ENERGY EFFICIENCY UNDER THE CLEAN POWER PLAN

C2ES SOLUTIONS FORUM

Energy efficiency programs are in wide use, whether administered by state governments, city governments, or utilities. Because energy efficiency is often a low-cost means for reducing power sector emissions, the U.S. Environmental Protection Agency (EPA) expects it will be broadly used to comply with the Clean Power Plan, which sets greenhouse gas standards for existing power plants. This fact sheet compares the treatment of energy efficiency under two types of Clean Power Plan compliance approaches: rate-based or mass-based emission standards.

On August 3, 2015, the U.S. Environmental Protection Agency (EPA) finalized the Carbon Pollution Standards for Existing Power Plants, also known as the Clean Power Plan. EPA also proposed draft model rules (a template that states could adopt in whole or in part if they choose) and proposed federal implementation plans (a plan that EPA would implement in any state not submitting an approvable plan) for both rate-based and mass-based approaches. EPA will be finalizing these proposals in spring and summer 2016, so the final elements could differ from the descriptions below.

HOW DOES ENERGY EFFICIENCY HELP ACHIEVE COMPLIANCE?

Under a rate-based approach, regulated electricity generators must demonstrate compliance through the surrender of emission rate credits (ERCs). Energy efficiency projects installed after 2012 that provide quantified and verified energy savings after 2021 are eligible to generate ERCs. Early action projects could also generate ERCs under the Clean Energy Incentive Program as outlined below.

Under a mass-based approach, states will allocate a budget of allowances equal to their emission limit under the Clean Power Plan. Electricity generators must surrender one allowance for every ton of carbon dioxide emitted. Energy efficiency projects lower the overall demand for electricity, thereby lowering total emissions and the number of allowances necessary for compliance.

HOW ARE ENERGY EFFICIENCY SAVINGS QUANTIFIED AND TRADED?

Under a rate-based approach, the Clean Power Plan requires third-party quantification and verification of electricity savings from energy efficiency projects seeking to generate ERCs. The protocols for this quantification and verification must address three key issues: the baseline energy consumption against which the project should be compared, independent factors that affect energy consumption (e.g., weather or building occupancy), and the number of years the project is expected to operate. Many states and utilities already utilize protocols that address these issues in existing energy efficiency programs. In contrast, a mass-based approach does not require independent quantification and verification of energy efficiency savings, though existing protocols are likely to remain in use under a mass-based approach to help measure the cost effectiveness of these projects.

Tracking systems are necessary to maintain the environmental integrity of environmental trading markets by

assuring that any ERC surrendered for compliance truly represents a zero-emitting megawatt hour and is used only once for compliance. Under the proposed federal plan, EPA would track ERCs in the existing Allowance Tracking and Compliance System that is used in other federal programs. States could also develop and administer their own tracking systems.

Having multiple states participating in a linked market—either rate-based or mass-based—leads to increased demand for energy efficiency projects in those locations where they are cheapest to implement. This occurs when energy efficiency savings are less costly in one state than another and also when savings produce less costly emissions reductions than other activities.

HOW IS ENERGY EFFICIENCY INCENTIVIZED UNDER THE CLEAN ENERGY INCENTIVE PROGRAM (CEIP)?

Under both rate-based and mass-based approaches, states can provide credits to energy efficiency projects in low-income communities that achieve reductions in 2020 and/or 2021. Under a rate-based approach, the credit would be an ERC while under a mass-based approach the credit would be an allowance. These projects would receive two credits for every megawatt hour of electricity avoided, one from the state and another from EPA's matching pool. These credits could then be sold to electricity generators and used for compliance.

HOW DO THE TWO COMPLIANCE APPROACHES DIFFER IN INCENTIVIZING ENERGY EFFICIENCY?

Under a rate-based approach, energy efficiency projects could generate ERCs. These ERCs would have financial value in a trading system because they can be used for compliance. The future value of these ERCs is unknown, and would likely vary from year to year. ERCs do not expire; however, if the ERC is found to be inaccurate through either fraud or error after its submission, a state must have a provision to prevent the invalid ERC from being used for compliance. This could add a risk premium to an ERC as a trading commodity if the provision allowed an ERC to be revoked after being purchased.

Under the proposed rate-based federal implementation plan, energy efficiency is not an eligible ERC source, though EPA has requested comment on that. EPA does propose to implement the CEIP in a state subject to a federal implementation plan, and energy efficiency projects could receive ERCs under that program as described above.

Under the proposed mass-based federal plan, EPA would allocate free allowances to covered electric generating units based upon their share of the state's total generation over a historical period (initially 2010–2012). To the extent that energy efficiency lowers a unit's emissions relative to this period, it creates surplus allowances that can be sold or held for future compliance.

States taking a mass-based approach could directly incentivize energy efficiency in other ways. They could choose to create an allowance set-aside for energy efficiency, similar to the treatment of renewable electricity in the proposed draft model rule and proposed federal plan. Alternatively, they could choose to distribute allowances via auctioning and direct auction revenue to energy efficiency programs. This approach has been taken by the nine states participating in the Regional Greenhouse Gas Initiative and has been shown to lower consumer bills in those states.

CENTER FOR CLIMATE AND ENERGY SOLUTIONS

The Center for Climate and Energy Solutions (C2ES) is an independent, nonprofit, nonpartisan organization promoting strong policy and action to address our climate and energy challenges. The C2ES Solutions Forum brings together businesses, states, and cities to expand clean energy, reduce greenhouse gas emissions, and strengthen resilience to climate change.

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