

# EPA's New Rule On Power Plant GHGs Won't End Litigation

By **Eric Christensen, Nikki Waxman and Lauren Karam** (May 26, 2023)

On May 23, the U.S. Environmental Protection Agency published in the Federal Register a proposal for sweeping greenhouse gas emissions standards that will, if adopted, strictly limit GHG emissions from the nation's electricity generation fleet, with increasingly tight limits imposed over the next two decades.[1]

The proposed rules, if finalized, would impose stringent new source performance standards, or NSPS, on new power plants fueled by natural gas. They would also impose strict limits on GHG emissions from existing fossil fuel-fired generators — including those powered by natural gas, coal and oil.

Specifically, the EPA proposes to take five regulatory actions using its authority under Section 111 of the Clean Air Act:[2]

1. Update the NSPS for GHG emissions from natural gas turbine generators, based on the Clean Air Act's requirement that the EPA revisit its conclusions regarding the state of pollution control technology every eight years;
2. Update the NSPS for GHG emissions from fossil fuel-fired steam generating units — primarily coal-fired generators — that undertake major modifications based on the same eight-year review requirement;
3. Create GHG emissions limits for existing fossil fuel-fired generating units;
4. Create GHG emissions limits specific to certain existing large baseload generating units; and
5. Repeal the Affordable Clean Energy, or ACE, rule.



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When regulating a pollution source under Section 111, the Clean Air Act requires the EPA to issue performance standards and emission guidelines for existing sources by applying the "best system of emissions reduction" that has been "adequately demonstrated." This evaluation includes an assessment of relevant costs, as well as health and environmental impacts of utilizing relevant pollution control technology.

Rejecting its prior conclusions in both the Obama administration's Clean Power Plan, issued in 2015, and the ACE rule, adopted by the Trump-era EPA in 2019, the new GHG rule relies heavily on the conclusion that carbon capture and storage, or CCS, technology has now advanced to the point that it has been adequately demonstrated.

In addition, the EPA concludes that generators fired with natural gas can co-fire with hydrogen produced through low-GHG processes, and that this process has also been adequately demonstrated.

Based on these conclusions, the agency finds that CCS and co-firing with low-GHG hydrogen are the best systems of emission reduction — at least for baseload plants, or plants that will remain in service for an extended period.

Accordingly, the EPA proposes to require coal generators that remain in service after 2040 to install CCS. Similarly, baseload gas-fired turbines would be required to install either CCS, or replace natural gas with green hydrogen, with specific thresholds for hydrogen fueling phased in over time.

### **Summary of the Proposed Rule**

The EPA proposes a number of different subcategories of generation for both new sources and existing units, and proposes specific requirements for each category, which are generally made increasingly stringent over time.

The agency proposes to categorize units based on whether they are coal-fired steam generators or natural gas combustion turbines, and to further categorize these based on how long they are anticipated to be in service, and whether they are baseload or peaking units.

### ***New Source Performance Standards***

New and reconstructed natural gas turbine generators would be required to meet phased standards as follows:

- For peaking units, with a capacity factor of less than 20%, the EPA proposes that the best system of emission reduction consists of using fuels with low carbon intensity and high-efficiency generation, which results in specific limits on carbon emissions based on pounds of GHG emissions per megawatt-hour of electricity produced.
- For intermediate load units — those with a capacity factor above 20% but below the capacity factor for baseload units — the best system of emission reduction would be a combination of highly efficient generation and co-firing with low-GHG hydrogen.
- For baseload units, the best system of emission reduction would comprise highly efficient generation systems combined with either CCS or hydrogen co-firing. If the baseload generator chooses the CCS path, it would be required to install CCS capturing 90% of GHG emissions by 2035. If it chooses the co-firing option, it would need to co-fire with 30% hydrogen by 2032, ramping up to 96% hydrogen by 2038.

The capacity factor limit for baseload units would be between 33% and 40% for simple cycle units, and between 45% and 55% for combined cycle units, depending on the design efficiency of specific units.

For coal-fired units, the EPA is proposing to retain the NSPS it originally promulgated for such units in the Clean Power Plan, since the agency is not aware of any plans to construct new or modified coal-fired generators.

