimulate innovation and new economic growth, promote climate adaptation and resilience, and help make our transition to a decarbonized, clean energy future that is more affordable and accessible for all Americans. I hope we all agree that energy efficiency is not about sacrifice. Instead, energy efficiency is how we make something work as well or better while consuming fewer scarce resources and generating less harmful pollution and waste.

I am the executive director of the Environmental and Energy Study Institute, which was founded in 1984 on a bipartisan basis by members of Congress to help educate and inform policymakers, stakeholders, and the general public about the benefits of a low-emissions economy. In 1988, EESI declared that addressing climate change is a moral imperative--a sentiment that has since guided our work. Today, we are fully engaged in the climate change policy debate and committed to working with members of this committee, your fellow senators, and your colleagues in the House of Representatives to find solutions to the terrible problem of a rapidly warming planet.

The urgency of climate change requires immediate action at home and abroad. Energy efficiency provides the easiest, quickest source of significant, measurable emissions reductions. According to a recent report, optimizing energy efficiency "…can slash U.S. energy use and greenhouse gas emissions by 50% by 2050, getting us halfway to U.S. climate goals."[1] And this report also emphasizes one key reason energy efficiency is the secret weapon in the fight against climate change: we already have what we need—in terms of policies, technology, techniques, and program design—to do what we need to do and make those remarkable gains. Building energy codes; minimum standards for appliances, equipment, and lighting products;

[1] "Halfway There: Energy Efficiency Can Cut Energy Use and Greenhouse Gas Emissions in Half by 2050." American Council for an Energy-Efficient Economy, 18 September 2019, https://aceee.org/sites/default/files/publications/researchreports/u1907.pdf.

software and controls; high-performance building materials and standards; sustainable design practices; and the list goes on. The missing piece is the magnitude of our commitment, which currently pales in comparison to the enormity of the challenge.

Congress has the ability to reestablish U.S. leadership in global efforts to reduce greenhouse gas emissions. For those concerned that the burden of efforts could fall unduly or unfairly on the U.S. and domestic interests, I suggest instead that we will have more authority to lead if we do ourselves what we ask of others. And this starts with energy efficiency—especially as it pertains to federal buildings. There is simply no excuse for inefficient federal buildings that needlessly waste scarce taxpayer dollars. As Americans, we have every right to expect our departments and agencies to exercise good judgment, make good investments, and spend our collective resources on good uses. Wasted energy hardly meets any of those criteria. Considering only energy efficiency measures identified in professional audits of federal facilities, there is a backlog of over $8.6 billion in measures that would lower utility bills and reduce greenhouse gas emissions if implemented (often by leveraging private-sector capital at no cost to taxpayers).[2] That list of idle projects could disappear tomorrow if Congress chose to reassert federal leadership in energy efficiency by passing, for example, legislation proposed by this committee's leadership and members.[3]

The building sector accounts for about 40% of U.S. greenhouse gas emissions.[4] According to the U.S. Environmental Protection Agency's ENERGY STAR® program, about 30% of energy used in commercial buildings is wasted.[5] The contribution of emissions from buildings is often underappreciated in climate policy conversations. So too is the potential for widely-available, cost-effective energy efficiency to deliver meaningful, near-term savings. I appreciate the committee's interest in this important topic by calling this hearing. And, in fact, there are a number of policy proposals, including many bills already considered and approved by this committee, that would reduce greenhouse gas emissions and set the U.S. on a track to meet global commitments while lowering utility bills for American homeowners, consumers, and businesses. Every kilowatt and kilowatt-hour saved today, if these bills were passed and enacted, would make future commitments to address climate change easier and less expensive to attain.

Although the federal government's current commitment to climate change action falls short of its traditional leadership role in world affairs, state and local governments are rising to the challenge to reduce U.S.-sourced greenhouse gas emissions. For example, the U.S. Conference of Mayors has repeatedly and explicitly endorsed updated building energy codes as a key

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[2] "Performance Contracting Measuring Success." Federal Energy Management Program, 8 November 2018, www.energy.gov/sites/prod/files/2018/11/f57/22-fupwg_fall_18_vallina.pdf.

[3] See S. 1857, the Federal Energy and Water Management Performance Act of 2019, introduced by Chairwoman Murkowski on June 13, 2019.

