

U.S. EPA Proposes CO₂ Emissions Standard for New Power Plants

On March 27, 2012, the United States Environmental Protection Agency (EPA) proposed for the first time a New Source Performance Standards (NSPS) for emissions of carbon dioxide (CO₂) from new electric utility generating units (EGUs) of greater than 25 megawatts (MW) capacity. The proposed standard, which would not apply to existing plants, would be set at what is achievable by the best performing natural gas-fired combined-cycle power plants today. As such, it would essentially preclude construction of new coal-fired power plants, unless, within the first 10 years of operation, they could be equipped with costly carbon capture and storage (CCS) technology, which is far from commercialization.

The proposed rule, only the latest in a series of EPA rulemakings affecting power sector emissions, would mark another step in the long slide of coal from its position as the primary fuel source for baseload power in the U.S. Although the electric sector's steady migration towards natural gas has been precipitated by market forces, including the abundance and low price of natural gas and the costs of compliance with other pollution regulations, this proposal is nevertheless significant because if finalized and not overturned by an act of Congress, it would provide regulatory certainty that coal can play no role in meeting new demand in the U.S. prior to advancements in CCS technology.

EPA will accept comments on the proposal for 60 days after publication in the Federal Register and will hold public hearings at dates, times, and locations to be determined. The proposed rule is available at: <http://www.epa.gov/carbonpollutionstandard/actions.html>.

Greenhouse Gas NSPS for EGUs

The EPA's proposed standards would require new fossil fuel-fired EGUs greater than 25 megawatt electric output (MWe) (including fossil fuel-fired boilers, integrated gasification combined-cycle (IGCC) units and stationary combined-cycle turbine units) to meet a "standard of performance" of no more than 1,000 pounds of CO₂ emitted per megawatt-hour (lb CO₂/MWh). This standard, promulgated pursuant to section 111 of the Clean Air Act (CAA), is based on the performance of natural gas combined-cycle (NGCC) technology, which is currently in wide use throughout the United States.

EPA expects that new coal-, coal refuse-, oil- and petroleum coke-fired boilers and IGCC units will, if constructed, be able to meet this standard by employing carbon capture and storage (CCS) technology. The proposed rule, however, does not apply to power plants currently operating, newly permitted plants that begin construction within the next 12 months, or plants that burn biomass. In addition, EPA has not included simple-cycle power plants in this source category because simple-cycle units (which do not capture waste heat to generate more power or useful thermal energy) typically operate only as "peaking" plants and it would therefore be more expensive to reduce their emissions, as opposed to combined-cycle power plants, which typically operate at intermediate to baseload units.

EPA's proposed performance standard is based solely on the degree of emission limitation achievable through NGCC, which the agency believes will be the "facilities of choice" for the foreseeable future. Significantly, EPA believes that no notable compliance costs will be associated with the proposed rule because even in the absence of the proposed rule, the electric sector would choose to build natural gas-fired EGUs that would already comply with the proposed standard. This is due to the increasing availability and lower price of natural gas, relative to coal, and the impact of emissions controls required by other EPA rules affecting the power sector, including the Cross-State Air Pollution Rule (CSAPR) and the Mercury Air Toxics Standards (MATS). In light of these factors, EPA's Integrated Planning Model, which is a least-cost dispatch model that predicts how new plants will be built and existing plants operated to meet demand throughout electric grid, projects no new coal-fired units would be constructed prior to 2020 and none without CCS prior to 2030.

CCS for Coal-Fired Power Plants

Although it predicts that few, if any, new coal-fired power plants will be built prior to 2030, even in the absence of the rule, EPA is proposing the rule to provide regulatory certainty. While CCS is not currently viewed as cost-effective, EPA anticipates that the costs will decrease over time. Therefore, EPA has proposed to allow new coal- and petroleum coke-fired power plants to construct and begin operations without CCS, and then to install and operate CCS at some time in the future, so long as they install CCS within 10 years and operate it in a manner that allows them to meet the 1,000 lb CO₂/MWh standard, on a weighted average basis, over a 30-year period.

