

Energy Efficiency Should Be Included in a Reconciliation Clean Grid Plan

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President Biden has proposed an Energy Efficiency and Clean Electricity Standard (EECES), yet in congressional discussions about including clean electricity policy in a budget reconciliation bill, the “EE” sometimes gets lost. As a recent ACEEE policy brief shows, however, reducing electricity demand is critical to achieving the climate and consumer benefits of a CES.¹

ENERGY EFFICIENCY LOWERS COSTS, IMPROVES EQUITY, AND HELPS INTEGRATE RENEWABLES

Energy efficiency resource standards have a strong track record. To date, 27 states and the District of Columbia have energy efficiency targets for electricity and 19 states have them for natural gas; these targets commonly accompany a clean electricity standard – and often greenhouse gas goals as well. On average, states with a performance standard deliver four times the level of electricity savings (1.2% new savings per year) as states without a standard (0.3% new savings per year).

Energy efficiency remains the cheapest way to meet demand and cut emissions. The average cost of efficiency programs among large utilities is now 2.4 cents/kilowatt-hour (kWh). Because about 60% of electricity still comes from fossil sources, these programs cut power sector carbon dioxide (CO₂) emissions significantly, and utility programs that save natural gas add further reductions.

Energy efficiency can benefit everyone. In addition to saving on energy bills, efficiency measures can improve indoor air quality and comfort, and reduce asthma and stress – especially for low-income homeowners and renters. Such measures can also help support resilience in extreme weather.

Managing demand helps integrate variable renewable sources. One study found that wind, solar, and storage could save \$3.5 billion compared to proposed new natural gas plants; adding energy efficiency and demand flexibility would enable another \$25.5 billion in savings.²

Managing demand helps integrate new electric loads. Shifting to electric heating, cooling, and vehicles typically reduces overall energy use, but it can also increase electricity use by more than half and shift peak demand to winter mornings, when less solar power is available. Better-sealed buildings, high-efficiency heat pumps, and smart equipment can reduce winter peak demand.

ENERGY EFFICIENCY CAN BE PART OF CLEAN ELECTRICITY POLICY UNDER RECONCILIATION

As with a clean electricity standard, energy efficiency programs can be included in a clean grid plan under reconciliation procedures – using some combination of payments for exceeding a target savings level and fees for failing to meet a threshold. Targets could be joint or separate. Almost all states have adopted separate savings and supply targets to ensure that both are used to meet energy and climate goals, and we propose separate targets below. However, a combined target could increase flexibility for utilities. Although it is more difficult to measure and verify savings than generation, there are existing protocols and a network of professional evaluators to ensure that the savings are real. Short of efficiency targets, using some of the payments (and perhaps fees as well) to run efficiency programs could achieve some of the above benefits from reducing demand.

A PROPOSAL FOR UTILITY ENERGY-SAVING TARGETS IN A RECONCILIATION BILL

We propose that the U.S. Department of Energy (DOE) establish annual energy-savings targets for large and medium-sized electric and natural gas utilities.³ Each utility’s goals for the first year would start at the level of the savings it achieved in 2021; each year thereafter its added savings would then increase by 0.25% of sales, up to 2.5% for electric and 1.25% for gas (these caps are based on what leading utilities

are now doing). So a utility that attained 1% savings in 2021 would have a target of 1% in 2022, 2.25% in 2023 – that is, the continued savings from 2021 programs plus an additional 1.25% – 3.5% in 2023, and so on up to 19.75% in 2031.

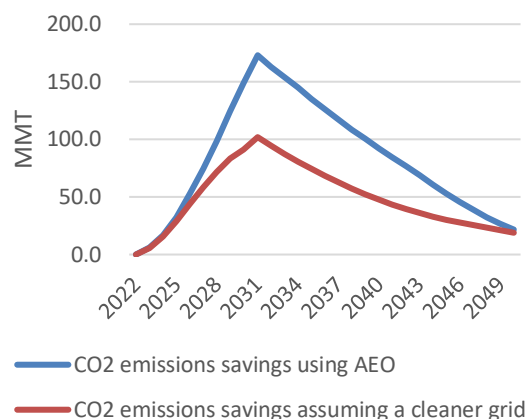
Savings would be measured relative to business-as-usual practices and could come from energy efficiency programs, reductions in distribution system losses, and new building codes and equipment efficiency standards, including savings from combined heat and power systems and from fuel switching (assuming the utility plays a substantial role in achieving these savings). DOE would pay utilities 3 cents for each kWh of electricity and \$3 for each million British thermal units (Btus) of natural gas that they save beyond their targets, and it would charge a penalty of double that for each kWh or million Btus below the target when a utility falls short.⁴

SAVINGS TARGETS WOULD HAVE LARGE CLIMATE AND SMALL BUDGET IMPACTS

ACEEE analyzed the impacts of the proposed efficiency targets, using the *2021 Annual Energy Outlook* (AEO) as a foundation and applying data from states that implement utility efficiency programs.

Federal budget impact. Currently, about 80% of utilities exceed their efficiency standards and 20% fall short.⁵ If utilities achieved this level of success for the proposed standard, the 10-year cost to the federal Treasury would be about \$10 billion. However, utilities not yet implementing substantial efficiency programs may be less likely to exceed the federal targets. So, if 50% exceed the standards and 50% fall short, net income to the Treasury would be about \$4 billion, with penalties slightly exceeding payments.

Greenhouse gas reductions. If the saved energy's carbon intensity is the average intensity in the AEO Reference Case, the cumulative CO₂ savings would be approximately **730 million metric tons (MMT)** over 10 years and **2,400 MMT through to 2050** (assuming that savings last an average of 11 years). This is twice as large as any of the other policy measures that ACEEE has recently examined.⁶ If the carbon intensity is the average of a grid that reaches 80% clean by 2030, cumulative CO₂ savings would be about two-thirds as high; but if the savings are all used to further reduce fossil generation, the savings could be almost twice as high.



Consumer benefits and costs. We estimate that 10 years of efficiency programs will cost utilities and consumers approximately \$125 billion each (discounted present value) for their respective cost shares for the efficiency measures and programs. But these measures will reduce consumer energy bills by approximately \$410 billion over the life of the measures, yielding net savings of about **\$160 billion** and a benefit-cost ratio of 1.6.

¹ aceee.org/policy-brief/2021/07/energy-efficiency-clean-electricity-standard-managing-demand-key-cheaper-and

² [rmi.org/insight/clean-energy-portfolios-pipelines-and-plants/\(see first report listed\)](https://rmi.org/insight/clean-energy-portfolios-pipelines-and-plants/(see%20first%20report%20listed)).

³ The program would apply to electric utilities that sell more than 1 billion kWh per year at retail and to natural gas utilities that sell more than 5 billion cubic feet of natural gas per year. Using 2019 data, these targets would apply to approximately 373 electric utilities and 165 natural gas utilities.

⁴ The penalties are based on the cost of the most expensive utility programs, and the payments are lower because a majority of utilities may exceed their targets. Our target is a program in which payments and penalties offset each other.

⁵ aceee.org/research-report/u1905.

⁶ aceee.org/fact-sheet/2021/06/clean-infrastructure-efficiency-investments-jobs-climate-and-consumers.