The Clean Electricity Performance Program (CEPP): In Brief

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The Clean Electricity Performance Program (CEPP) is a policy aimed at reducing greenhouse gas emissions (GHG) in the electric power sector. Details of the program were included in House Committee on Energy and Commerce budget reconciliation legislative recommendations (House E&C text) pursuant to its directives in the FY2022 budget resolution (S.Con.Res. 14). The House E&C text forms the basis of this analysis. Details could change as Congress continues to consider the proposal.

Under the proposed CEPP, the U.S. Department of Energy (DOE) would issue grants to electric utilities that achieve designated annual clean electricity targets and collect payments from electric utilities that underachieve targets. The targets would cover calendar years 2023-2030 and apply to all electric utilities in the United States.

Each electric utility would have an initial target reflecting its 2019-2020 average share of clean energy used for electricity generation (i.e., clean electricity). The House E&C text defines clean electricity as that produced by a generator with a carbon intensity of not more than 0.1 metric tons carbon dioxide equivalent per megawatt-hour (tCO2e/MWh). Generally, this definition would include most renewable energy and nuclear energy, and exclude fossil fuel.

Each utility’s target would increase four percentage points annually (e.g., from 25% to 29%). For context, the nationwide increase in clean electricity has been one percentage point on average over the last 10 years.

In general, utilities that achieve their annual target would receive grants from the federal government equal to $150 for every MWh greater than 1.5% above the prior year’s clean electricity sales. In other words, the first 1.5% increase in clean electricity in a year would not be eligible for payment, but all increases above that level would be eligible for payments (provided the utility increases by at least four percentage points annually). Utilities that do not achieve their annual target would owe payments to the federal government equal to $40 for every MWh “shortfall,” the difference between a four percentage point increase and the utility’s actual clean electricity share for the year.

Some aspects of the CEPP mirror a clean energy standard (CES), a policy with similar GHG reduction goals to which the CEPP is frequently compared. One chief difference between the CEPP and a CES is the expected budgetary impact. A CES generally would be expected to put compliance costs largely on electricity customers. In contrast, the CEPP would shift some compliance costs to federal taxpayers. According to some press sources, the CEPP is estimated to increase the federal deficit by $150 billion over the next 10 years.

The financial grants and payments in the CEPP could encourage the increased use of clean electricity and achieve reductions in electricity sector emissions; however, the CEPP provisions do not guarantee reductions. Electric utilities may face cost or other constraints (e.g., siting challenges, state and local regulatory requirements, reliability risks) on achieving CEPP targets. In such cases, the CEPP grant and penalty incentives may not be sufficiently large to overcome other hurdles to achieving four percentage point annual growth in clean electricity.

Questions remain regarding how the CEPP would interact with existing state clean electricity requirements and voluntary utility clean electricity goals. Some utilities with existing plans to achieve or exceed the CEPP targets might receive “windfall” payments under the CEPP whereby their customers pay less than currently anticipated for the same electricity generation mix (the House E&C text restricts use of grants “exclusively for the benefit of the ratepayers,” so any financial payment would not accrue to the electric utility). Combined, state targets and utility goals with comparable targets as the CEPP cover 69% of total U.S. electricity sales, though few existing policies would achieve their targets by 2030 (the final year of the CEPP).

As debate continues on the CEPP, Congress could choose to evaluate these and other policy considerations and options to address them. Were the CEPP to remain a priority—and be deemed in compliance with procedural rules such as the Senate’s Byrd rule—Congress might consider how to address policy considerations within the constraints of budget reconciliation.
The Clean Electricity Performance Program (CEPP) has been proposed in the 117th Congress as a policy aimed at reducing greenhouse gas emissions (GHG) in the electric power sector. The CEPP sometimes is referred to as a clean energy standard (CES), although the CEPP and a CES generally are seen as different policies.

This analysis summarizes the key elements of the proposed CEPP included in House Committee on Energy and Commerce (House E&C) budget reconciliation legislative recommendations (hereinafter, House E&C text). This analysis also identifies some potential considerations for lawmakers.