Pollution Control Projects Exempt from "Modification" Definition

EPA has declined to propose requirements for actions that would constitute "modifications" under its NSPS regulations, because it believes such projects would likely qualify as pollution control projects, which are exempt from the definition of modification under EPA regulations. This includes projects installed to regulate criteria pollutants, as well as commercially available upgrade projects that might result in an increase in mass CO₂ emissions, but would result in an overall reduction in the emissions of both criteria pollutants and GHGs per unit of energy generated.

While this would allow certain efficiency upgrades at existing NGCC plants to be accomplished without triggering the rule, EPA is concerned that this exemption may be invalid based on the D.C. Circuit's ruling in *New York v. EPA*, 413 F.3d 3, 40 (D.C. Cir. 2005), which vacated a similar provision in EPA's New Source Review reform regulations. The agency is therefore seeking comments on whether this exemption from the definition of "modification" for pollution control projects under NSPS continues to be valid. Depending on the comments that it receives, EPA may issue proposed standards of performance for modified sources in the future.

No Applicability to Existing Sources

EPA also is not proposing standards at this time for existing facilities. Although the settlement that resulted in the proposed rule also committed EPA to propose emission guidelines under Section 111(d) of the CAA for existing facilities, EPA Administrator Lisa Jackson also announced on March 27 that the agency has no plans to address existing plants under Section 111 and, if it did, it would only do so after an extensive public participation process involving all stakeholders. Because of the broad flexibility EPA is believed to possess to issue guidelines under Section 111(d), and the states are believed to possess to implement such guidelines, some states, like California, have proposed that market-based trading systems, like California's economy-wide Cap-and-Trade program for greenhouse gas (GHG) emissions, could be relied upon to meet such guidelines.

EPA Requests Comments on a Range of Standards

While EPA is proposing a standard of 1,000 lb CO₂/MWh, it is requesting comment on a range of 950 to 1,100 lb/MWh for the final rule. According to EPA, the upper limit (consistent with standards promulgated by California, Washington, and Oregon for procurement by utilities under new long-term contracts) would incorporate essentially all available new combined-cycle designs and would have limited impact on improving efficiency of combined-cycle facilities. Indeed, when the California standard was set at the upper end of the range, it was intended to accommodate the existing marginal NGCC facilities that are not as efficient as new gas-fired combined-cycle plants.

Under the Clean Air Act, the NSPS will also set the floor for future “best available control technology” (BACT) determinations under the Prevention of Significant Deterioration (PSD) permitting program. The proposed standard, however, is set at a level that is comfortably higher than the BACT limitations included in the first PSD permits that EPA has issued for GHG emissions from power plants. For example, EPA Region 9’s recent permit for a NGCC facility, which included a solar thermal hybrid element at the request of the applicant, requires the permittee to meet a CO₂ limit of 774 lb/MWh. Similarly, EPA Region 6’s more recent permit for a similar NGCC facility imposed a CO₂ limit of 918 lb/MWh. These existing permit limits indicate that large NGCC plants under development today would have no problem achieving the proposed standard.

That said, EPA’s proposed rule acknowledges that a standard at the stricter end of the range proposed would eliminate certain combined cycle designs without a steam reheat cycle and similar lower efficiency designs for use in electric-only generation, particularly at less than 40 MW in capacity. According to EPA, owners of combined cycle facilities with higher heat rates could, however, either implement combined heat and power (cogeneration) or integrated solar thermal for feedwater heating to achieve the proposed standard.

Conclusion

EPA’s proposal is likely to stir up significant controversy and has already done so. While it sets reasonable expectations for investors and developers of future fossil-fueled plants, it essentially precludes development of any new coal-fired resources in the near future, unless subsidized by significant government investment in the development of CCS technology. Moreover, it makes clear that no coal-fired power plant could meet BACT under the PSD program without the ability to utilize CCS. While EPA’s assertion that such a standard is intended to promote fuel diversity may ring hollow, the standard may actually require no more than what industry is already planning to do to meet increasingly stringent air quality standards affecting the power sector, including CSAPR and MATS. Thus, although the proposed standard may bring certainty to the electric sector, it is not clear that it will actually achieve greater reductions than what market forces are already demanding.

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Paul Hastings Environment and Energy lawyers are deeply involved in EPA's development regulations affecting the power sector. If you have any questions concerning these developing issues, please do not hesitate to contact any of the following Paul Hastings lawyers:

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