



THE CLEAN POWER PLAN

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**Federal Plan Requirements for Greenhouse Gas Emissions
Model Trading Rules; Amendments to Framework Regulations;
Carbon Pollution Standards**

2015



Outline

- Overview of the Proposal
- Changes to Framework Regulations
- Mass-based Approach
- Rate-based Approach
- Clean Energy Incentive Program (CEIP)
- Carbon Pollution Standards



Overview of the Proposal

Overview

- The EPA has proposed federal plans and model rules for Clean Power Plan implementation, presenting flexible, affordable implementation options for states and its affected EGUs
- The federal plan and model rule proposal includes:
 - A rate-based model trading rule for potential use by any state
 - A mass-based model trading rule for potential use by any state
 - A rate-based federal plan for each state with affected EGUs
 - A mass-based federal plan for each state with affected EGUs
- The EPA is also proposing enhancements to the §111(d) framework regulations related to the process and timing for state plan submissions and EPA actions



Overview of the Proposal

Overview

- EPA currently intends to finalize both the rate-based and mass-based model trading rules in summer 2016
- EPA intends to finalize a single approach (i.e., either the mass-based or rate-based approach) for every state in which it promulgates a federal plan
- The federal plan will be finalized only for those affected states with affected EGUs that EPA determines have failed to submit an approvable 111(d) state plan by the relevant deadlines set in the emission guidelines
- Affected states may administer administrative aspects of the federal plan and become the primary implementer



Mass-based Approach

How does it work?

- State emissions budgets equal the mass goals finalized in the CPP
- Emission standard on affected units is the requirement to hold allowances equal to reported emissions
- Proposing to distribute allowances (minus three set-asides) to affected EGUs based on historical generation data
- Proposing three allowance set-asides
 - CEIP early action set-aside
 - Output based allocation set-aside
 - Renewable energy set-aside
- States can also choose their own allocation approaches
- Allowance tracking and compliance system similar to system used for existing EPA-administered trading programs
- Interstate allowance trading across federal plan states and with sources in states with approved mass-based plans that
 - Are “trading ready”
 - Use same compliance instrument (short tons)
 - Use EPA-administered tracking system



Rate-based Approach

How does it work?

- EGU's emission standards are based on emission guideline (EG) subcategorized CO₂ emission performance rates for fossil steam and NGCC units
 - Follows the EGs glide path with progressively more stringent standards through the interim period; the final period standard reoccurs
- Compliance is achieved using Emission Rate Credits (ERCs)
 - 1 MWh = ERC
- Tracking would be done using an EPA administered system similar to what is currently used in other EPA programs
- Federal Plan and State Plan Interactions
 - EPA proposes that EGUs that are subject to a federal plan may trade with EGUs that are subject to rate-based state plans that are deemed to be “ready for interstate trading” and that use the EPA administered tracking system
 - This restriction is to ensure that there are no state specific market advantages in credit generation if a state is using emission standards not equal to the subcategorized CO₂ emission performance rates.



CEIP

How does it work?

The Clean Power Plan includes a Clean Energy Incentive Program (CEIP) to encourage early (2020-2021) investments in clean energy generation and energy efficiency.

- CEIP is an optional program that states may use to incentivize:
 - Wind or solar power in all communities, and
 - Energy efficiency measures in low-income communities
- States who intend to participate in the CEIP must indicate their intent to participate in their initial plan submittal
- The final Clean Power Plan notes that a follow on action will be done in the context of the CEIP
- Outreach efforts will be conducted to get feedback on design and implementation of the CEIP
- CEIP was included in the Federal Plan proposal



CEIP- cont.

How does it work?

- We are seeking comment on the following CEIP provisions :
 - Size of the RE and EE reserves
 - Criteria for eligible RE and low-income EE projects
 - Mechanism states must establish to review project applications and issue early action allowances/ERCs
 - How many allowances is one MWh of generation/savings worth, and vice versa
 - Mechanism for maintaining stringency of rate-based emission standards to account for early action ERCs
 - Redistribution method and timing for allowances/ERCs that are allocated to a CEIP state but not awarded to qualifying projects.
 - Participation for states, tribes and territories where goals have not yet been established
 - Definition of “commence construction” (RE) and “commence operations” (EE)

Carbon Pollution Standards



Carbon Pollution Standards

A **new source** is any newly constructed fossil fuel-fired power plant that commenced construction after January 8, 2014