Clean Electricity Performance Program Overview

The CEPP is designed as a grant program combined with financial penalties. Electric utilities that achieve designated clean electricity targets would be eligible for payments from the federal government, and utilities that underachieve targets would be assessed a penalty. The House E&C text does not specify how any federal revenue collected from penalties would be used. The CEPP would be administered by the U.S. Department of Energy (DOE) and be in effect from calendar year 2023 to 2030.

Each electric utility would have an initial target reflecting its current share of clean energy used for electricity generation (i.e., clean electricity). The House E&C text defines clean electricity as that produced by a generator with a carbon intensity of not more than 0.1 metric tons carbon dioxide equivalent per megawatt-hour (tCO$_2$/MWh). Generally, this definition would include most renewable energy, nuclear energy, and potentially some fossil fuel-fired generators using

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1 The Clean Electricity Performance Program (CEPP) sometimes is referred to as the Clean Electricity Payment Program.

2 A clean energy standard (CES), sometimes called a clean electricity standard, is a requirement on electric utilities to procure defined amounts of electricity from eligible “clean” energy sources by a defined date. A key feature is the use of tradeable credits to demonstrate compliance. The credits have value as a commodity, creating a potential additional revenue source for eligible “clean” generators and thus incentivizing their deployment. For background information about a CES, see CRS Report R45913, *Electricity Portfolio Standards: Background, Design Elements, and Policy Considerations*, by Ashley J. Lawson. For information about CES proposals in the 117th Congress, see CRS Report R46691, *Clean Energy Standards: Selected Issues for the 117th Congress*, by Ashley J. Lawson.


4 The proposed CEPP has similarities to feebate programs, which have been proposed in the past to, for example, reduce greenhouse gas emissions from passenger cars. In many feebate programs, the level of fees assessed can be adjusted to fully cover the cost of any rebates. As a result, feebates can be, in theory, budget neutral. In contrast, the CEPP generally would be expected have a budget impact. For background on feebates, see, for example, International Council on Clean Transportation, *Feebate Review and Assessment: Best Practices for Feebate Program Design and Implementation*, April 2010.
carbon capture and storage (CCS) equipment. The definition would exclude fossil fuel in general and potentially exclude biomass, subject to a determination by DOE.

In the first year, each utility’s target would increase four percentage points from its 2019-2020 average. For example, a utility with a 2019-2020 average of 50% clean electricity would have a 2023 target of 54%, while a utility with a 2019-2020 average of 25% clean electricity would have a 2023 target of 29%. For context, the nationwide increase in clean electricity (per the House E&C definition) has been one percentage point on average over the last 10 years.

The relative stringency of the program (i.e., the percent increase required) differs by utility, based on their 2019-2020 average. For example, increasing from 50% clean electricity to 54% is an 8% change, while increasing from 25% to 29% is a 16% change.

Annual targets in subsequent years would be four percentage points above the previous year’s performance. If a utility achieved its 2023 target of 54%, its 2024 target would be 58%. If, however, that utility achieved 52% in 2023 (missing its target), its 2024 target would be 56% (i.e., four percentage points above its actual performance in 2023). Utilities would have different final targets in 2030 based on their 2019-2020 baseline. Once a utility reaches 85% clean electricity, it would no longer face a penalty payment for missing a four percentage point annual growth in clean electricity, so long as its clean electricity does not decrease year-over-year.

In general, utilities that achieve their annual target would receive grants from the federal government equal to $150 for every MWh greater than 1.5% above the prior year’s clean electricity sales. In other words, the first 1.5% increase in clean electricity in a year is not eligible for payment, but all increases above that level are eligible for payments (provided the utility increases by at least four percentage points annually). The House E&C text limits use of funds “exclusively for the benefit of the ratepayers of the eligible electricity supplier, including direct bill assistance to ratepayers, investments in qualified clean electricity and energy efficiency, and potentially exclude biomass, subject to a determination by DOE.”