### ***GHG Limits on Existing Coal-Fired Generation***

For existing coal-fired generators, the EPA proposes three different subcategories, based on the anticipated retirement date of the unit:

- For imminent-term units — those that have committed to retire no later than Jan. 1, 2032 — the best system of emission reduction will be limited to improved operations and maintenance to minimize GHG emissions.
- For medium-term units — those that will operate beyond 2032, but will commit to retire before Jan. 1, 2040 — the EPA would impose the same operations and maintenance requirements as imminent-term units, and also require that medium-term units co-fire with 40% natural gas to attain a 16% reduction in GHG emissions.
- For long-term units — those operating past 2040 — installation of CCS that would capture 90% of the plant's carbon dioxide emissions would be required.

For existing sources, standards are implemented by states and tribes, which are tasked with developing state implementation plans.

In the proposed rule, the EPA specifically concludes that states may use cap-and-trade systems or other alternative approaches, so long as the state demonstrates that its implementation plan would achieve GHG emissions reductions that are at least equivalent to those that would be achieved by the specific measures the EPA establishes for existing generation units.

To qualify for the less burdensome requirements for imminent-term and medium-term units, a coal plant operator would be required to commit to a specific retirement date in the state implementation plans that will be developed to meet the EPA's GHG goals for existing generators.

### ***GHG Limits on Existing Gas-Fired Generation***

For existing natural gas combustion turbines, the EPA proposes an approach similar to its NSPS proposal, which is based on the capacity factor of particular generating units:

- For peaking units, with a capacity factor of 20% or less, the performance standard would be limited to the use of low-emitting fuels with an emissions rate of 160 pounds of CO<sub>2</sub> per metric million British thermal units or less.
- For intermediate units, with a capacity factor above 20%, but below the capacity factor for baseload units, the EPA would require a combination of highly efficient generation plus a requirement that the units be co-fired by low-GHG hydrogen, with at least 30% of their fuel supplied by hydrogen by 2032.
- For baseload gas-fired generators, the EPA proposes that they incorporate highly efficient generation technology combined with either CCS — which must capture 90% of the unit's GHG emissions by 2035 — or co-fire with low-GHG hydrogen, with 30% co-firing by 2032 and 96% co-firing by 2038.

## ***Repeal of the ACE Rule***

Finally, the EPA proposes to repeal the ACE rule, including several critical findings contained in the ACE rule. For example, the agency now concludes that advances in CCS technology make it adequately demonstrated, so that the opposite conclusion in the ACE rule is no longer valid.

The EPA also reverses the ACE rule's legal conclusion that cap-and-trade systems are impermissible for state implementation plans.

## **Analysis**

### ***The Next Litigation War***

The GHG rule is the latest salvo in a decadeslong political and legal tug-of-war over whether, and how, the EPA should respond to climate change by limiting GHG emissions from the electricity sector.

The legal underpinnings of the GHG rule can be traced back at least as far back as the U.S. Supreme Court's 2007 decision in *Massachusetts v. EPA*, which held that GHGs are pollutants under the Clean Air Act, and that the agency is required to make a finding as to whether GHGs endanger public health — and, if so, to regulate GHGs.[3]

The EPA made that finding in 2009, and ever since, has struggled to find an effective approach to GHG regulation that reflects the political priorities of the particular administration, fits within the Clean Air Act's statutory authorities, and will survive the inevitable judicial challenges.

Most recently, in *West Virginia v. EPA*, the Supreme Court last year struck down the EPA's conclusion in the Obama administration's Clean Power Plan that a generation-shifting system that would result in a shift of electricity production from existing coal-fired plants to lower-emission sources outside the fenceline of those plants exceeded the EPA's power under Section 111(d) to establish the best system of emissions reductions that has been adequately demonstrated.[4]

In the court's view, shifting generation from coal to other sources was a "major question" of great economic and political significance, requiring a clear statutory authorization from Congress. The language of Section 111(d) did not, the court found, support the EPA's conclusion that it could require a cap-and-trade or other system extending beyond the unit-specific technological controls traditionally relied on by the EPA to address GHG pollutants.

The GHG rule reflects the Biden administration's aggressive goals for addressing climate change, which include achieving a carbon-neutral electricity sector by 2035. To accommodate those goals while also responding to the Supreme Court's mandate in *West Virginia*, the GHG rule relies on two key factual conclusions — that both CCS and low-GHG hydrogen have advanced to the point that they have been adequately demonstrated.