A **modification** is any physical or operational change to an existing source that increases the source's maximum achievable hourly rate of air pollutant emissions. This standard would apply to units that modify after June 18, 2014

A **reconstructed source** is a unit that replaces components to such an extent that the capital cost of the new components exceeds 50 percent of the capital cost of an entirely new comparable facility. This standard would apply to units that reconstruct after June 18, 2014

- EPA set standards to limit carbon dioxide emissions from new, modified, and reconstructed power plants.
- In the Clean Air Act (CAA), Congress recognized that the opportunity to include the most advanced emissions controls into a source's design is greater for new sources than for existing sources; so it laid out distinct approaches for each under CAA section 111
- EPA is establishing separate standards for two types of fossil-fuel fired sources:
 - stationary combustion turbines, generally firing natural gas; and
 - electric utility steam generating units, generally firing coal
- EPA is deferring standards for some types of modifications at this time



Carbon Pollution Standards

Overview

- These final standards reflect specific concerns and technical input from the comments received on both the proposed Carbon Pollution Standards for New Sources and the proposed Carbon Pollution Standards for Modified and Reconstructed Sources
- The standards reflect the degree of emission limitation achievable through the application of the best system of emission reduction (BSER) that EPA has determined has been adequately demonstrated for each type of unit



Carbon Pollution Standards

Overview

- These limits provide the starting point for new fossil-fueled fired power plants, which must obtain permits under the Clean Air Act's New Source Review program. That program requires the use of Best Available Control Technology. EPA will revise its BACT Guidance to reflect these requirements and explain further requirements for applicants to evaluate advancing technology
- Because these standards are in line with current industry investment patterns, these standards are not expected to have notable costs and are not projected to impact electricity prices or reliability



Carbon Pollution Standards

Coal

New Coal-Fired Power Plants

- Best System for Emission Reduction (BSER) for new steam units is highly efficient supercritical pulverized coal (SCPC) with partial carbon capture and storage (CCS)
- Emission limit of 1,400 lb CO₂/MWh-gross
- Could meet by
 - Capturing about 20 percent of its carbon pollution
 - Co-firing natural gas



Carbon Pollution Standards

Coal

Modified Coal-Fired Power Plants

- BSER for modified units is based on each affected unit's own best potential performance
- Setting standards for units that make larger modifications, those resulting in an increase of hourly CO₂ emission of more than 10 percent
- Withdrawing standards for units that make smaller modifications, those resulting in an increase less than or equal to 10 percent. Delayed until EPA gathers more information



Carbon Pollution Standards

Coal

Reconstructed Coal-Fired Plants

- BSER is the performance of the most efficient generating technology for these types of units (i.e., reconstructing the boiler if necessary to use steam with higher temperature and pressure, even if the boiler was not originally designed to do so)
 - Sources with heat input greater than 2,000 MMBtu/h would be required to meet an emission limit of 1,800 lb CO₂/MWh-gross and
 - Sources with a heat input of less than or equal to 2,000 MMBtu/h would be required to meet an emission limit of 2,000 lb CO₂/MWh-gross.



Carbon Pollution Standards

Natural Gas

New and Reconstructed Stationary Combustion Turbines, Generally Natural Gas

- BSER is natural gas combined cycle (NGCC) technology
- Issuing final emission limit of 1,000 lb CO₂/MWh-gross for all sizes of base load units
- Non-base load units must meet a clean fuels input-based standard
- Sales applicability threshold determines whether a unit is “base load” or “non-base load”



Carbon Pollution Standards

Natural Gas

Modified Stationary Combustion Turbines, Generally Natural Gas

- Withdrawing standards for stationary combustion turbines that make modifications. Delayed until EPA gathers more information



Information and Resources

How can I learn more?

After two years of unprecedented outreach, the EPA remains committed to engaging with all stakeholders as states implement the final Clean Power Plan.

- For more information and to access a copy of the rule, visit the **Clean Power Plan website**: <http://www2.epa.gov/carbon-pollution-standards>
- For additional resources to help states develop plans, visit the **CPP Toolbox for States**: <http://www2.epa.gov/cleanpowerplanttoolbox>
- For a graphical and detailed walk through of the EGU category-specific CO₂ emission performance rate and state goals, see **State Goal Visualizer**: <http://www2.epa.gov/cleanpowerplanttoolbox>
- EPA provides **webinars** and **training** on CPP related topics at the air pollution control learning website. See: <http://www.apti-learn.net/lms/cpp/plan/>



Questions?

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