5 Carbon capture and storage (CCS) is not always designed to reduce generator carbon intensity as low as 0.1 metric tons carbon dioxide equivalent per megawatt-hour (tCO₂e/MWh), so not all CCS would qualify as clean electricity under the definition in the budget reconciliation legislative recommendations of the House E&C. Unlike some CES proposals in the 117th Congress, which would give partial credit to generators based on their carbon intensity (and thus allow most CCS to qualify, at least partially), the House E&C text does not allow for partial crediting.

6 The House E&C text defines carbon intensity as “the carbon dioxide equivalent emissions released into the atmosphere from the generation of 1 megawatt-hour of electricity by an electric generating unit, as determined by the Secretary [of Energy].” The U.S. Department of Energy (DOE) potentially could determine biomass to be ineligible as clean electricity because emissions are released when it is burned to generate electricity. Alternatively, DOE potentially could determine that carbon redactions associated with biomass growth offset emissions during electricity generation. Likewise, DOE potentially could consider upstream greenhouse emissions in its determination of carbon intensity. Such an action potentially could raise hurdles for generators to qualify as clean electricity, depending on their energy source.

7 The national clean electricity share increased from 30% in 2011 to 38% in 2020, with an average annual increase of one percentage point. Analysis based on data from U.S. Energy Information Administration, August 2021 Monthly Energy Review. August 2021. This analysis does not include generation from small-scale solar (e.g., rooftop solar). Small-scale generation generally would not count toward CEPP targets because the targets are based on utility load (i.e., sales), not total generation or total consumption.

8 If a utility with a clean electricity share at 85% or above were to decrease its share in a year, it would be subject to penalty payments. The level of payment would be calculated in the same way as for utilities with less than 85% clean electricity, namely, based on the amount of electricity necessary to achieve a four percentage point increase in clean electricity.

9 The House E&C text would apply special conditions for grant eligibility in the year following a year in which a utility owes a payment, and following a year in which a utility opts to defer a grant or payment.

10 In the first year of the program, only clean electricity increases above 2.5% of sales would be eligible for payments.
and worker retention.” Utilities must further provide written assurance regarding labor conditions associated with their clean electricity, in accordance with 42 U.S.C. §17282(b)(3).11

Utilities that do not achieve their annual target would owe payments to the federal government equal to $40 for every MWh “shortfall,” the difference between a four percentage point increase and the utility’s actual clean electricity share for the year. For example, if a utility’s target was 29% but it achieved 28%, the penalty would be $40 times the number of MWh between 28% and 29%. The House E&C text restricts utility recovery of penalty costs: “An eligible electricity supplier may not recover the cost of a payment submitted under this section from any person other than the shareholders or owners of the eligible electricity supplier.”12

The House E&C text provides some amount of compliance flexibility, though less than provided in some CES proposals introduced in the 117th Congress. The House E&C text would allow utilities to defer grants and payments for up to two years, after notifying DOE. Following a deferral year(s), DOE would issue grants or collect payments based on the clean electricity performance in all deferred years. For example, if a utility had 50% clean electricity in one year and 53% clean electricity the following year, it could defer one year (rather than make a payment because it missed its target of 54%). If the utility then had 58% clean electricity in the following year, it would not owe any payments because its performance overall would have met the required increase of four percentage points per year for two years despite missing the required increase for one year. Such deferrals could allow utilities to avoid payments in cases where planned new clean electricity generation is delayed or when existing generation underperforms (as might happen for hydropower during a drought, for example).

The House E&C text would provide DOE $250 million for administrative expenses (e.g., staff to monitor compliance) and “such sums as are necessary” for grant payments through the end of FY2030. All electric utilities would be covered by the program regardless of size, ownership (e.g., investor-owned or publicly owned), or other characteristics. Utilities would have to report their clean electricity performance to DOE annually “using such methods and subject to such audit provisions as the Secretary determines appropriate.”13 The House E&C text would allow DOE to establish requirements ensuring the “financial integrity” of grants and payments.