[4] "About the Building Technologies Office." U.S. Department of Energy, https://www.energy.gov/eere/buildings/about-building-technologies-office.

[5] "Save Energy." U.S. Environmental Protection Agency, ENERGY STAR, https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/save-energy?s=mega.

pathway to net-zero buildings by mid-century and a low- or no-cost source of emissions reductions in the meantime.[6] The next version of the model building energy code—the International Energy Conservation Code—is currently in development. The outcome of this process is uncertain, but governors and mayors understand that setting cost-effective energy efficiency requirements for new homes and commercial buildings is among the lowest-cost policy options at their disposal to reduce emissions and save residents and businesses billions of dollars over the next two decades and beyond. This committee recently approved legislation now on the Senate calendar that would encourage states and local governments to go beyond the model building energy code and provide technical and financial assistance to train code officials to improve compliance and enforcement—and therefore help ensure expected emissions reductions are actually realized.[7]

Many states and local governments are aiming even higher, leveraging the potential of energy efficiency to set the leading edge in climate change and clean energy policy development, as well as resilience, adaptation, and mitigation. California, to name one of many examples, has set aggressive emissions reductions goals that involve increased energy efficiency in new and existing buildings along with ambitious renewable energy deployments.[8] In the latest ranking of state energy efficiency efforts, the trend is clear: "[a] rising number of states are showing U.S. leadership on clean energy by adopting ambitious goals and energy-saving rules for buildings, appliances, and vehicles…."[9]

One area of state and local government innovation of special interest to EESI is the expansion of energy efficiency financing programs, which in some cases are administered by quasi-governmental entities (i.e., "green banks"). States and local governments have an abundance of creativity, but are too often constrained by a lack of seed capital to initiate financing programs for underserved or hard-to-reach segments (e.g., single-family homes, multifamily housing) or establish credit enhancements to leverage private-sector capital. In this case as well, legislation either approved by or pending before this committee would help financing programs proliferate and encourage investments in energy efficiency. One such bill is the chairwoman's own proposal to expand eligibility of U.S. DOE's existing loan guarantee program to state energy financing institutions.[10] A second is the provision of the Energy Savings and Industrial Competitiveness Act—a version of the Sensible Accounting to Value Energy (SAVE)

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[6] "Adopted Resolutions—87th Annual Meeting." The United States Conference of Mayors 87th Annual Meeting, June and July 2019, https://www.usmayors.org/the-conference/resolutions/?category=a0D4N00000FCe8zUAD&meeting=87th%20Annual%20Meeting.

[7] See S. 2137, the Energy Savings and Industrial Competitiveness Act, introduced by Senator Rob Portman on July 17, 2019.

[8] "Welcome to California!" California Energy Commission, National Association of State Energy Officials Annual Meeting, 16 September 2019, https://annualmeeting.naseo.org/data/energymeetings/presentations/McAllister-Opening.pdf

[9] "The State Energy Efficiency Scorecard." American Council for an Energy Efficient Economy, https://aceee.org/state-policy/scorecard.

[10] See S. 2399, a bill to amend the Energy Policy Act of 2005 to improve State loan eligibility for projects for innovative technologies, introduced by Chairwoman Murkowski on July 31, 2019.

Act—that would help ensure homeowners realize a fair return on their investments in building envelope improvements, high-efficiency equipment, and other cost-effective measures.

EESI is acutely aware that many costs incurred in the race to address climate change could unfortunately impact people and communities least able to afford or access the benefits of a transition to a decarbonized, clean energy economy. Earlier this year, at a Capitol Hill briefing hosted by EESI, energy efficiency experts described a dire situation for many rural Americans who on average pay about 40% more for energy compared with their fellow citizens in urban areas.[11] It is imperative that we do everything we can to avoid this very negative outcome. Some efforts like the Weatherization Assistance Program, which has helped improve home energy efficiency for seven million low-income American families, are too resource-constrained.[12] To reiterate an earlier point, we have the tools we need. What we lack is a commitment to provide the resources to achieve the necessary greenhouse gas reductions. Once again, energy efficiency provides a cost-effective solution to a difficult problem, especially when implemented with funding provided by carefully-administered financing programs.

