ACEEE Fact Sheet
American Council for an Energy-Efficient Economy

Clean Infrastructure: Efficiency Investments for Jobs, Climate, and Consumers

Key Takeaways

Proposed energy efficiency investments could achieve

- 4.3 million added jobs over the lifetime of the investments and savings
- 3.7 billion tons of reduced carbon dioxide emissions
- $321 billion in energy bill and other consumer savings

Energy efficiency investments can create jobs now and reduce greenhouse gas (GHG) emissions for years to come while also saving money for consumers and businesses and improving public health. This is especially true for low-income families and communities of color, who have been disproportionately affected by the pandemic and economic recession. Efficiency investments can put people back to work throughout the economy, including the hundreds of thousands of efficiency workers who lost their jobs in the pandemic. The investments are also a down payment on deploying efficiency to cut U.S. GHG emissions in half.

We estimated the energy saved, carbon emissions avoided, and jobs added due to proposed energy efficiency investments in homes and commercial buildings, manufacturing plants, electric vehicles, transportation infrastructure, states, and cities. These investments are designed for both economic and environmental benefits, and they promote social equity through increased investment in affordable housing. They can be implemented quickly, often using existing federal programs. They generally employ local construction workers and use equipment and components manufactured domestically. And because of their energy savings and other benefits, federal investments can leverage private funds to increase their impacts.

Overall Results

We looked at a "base" package of proposals and a "big" package with larger investments. We estimate that the base investments would result in almost 1.9 million more people working for a year (*job-years*), and the big investments in 4.3 million job-years, over the lifetime of the investments and savings. As shown in figure 1, during the largest investments, the proposed packages would add about 200,000 and 450,000 jobs each year, respectively, with further job impacts after 2031 due to saving energy and repaying the cost of the investments.

Over time, the investments would result in roughly 2.4 (base) or 4.3 (big) billion metric tons of reduced carbon dioxide emissions, roughly the total U.S. emissions for 6 or 9 months; they would produce more than $250 or $320 billion in lower energy bills and other net benefits for consumers (present value). The investments would also help develop long-term markets for advanced clean technologies and practices, and bring further economic and environmental benefits we did not quantify.

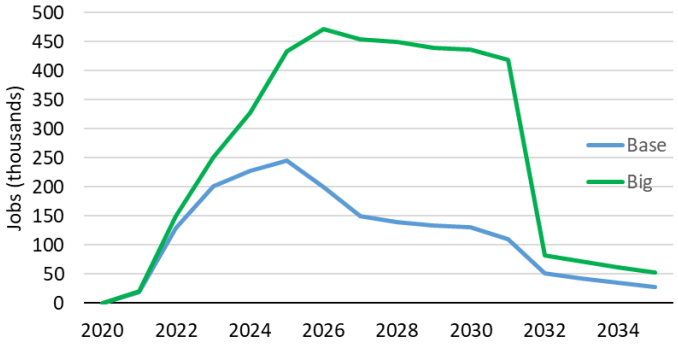

Figure 1. Net added jobs by year for the two packages of efficiency investments

The American Council for an Energy-Efficient Economy (ACEEE), a nonprofit research organization, develops transformative policies to reduce energy waste and combat climate change.

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Results by Investment

Table 1 shows the impacts by proposed investment. The largest investments create the most jobs; completing millions of home energy upgrades alone could add 1.7 million job-years. Size of investment also matters for reducing GHG emissions, but some of the greatest reductions are from industrial programs, for which we expect large savings per dollar invested and rapid payback. The greatest leverage of private capital is for heat pump water heaters, some industrial programs, commercial building improvements, and electric trucks.

The most-transformational long-term market impacts would be from deploying heat pumps and heat pump water heaters, commercializing new low-carbon industrial technologies, and building new zero-energy homes and commercial buildings.

Low-income home improvements, including in affordable rental housing, bring health benefits and help those households most in need. Industrial measures yield benefits—from waste reduction and improved products—that can exceed their energy savings.

