

EPA PROPOSED POWER PLANT GHG EMISSIONS RULE

MWAQC-TAC

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Summary

- In 2021, the power sector was the largest stationary source of greenhouse gases (GHGs), emitting 25 percent of the overall domestic emissions - almost entirely the result of the combustion of fossil fuels in the electric generating units (EGUs) that are the subjects of these proposals.
- May 11, 2023, EPA issued proposed Clean Air Act emission limits and guidelines for carbon dioxide (CO₂) from fossil fuel-fired power plants based on cost-effective and available control technologies.
- EPA is proposing standards and emission guidelines for new and existing fossil fuel-fired power plants. The rule sets limits for new gas-fired combustion turbines, existing coal, oil and gas-fired steam generating units, and certain existing gas-fired combustion turbines.
- The proposed rule is consistent with EPA's traditional approach to establishing pollution standards under Clean Air Act section 111, based on technologies such as carbon capture and sequestration/storage (CCS), low-GHG hydrogen co-firing, and natural gas co-firing, which can be applied directly to power plants that use fossil fuels.

Regulatory History

New Source Performance Standards; Clean Air Act section 111(b)

- In 2015, EPA established greenhouse gas (GHG) standards for fossil fuel-fired steam generating units and fossil fuel-fired stationary combustion turbines.
- In 2018, EPA proposed to revise the NSPS but never finalized the proposal.

Emission Guidelines; Clean Air Act section 111(d)

- In 2015, EPA finalized the Clean Power Plan (CPP) to address GHGs from existing electric generating units (EGUs).
- In 2019, EPA repealed and replaced the CPP with the Affordable Clean Energy (ACE) rule.
- In 2021, the D.C. Circuit Court vacated the ACE rule, which included the CPP repeal.
- In 2022, the Supreme Court reversed the vacatur of the ACE rule and upheld the CPP Repeal.

EPA's Power Plant Rule

- The proposals provide utilities options for meeting these standards as well as the time needed to plan and invest for compliance and continue to support a reliable supply of affordable electricity.
- EPA is also simultaneously proposing to repeal the Affordable Clean Energy (ACE) rule.
- The standards would set pollution limits that power plants must comply with, based on 3 possible emissions-control strategies:
 - Carbon capture and sequestration (CCS)
 - Co-firing a coal plant with natural gas
 - Co-firing a natural gas plant with clean hydrogen

Requirements: Coal Plants

- The most stringent pollution limits apply to coal plants that continue to operate over the long term. The most significant element of the proposal is a requirement for coal-fired power plants to reduce their emissions rate by almost 90% by 2030 unless they voluntarily commit to a legally binding retirement date no later than 2040. EPA based this performance standard on the ability of these plants to install CCS technology.
- Plants that operate beyond 2031 but commit to retire by 2040 would have to reduce their emissions by an amount based on co-firing 40% natural gas with coal (as a proportion of their energy input), resulting in a 16% reduction in their emissions rate.

Requirements: New Natural Gas Plants

- New natural gas power plants that operate with more than a 50% capacity factor (which measures a plant's electricity output over a year compared to how much it would produce if it operated at its maximum output level for the entire year), which EPA refers to as “baseload” plants, would be required to achieve an emissions rate based on using CCS for 90% of its emissions starting in 2035, or alternatively co-firing 30% of its gas by volume with clean hydrogen by 2032 and 96% of it with clean hydrogen by 2038.
- Large (>300 megawatts) existing baseload gas plants would have to meet the same standards as new baseload gas plants.
- New gas plants that operate between a 20% and 50% capacity factor would be required to meet an emissions rate based on co-firing with 30% clean hydrogen by 2032 but would not have to meet the more stringent standards that apply to baseload plants in 2035 (for CCS) or 2038 (for hydrogen co-firing).

Impacts

- U.S. power plant emissions fell 36% between 2005 and 2022. This downward trend is expected to continue because nearly every coal plant in the U.S. is no longer economical to operate given the dramatic reductions in the cost of solar, wind and batteries over the last decade and the incentives in the U.S. Inflation Reduction Act (IRA) to deploy these and other zero-emitting generation options as well as CCS technologies.
- EPA projects that even without its proposed rule, power plant emissions will fall to 60% below 2005 levels by 2030 and 80% below 2005 levels by 2040. The rule would accelerate these reductions and make them more certain.
- EPA's preliminary modeling of the proposal (which doesn't fully integrate the proposed requirements for existing gas plants) estimates that power plant emissions will drop by 63% in 2030 and as much as 83% in 2040.

Environmental Justice

- These proposals are anticipated to lead to modest but widespread reductions in ambient levels of PM2.5 for a large majority of the nation's population, as well as reductions in ambient PM2.5 exposures that are similar in magnitude across all racial, ethnic, income and linguistic groups.
- EPA found that the proposed standards are anticipated to lead to modest but widespread reductions in ambient levels of ground-level ozone for some of the nation's population, and that the proposed standards would lead to similar reductions in ambient ozone exposures across all demographic groups.
- Although reductions in PM2.5 and ozone exposures are small relative to baseline levels, and although disparities in PM2.5 and ozone exposure would continue to persist following these proposals, EPA's analysis indicates that the air quality benefits of these proposals would be broadly distributed.



State Implementation Plans

- State plans must generally establish standards that are at least as stringent as EPA's emission guidelines.
- States may take into account remaining useful life and other factors when applying standards of performance to individual existing sources.
- If the EPA were to promulgate these emission guidelines in June 2024 and require State plan submissions in September 2025, the EPA anticipates that the soonest compliance could commence is in the third quarter of 2029.
- EPA is proposing requirements specific to these emission guidelines to ensure transparency, including a website hosted by EGU owners/operators to publish documentation and information related to compliance with the state plan.

Public Hearing & Comment Deadline

- EPA will hold a virtual public hearing on June 13, 14 and 15, 2023, to provide the public the opportunity to present comments and information regarding the Agency's proposal for carbon pollution standards for fossil fuel-fired power plants.
- Hearing dates & times:
 - Tuesday, June 13, 2023, 11:00 AM – 7:00 PM
 - Wednesday, June 14, 2023, 11:00 AM – 7:00 PM
 - Thursday, June 15, 2023, 11:00 AM - 4:00 PM
- EPA will take written comment on the proposal until July 24, 2023.

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