Legislative Actions

House E&C included the proposed CEPP in its reconciliation recommendations pursuant to its directives in the FY2022 budget resolution (S.Con.Res. 14).14 The committee marked up budget

11 The labor requirements in the House E&C text are included in a renewable energy construction grant program established by §803 of the Energy Independence and Security Act of 2007 (EISA; P.L. 110-140).

12 Many publicly owned utilities (e.g., municipal power departments, rural electric cooperatives) have little distinction between owners and customers. Investor-owned utilities, on the other hand, can raise revenue from either customers or shareholders. The House E&C text restricting penalty cost recovery applies to all covered utilities, regardless of ownership model.

13 DOE could potentially adopt tradeable credits as the method for reporting: the definition of clean electricity percentage in the E&C text includes the provision that the utility “holds the exclusive rights to the qualifying attributes.” In existing state renewable portfolio standard (RPS) and CES programs, tradeable credits represent the renewable or clean “attributes” of eligible electricity. See U.S. Environmental Protection Agency, “Renewable Energy Certificates (RECs),” at https://www.epa.gov/greenpower/renewable-energy-certificates-recs.

14 The Senate Committee on Energy and Natural Resources similarly had directives related to the proposed CEPP, but the Senate committee has yet to take action. For additional information on the FY2022 budget resolution, see CRS Report R46893, S.Con.Res. 14: The Budget Resolution for FY2022, by Megan S. Lynch. For general information on the budget reconciliation process, see CRS Report R44058, The Budget Reconciliation Process: Stages of Consideration.
reconciliation recommendations from September 13 to September 15, 2021. Subtitle D of the text covered provisions related to energy, including the CEPP. Subtitle D, as amended, was advanced to the House Committee on Budget by a roll call vote of 30-27.\textsuperscript{15}

During debate on Subtitle D, House E&C considered amendments, including three that were specific to the CEPP. None of the three amendments was adopted.\textsuperscript{16} One would have struck the CEPP from the subtitle; one addressed potential transmission capacity constraints; and one addressed potential impacts on deployment of advanced nuclear technology. Debate on the CEPP centered on issues associated with increased use of wind and solar energy (including global supply chains for associated components), potential effects on electricity prices, and potential climate benefits.

**Selected Policy Considerations**

Some aspects of the CEPP mirror a CES, so similar considerations arise. These are summarized below. Other aspects of the CEPP differ from a CES, chiefly the budgetary impact. A CES generally would be expected to have a de minimis impact on the federal budget (instead, putting any compliance costs entirely on electric utilities and, therefore, on electricity customers). However, some press sources report that the CEPP is estimated to increase the federal deficit by $150 billion over the next 10 years.\textsuperscript{17}

**Greenhouse Gas Emissions Reductions**

The financial grants and payments in the CEPP could encourage the increased use of clean electricity and achieve reductions in electricity sector emissions; however, the CEPP provisions do not guarantee reductions. Utilities with CEPP compliance costs greater than the penalty could choose the lower-cost option of paying the penalty. In such cases, the penalty would potentially set an upper limit on CEPP outcomes for each utility. In other words, utilities may add clean electricity only to the extent that associated clean electricity costs (including necessary system support costs such as transmission system upgrades) are less than the penalty payment. Some utilities also might choose to pay the penalty if they face non-cost hurdles to meeting CEPP targets, such as siting challenges with construction of clean electricity generators.

Additionally, provisions within budget reconciliation legislation that aim to increase the use of electricity for energy services (e.g., transportation, building heating) could interact with the CEPP, were they to all be enacted. Utilities that experience an increase in sales due to greater use of electricity might find it more challenging to meet CEPP targets because a greater number of MWh would be needed to meet the required annual increase if electricity sales increase at the


\textsuperscript{16} Debate on the energy subtitle began around hour seven of the second part of the first day of the markup and continued into the first part of the second day of the markup. Recordings are available on the E&C website at https://energycommerce.house.gov/committee-activity/markups/markup-of-the-build-back-better-act-full-committee-september-13-2021.