Pumping money into the economy in job-intensive sectors such as construction creates jobs, regardless of the kind of investment. Energy efficiency investments do that and more. They also create long-term jobs and economic growth through energy savings that typically pay back more than the initial investment. The energy savings reduce GHG emissions and air pollution, help consumers and businesses financially, and can benefit the health and finances of overburdened households. Efficiency investments are effective as stimulus, as the foundation for a clean economy, and as assistance for American consumers and businesses.

Table 1. Net cumulative impacts from the proposed investments

	Base package				Big package			
	Federal investment (PV $billion)	Total jobs created (thousand job-years)	CO_2 emissions avoided (MMT)	Net savings (PV $billion)	Federal investment (PV $billion)	Total jobs created (thousand job-years)	CO_2 emissions avoided (MMT)	Net savings (PV $billion)
Buildings								
LI weatherization	3.8	15	12	0.1	6.6	26	23	0.2
LMI multifamily		Included under HOMES			47.8	509	198	-0.7
HOPE4HOMES	7.3	118	72	5.7	73.0	1,218	661	43.1
Heat pump incent.					5.4	444	392	24.0
Building incentives	28.7	698	323	13.4	31.9	1,046	445	21.5
Industry								
Energy management	3.1	172	482	90.5	3.1	172	482	90.5
Innovation	9.2	376	1,237	129.8	9.2	376	1,237	129.8
Transportation								
EV incentives	41.8	220	164	8.6	41.8	220	164	8.6
Transport CO_2 progs.	6.6	102	54	1.2	6.6	102	54	1.2
Cross-cutting								
State and local progs.	6.5	99	65	3.3	6.5	99	65	3.3
Total	**107.1**	**1,800**	**2,410**	**252.8**	**232.1**	**4,213**	**3,721**	**321.5**

PV is discounted present value; MMT is million metric tons. While there would be some overlap between the home energy retrofit programs and the home improvements tax credit, we believe the reduction in savings would be small and do not include it here.

Proposals

The proposals we analyzed include the following:

Buildings

- *Weatherization Assistance Program:* Fund local community agencies to provide home energy upgrades for low-income families.
- *HOPE4HOMES:* Implement new U.S. Department of Energy and state rebate programs for home energy upgrades and contractor training. The "big" version is expanded to reach 20 million homes and to include added rebates for electrification.
- *Multifamily program:* Fund energy upgrades and health and safety improvements to low- and moderate-income multifamily housing (GREAHT proposal).
- *Heat pump incentives:* Provide manufacturers an incentive for increased production of heat pumps and heat pump water heaters.
- *Building tax incentives:* Improve tax incentives for home improvements (25C), new homes (45L), and new and improved commercial buildings (179D) based on Senate proposal (the "base" version reduces use of 45L and 179D due to prevailing wage requirements).

Transportation

- *Electric vehicle tax credits:* Expand tax credits for electric passenger vehicles and electric chargers and add a new credit for electric trucks.
- *Transportation carbon reduction programs:* Implement proposed transportation bill programs to fund investments to reduce fuel use and emissions.

Industry

- *Energy management:* Provide technical and financial help to large, medium, and small industrial plants to reduce their energy costs and GHG emissions through assessments and strategic energy management.
- *Innovation:* Provide matching funds for the first full-scale commercial implementation of innovative technologies and support innovation in industrial clusters and supply chains.

Cross-cutting

- *State and local energy program:* Fund state energy offices (SEP) and local governments (EECBG) to implement a wide range of energy efficiency, renewable energy, and energy resilience measures.

Methodology

For each proposal, we modeled federal and leveraged investments, national energy savings by fuel, resulting monetary and emissions savings, and additional direct benefits. These are projections for what we believe is a likely scenario for implementation, not maximum potential impacts, and they are the net change compared to a baseline scenario in which the proposals are not enacted. Assuming the measures are enacted in early fall 2021, the investments start in 2021 or 2022 and mostly continue through 2031 (with further private investment through 2050 in a few cases). We modeled the savings and the financing costs (including for federal investments) for up to 30 years, reporting dollar amounts as present values with a real 5% discount rate. Using our DEEPER input-output model, we estimated how many jobs would be created and lost due to the investment of government and consumer funds into the efficiency measures (and the loss of other uses of those funds) and due to the consequent consumer energy bill savings (and losses to utilities and fuel providers).