EESI's experience with "on-bill financing" programs offered by municipal utilities and electric cooperatives to their customers is illustrative of how cost-effective energy efficiency retrofits, facilitated by low-interest loans, can reduce the up-front cost hurdle for homeowners and renters of improvements that deliver lower monthly energy bills. In on-bill financing programs, monthly savings from cost-effective energy efficiency measures are directed back to the utility (or program administrator) using an energy bill line-item charge to repay the loans extended to customers. The end result for participating customers, including those with lower incomes or who live in rural or disadvantaged communities, is more affordable and sustainable housing without costly or restrictive debt obligations. The policy implications are far-reaching, including lower greenhouse gas emissions, increased access to money-saving home improvements, healthier homes, and in some areas beneficial electrification of heating equipment and personal vehicles.

Municipal utilities and electric cooperatives across the country are today in various stages of developing and implementing on-bill financing with support and technical assistance from EESI.[13] For example, in Juneau, Alaska, a non-profit community partnership—Alaska Heat Smart—is collaborating with the local city and borough governments, Juneau Commission on Sustainability, Juneau Economic Development Council, Alaska Electric Light and Power, and other partners to deploy innovative financing to accelerate high-efficiency heat pump adoption. As the chairwoman knows, thousands of homes in greater Juneau are heated with expensive oil or inefficient electric resistance baseboard units and suffer from air leakages and insufficient

[11] See summary of comments from Mary Shoemaker, "Equitable Solutions to Rural Energy Burdens." Environmental and Energy Study Institute, 16 July 2019, https://www.eesi.org/briefings/view/071619ruralenergy.
[12] "Weatherization Assistance Program." U.S. Department of Energy, https://www.energy.gov/eere/wipo/weatherization-assistance-program.
[13] According to EESI's research, there are currently more than 100 on-bill financing programs offered by utilities in the U.S. The considerable majority of these programs are operated or administered by rural electric cooperative and public utilities. See https://www.eesi.org/obf/map.

insulation. Together with cold-climate heat pumps and basic weatherization measures, this undertaking has the potential to lower utility bills for Alaskan families and help Juneau meet its climate and clean energy goals.

In Hawaii, with support from the state's green bank, the Green Energy Monday Savers program features an on-bill financing mechanism for energy efficiency, solar water heating systems, and renewable energy installation. There are many examples of on-bill financing programs in the Lower 48 as well, including the Orcas Power and Light Cooperative's Switch it Up! Program that serves the San Juan Islands in northwest Washington. Much of the recent activity in on-bill financing stems from the U.S. Department of Agriculture's Rural Energy Savings Program and its ability to streamline its application process and deploy appropriated funds as no-interest loans to rural utilities. While not subject to the committee's jurisdiction, this is another example of state and local innovation made possible by federal policy and funding.[14]

EESI's experience with on-bill financing programs in rural areas suggests that this program design could be deployed overseas as well, especially in regions where credit is scarce and monthly incomes are low. In addition to savings, the measures financed by these programs often offer considerable resilience benefits including better thermal performance of walls and windows Improved building energy efficiency will also help limit demand increases that will follow more widespread installations of cooling equipment to provide relief from rising temperatures.

In conclusion, I would like to step back from the details of energy efficiency and ask for your consideration of a broader point. While energy efficiency offers unique benefits, its potential is best viewed as an element in a full set of clean energy solutions. I encourage the committee to consider the compounding effect of stacking energy efficiency policies along with other decarbonization and clean energy policies to stimulate advancements in and greater deployments of renewable energy, transmission and grid modernization technologies, storage, and the full host of complementary sources of emission reductions. In addition, climate adaptation and resilience legislation is complementary to these efforts to safeguard the energy system, and other critical infrastructure, from the impacts of disasters and extreme weather. It is commonly said that energy efficiency should come first. I agree, but that does not mean it should go alone.

Thank you for the opportunity to discuss the potential of energy efficiency, enhanced by available policies and implemented using widely-available technologies and techniques, to deliver near-term, achievable greenhouse gas emissions. I appreciate the committee's focus on this critical issue. I would be glad to answer any questions today and provide any additional information for the record at your request.

[14] RESP was first authorized as part of the 2014 Farm Bill (Agricultural Act of 2014, P.L. 113-79, 128 Stat. 649). Congress has appropriated funds for RESP each fiscal year since then, on an increasing basis because of the program's popularity and the demand by rural utilities for no-interest loans for on-bill financing programs.