The combined impact of proposed climate and energy policies, and the potential interactions between them, are currently unclear.

What Is Clean?

Different views exist on what counts as clean energy and, therefore, which energy sources should benefit from the policy. Some stakeholders support a relatively narrow definition of clean energy that includes only renewable energy sources. They often assert that greater use of these sources (which currently make up about 20% of total U.S. electricity generation) addresses multiple environmental issues, such as air and water emissions from fossil fuel infrastructure, and associated public health impacts. Many studies find broader definitions, which include nuclear power, fossil fuels using CCS, and some natural gas without CCS, tend to result in greater GHG reductions (or similar reductions at lower cost), all else being equal. However, providing policy support to these sources may not address other environmental and public health concerns.

In addition to environmental concerns, the choice of clean energy would determine which industries benefit from the policy. These industries, including their supply chains, may be located domestically or abroad. Electric utility generating equipment and related infrastructure generally would need to be installed and operated in the United States, regardless of where they are manufactured.

Costs to Consumers

Electricity consumers ultimately bear most costs of any electricity policy. Some groups of electricity consumers, such as industrial facilities and low-income households, are especially sensitive to cost increases. Studies of CES policies that are comparable to the CEPP (i.e., those with targets in the range of 80%-100%) generally find that total electricity system costs will increase over time, though the amount of increase depends on policy details and assumptions about changes in the U.S. energy system.

As proposed, the CEPP would shift some compliance costs from electric utility customers to federal taxpayers. Additionally, clean energy tax incentives proposed for budget reconciliation could further shift costs from electricity customers to the federal budget. Potential changes in electricity consumer costs under the proposed CEPP currently are unclear and depend, in part, on utility-specific factors, such as current energy mix and existing plans for deploying new clean electricity. Some utilities with existing plans to achieve or exceed the CEPP targets might receive “windfall” payments under the CEPP whereby their customers pay less than currently anticipated for the same electricity generation mix.

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18 At the same time, CEPP targets might be easier to meet if total sales stay the same or decrease. This provides one mechanism by which the CEPP might incentivize utility investments in end user efficiency.

19 See example statements in Rachel Frazin, “Progressives Launch Campaign to Exclude Gas From Congress’s Clean Electricity Program,” The Hill, September 1, 2021.


22 A list of CES studies, and their estimates for electricity system costs, is provided in CRS Report R46691, Clean Energy Standards: Selected Issues for the 117th Congress, by Ashley J. Lawson. Some studies also estimate monetary benefits from CES policies, such as those arising from reduced climate change impacts and improved air quality.
Utilities generally must have investment decisions (including power plant retirements) approved by state or local regulators. Cost impacts for consumers typically have a strong weight in utility regulators’ decisions. Utility regulators might deny investments necessary to achieve CEPP targets for a variety of reasons, such as cost or reliability concerns.

**Electric Reliability**

Congress has increased its longstanding interest in electric reliability following power outages in recent years. Electricity supply (i.e., power plants) is one aspect of electric reliability, and the CEPP aims to change this supply by encouraging the buildout of clean electricity generators. This, in turn, could lead to the retirement of some existing power plants that do not meet the definition of “clean.” Some power plants that could be defined as clean (e.g., those using wind or solar energy) have distinct operating characteristics that potentially increase reliability risks in some cases. The extent to which the proposed CEPP would address potential reliability concerns is unknown and would depend in part upon utilities’ compliance actions. Provisions in the Infrastructure Investment and Jobs Act (H.R. 3684) and proposed for inclusion in budget reconciliation would aim to address some reliability concerns (e.g., by incentivizing investment in energy storage and the electricity transmission and distribution systems). The extent to which these provisions could potentially interact with the CEPP is unclear, though they could potentially reduce reliability concerns with wind and solar.