The EPA argues that these technologies fit within the Clean Air Act's strictures as interpreted by the Supreme Court in *West Virginia*, since they are "inside-the-fenceline" measures that are similar to scrubbers and other technological pollution controls that have historically been the mainstay of the agency's approach to air emissions control for the power sector.

Although the EPA cites several examples of what it considers to be successful CCS projects,

the track record of CCS to date has been, at best, mixed, especially for the kind of commercial-scale projects that would be required to comply with its proposal.

There is little doubt that the litigation war will continue, this time with a likely focus on whether CCS and low-GHG hydrogen are both adequately demonstrated and reasonably economical.

In addition, to the extent that states accept the EPA's invitation to employ cap-and-trade systems in their state implementation plans, litigation is likely to challenge the EPA's reversal of its prior position that this is permissible under the Clean Air Act.

### ***Calling the Utilities' Bluff***

Many utilities across the country have now committed to substantial, or even complete, decarbonization of their electric fleets by midcentury. And nearly all utilities have retired a significant portion of their coal fleets, and plan to retire much of their remaining coal fleets in the next 10 to 15 years.

The EPA's approach takes these plans seriously, subjecting coal plants that will be retired in the near future to minimal additional regulation, but imposing a costly CCS requirement on coal plants that are slated to remain on line in 2040 and beyond. The agency puts teeth into these requirements by requiring utilities to commit to specified retirement dates in state implementation plans.

These requirements will add to the already considerable economic pressures that the nation's remaining coal generators face from rapidly declining costs of competing generation sources, from state decarbonization mandates and from other quarters.

### ***The Economics of CCS and Low-GHG Hydrogen***

The EPA recognizes that CCS and low-GHG hydrogen co-firing can be implemented only at a significant cost. For this reason, it imposes these requirements only on generators that will be operating for a long period, so that the capital costs associated with these systems can be fully amortized, and on generators with a high capacity factor, which earn sufficient revenues to pay for these systems.

Further, the agency's conclusion that both technologies are economically feasible depends heavily on the enactment of the Inflation Reduction Act<sup>[5]</sup> and Infrastructure Investment and Jobs Act,<sup>[6]</sup> both of which provide tax credits and substantial federal financial support for CCS and low-GHG hydrogen production.

For example, the Inflation Reduction Act amends the tax credit for CCS found in Section 45Q of the Internal Revenue Code, so that tax credits of up to \$85 per metric of carbon captured in geological sequestration, and up to \$60 per metric ton for carbon used in enhanced oil recovery, are available.

Similarly, the Inflation Reduction Act adds a new Section 45V to the Internal Revenue Code that provides tax credits of up to \$3 per kg of hydrogen produced from low-carbon processes. These can be combined with other incentives, such as the tax credit for advanced manufacturing, and federal financial support for hydrogen hubs.

Without these incentives, the EPA's case for the economic viability of these technologies would be much weaker. Further, as a practical matter, the large investments needed to

build out the infrastructure necessary to make these technologies available on a wide enough scale to meet the agency's goals likely could not occur without major economic support from the federal government.

## **Conclusion**

The GHG rule is the EPA's latest, and easily most ambitious, regulatory initiative aimed at reducing GHG emissions from the nation's electric power industry. Once adopted in final form, the rule is certain to produce wide-ranging changes in the nation's electricity system — as well as years of litigation.

The agency has invited comments on many different questions arising under its proposal. Interested parties should carefully analyze the proposed rule and take the opportunity to help shape the final rule by providing comments. Comments will be due by July 24.

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[1] The proposed rule is available on the EPA's website at <https://www.epa.gov/stationary-sources-air-pollution/greenhouse-gas-standards-and-guidelines-fossil-fuel-fired-power>.

[2] 42 U.S.C. § 7411.

[3] 549 U.S. 497 (2007).

[4] 597 U.S. \_\_\_ (2022).

[5] For a summary of the Inflation Reduction Act, see <https://www.bdlaw.com/publications/inflation-reduction-act-signed-into-law-committing-370-billion-to-action-on-climate-and-energy/>.

[6] For a summary of the Infrastructure Investment and Jobs Act, see <https://www.bdlaw.com/publications/the-bipartisan-infrastructure-package-what-it-means-for-energy-and-climate/>. The IIJA is also often referred to as the Bipartisan Infrastructure Act.