**Community Impacts**

Electricity infrastructure, such as power plants, can affect surrounding communities in positive (e.g., employment) and negative (e.g., air pollution) ways. These communities can be disproportionately impacted by changes in the U.S. electricity system, such as those the CEPP aims to achieve. The extent of these impacts depends in part on which compliance pathways utilities might choose, were the CEPP enacted. For example, utilities might be able to achieve the same target by using more renewable energy, retrofitting existing power plants with eligible CCS, or increasing efficiency among consumers. These different pathways could lead to different outcomes for communities near power plants.

**Interaction with State Programs and Voluntary Efforts**

Nine states and the District of Columbia currently have policies requiring 100% clean electricity, though with different dates for achieving this goal and different definitions of clean. An additional eight states have nonbinding goals for 100% clean electricity, and many utilities have announced goals for at least 80% clean electricity. Combined, these state targets for 100% and utility goals for at least 80% cover 69% of total U.S. electricity sales. Questions remain regarding how the CEPP would interact with these state and utility goals. If the CEPP targets

23 For background, see CRS In Focus IF11257, Variable Renewable Energy: An Introduction, by Ashley J. Lawson.

24 N.C. Clean Energy Technology Center Database of State Incentives for Renewables & Efficiency, Renewable & Clean Energy Standards, September 2020.


26 Methodology for this estimate is provided in CRS Report R46691, Clean Energy Standards: Selected Issues for the 117th Congress, by Ashley J. Lawson.
were more stringent than existing targets in a given year, the CEPP might effectively preempt state policies. It is also unknown how the CEPP might interact with utility plans to achieve 100% clean electricity goals, including how utility investments and profits might be affected.  

**Options for Congress**

The 117th Congress is weighing multiple options to reduce GHG emissions. Several of these are being debated as part of the FY2022 budget reconciliation process. The recent legislative action as part of House E&C’s reconciliation recommendations poses opportunities and risks. The reconciliation process can facilitate the coordination and expedited consideration of certain legislative changes that affect the federal budget. The process, however, includes certain procedural rules, particularly the Senate’s Byrd rule, that may prohibit some legislative changes included in the reconciliation legislation.

As debate continues on the CEPP, Congress might evaluate how that program’s goals compare with other issue areas being considered under reconciliation. Were the CEPP to remain a priority—and be deemed in compliance with the Senate’s Byrd rule—Congress might consider how to address some of the above policy considerations within the constraints of budget reconciliation. Some previous CES proposals provide examples of options for addressing these considerations, though these rely upon CES-specific design details. For example, preferred investments can be incentivized by providing extra credits (“multipliers”) under a CES. The CEPP could potentially use analogous policy design, though the extent to which such features might comply with budget reconciliation rules is unclear.

Were the CEPP enacted, program implementation and oversight could potentially raise additional considerations for Congress. Were the CEPP not enacted (because of budget reconciliation rules or otherwise), Congress might continue to consider CES proposals, such as the four bills introduced to date in the 117th Congress.

**Author Information**

Ashley J. Lawson
Analyst in Energy Policy

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28 For a general overview of options, see CRS In Focus IF11791, Mitigating Greenhouse Gas Emissions: Selected Policy Options, by Jonathan L. Ramseur et al.

29 For further discussion, see CRS Report RL30862, The Budget Reconciliation Process: The Senate’s “Byrd Rule”, by Bill Heniff Jr. The CEPP is reportedly designed to comply with the Byrd rule and other budget reconciliation constraints. See, for example, Clean Air Task Force, Clean Electricity Payment Program: A Budget-Based Alternative to a Federal Clean Electricity Standard, August 2021. The Congressional Research Service is not aware that the Senate Parliamentarian has made a determination about whether the CEPP complies with the Byrd rule.

30 An updated list of CES bills is provided in CRS Report R46691, Clean Energy Standards: Selected Issues for the 117th Congress, by Ashley J. Lawson.
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