Proposed EPA Limits on CO2 Would Require Major Technology Advances for Coal-Fired Power Plants

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In an action long-awaited by environmental activists and viewed with some trepidation by the business community, on April 13, 2012, EPA published in the Federal Register its proposed greenhouse gas (GHG) emission limits for new power plants (technically, electric utility generating units or EGUs).[1] Comments on the proposed rule must be received by EPA no later than June 25, 2012.

The proposed New Source Performance Standards (NSPS) are EPA's first proposed numeric GHG emission limits for any category of industrial facility, and will have a significant impact on the licensing and operation of new power plants when they are issued in final form. EPA's approach to the final standards is also likely to establish precedents for EPA's regulation of GHG emissions from other types of facilities.

This proposal is the latest step in a long series of regulatory and judicial actions related to power plant GHG emissions. In 2006, EPA finalized an updated NSPS for electric utility steam generating units subject to NSPS Subpart Da,[2] but expressly declined to establish a standard for GHG emissions despite strenuous requests from environmental groups. After the Supreme Court's 2007 decision in *Massachusetts v. EPA*,[3] which held that GHGs are an "air pollutant" as defined in the Clean Air Act, EPA requested and received a voluntary remand of the Subpart Da standards from the U.S. Court of Appeals for the D.C. Circuit so that EPA could reconsider its decision on GHG standards. After EPA failed to act on the remand and under threat of further litigation, EPA signed a settlement agreement December 23, 2010, in which the agency committed to propose and to finalize GHG emission standards for new and modified fossil fuel-fired power plants by July 26, 2011, and May 26, 2012, respectively.[4] After further delay, this proposal was issued.

The proposed standard would apply to new "electric utility generating units" (fossil fuel-fired steam electric generating units, including those burning coal and liquid fuels, and stationary gas turbines) with a base

[1] 77 Fed. Reg. 22392. Proposed 40 CFR Part 60, Subpart TTTT (40 CFR Sections 60.5508-5580). http://www.gpo.gov/fdsys/pkg/FR-2012-04-13/pdf/2012-7820.pdf

[2] 71 Fed. Reg. 9866 (February 27, 2006). http://www.gpo.gov/fdsys/pkg/FR-2006-02-27/pdf/06-1460.pdf

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

[4] "Carbon Pollution Standard for New Power Plants," http://www.epa.gov/airquality/cps/settlement.html

load rating of more than 250 million Btu/hour heat input (73 megawatts) that commence construction after April 13, 2012. Existing and modified units, and simple cycle gas turbines, would not be subject to the standard.[5]

The proposed standard is 1000 pounds of carbon dioxide (CO2) per megawatt hour generated (gross output, 12-operating month average).[6,7] The standard is based on the best demonstrated technology (the statutory touchstone for determining the stringency of an NSPS) for natural gas combined-cycle gas turbines (NGCC units). In a break with past precedent, EPA grouped these gas turbine units with steam electric generating units (including coal-fired boilers) in a single category for purposes of determining and applying the emission standard.

The proposed standard reflects EPA's strong regulatory preference that all new power plants, including new coal-fired power plants, achieve a level of CO2 emissions reduction comparable to that achieved by NGCC units. Natural gas has suddenly become much more abundant and inexpensive, and its use results in significantly less CO2 emitted to the atmosphere per megawatt hour of electricity generated. Accordingly, EPA predicts that, even absent the proposed NSPS, few new power plants using coal or petroleum coke as the fuel source will be constructed and permitted in the future. Nevertheless, under the NSPS as proposed, any new units using coal or petroleum coke as the fuel would still be required to meet an emission standard reflecting the emissions performance of NGCC technology. EPA's proposed standard would, in effect, require the use of carbon capture and storage (CCS) systems in those cases, and such facilities must be designed to allow the installation and operation of a CCS system.[8] EPA proposes that a coal or coke-fired unit could meet the new standard by using CCS to capture approximately 50 percent of the CO2 in exhaust gas at the startup, and then average its CO2 emissions over a 30-year period. Such a long averaging period is another departure from the patterns of past NSPS rules.

The *Los Angeles Times* recently reported that "[the] newest natural-gas-fired power plants emit about 800 pounds of carbon per megawatt hour. New coal plants emit between 1,600 and 1,900 pounds per megawatt hour."[9] Although current carbon capture technologies are seen as capable of reducing emissions below the 1000-pound figure, their high capital cost and parasitic electricity load challenge the financial viability of new coal plant projects when compared with gas plants. The proposed rule would thus require significant improvements in CCS technology and economics before new coal-fired power generation facilities could be built. EPA concedes that the implementation and operation of CCS technology is very costly, which would appear to limit its utility. However, EPA justifies its proposal with the position that CCS is technologically feasible today, and that its costs are likely to decrease in the future because of advancements in technology, the availability of government funds to absorb these costs in some cases, and the boost this technology will receive from the adoption of this rule and the benefits that will result from the "regulatory certainty" this new rule bestows on the industry.

[5] The proposal also exempts municipal waste combustor units and commercial or industrial waste incineration units, which are subject to their own NSPS standards, and "transitional units," which are covered units that received a PSD permit before April 13, 2012, or, in the event their PSD permit has expired or is being extended, the unit is participating in a Department of Energy CCS funding program. See proposed 40 CFR § 60.5510.

[6] CO2 is the only GHG regulated under this proposal.

[7] For comparison, since 2007 California has had a standard of 1100 pounds CO2 per megawatt-hour for new long-term electricity supply contracts. See, e.g., California Energy Commission, "SB 1368 Emission Performance Standards," http://www.energy.ca.gov/emission_standards/index.html.

[8] Proposed Section 60.5580 defines CCS as "a process that includes capture and compression of CO2 produced by an electric utility generating unit before release to the atmosphere; transport of the captured CO2 (usually in pipelines); and storage of that CO2 in geologic formations, such as deep saline formations, oil and gas reservoirs, and unmineable coal seams." 77 Fed. Reg. at 22439.

[9] Neela Banerjee, "EPA Emission Standards May Rule Out New Coal Power Plants," *Los Angeles Times*, Mar. 27, 2012.

As mentioned above, several aspects of this proposal would establish new precedents for EPA's NSPS standards if they remain in the final standard:

- Establishing an NSPS for GHG emissions from industrial facilities
- Adopting an NSPS emission standard that applies to new units but not to modified units
- Including two different types of equipment in a single standard based on their common industry or product
- Using "best demonstrated technology" from one equipment type to establish an emission standard for another equipment type
- Requiring the future use of a technology (CCS) that does not currently meet NSPS "best demonstrated technology" criteria
- Allowing use of a 30-year averaging period to show compliance with the standard
- Establishing an NSPS for an industrial category for a particular pollutant, here CO2, without having made the threshold determination that the category contributes "significantly" to concentrations of that pollutant

These new precedents could substantially change the nature of future NPSP standards, but are quite contentious. EPA's decisions on these issues are highly likely to be litigated.

Comments on the proposed rule must be received by EPA no later than June 25, 2012 (extended from the original June 12, 2012 deadline).[10] EPA will hold public hearings on May 24, 2012, in Washington DC and Chicago, IL. The exact time and location of the hearings can be found in EPA's May 4, 2012 public hearing notice (77 Fed. Reg. 26476): http://www.gpo.gov/fdsys/pkg/FR-2012-05-04/pdf/2012-10825.pdf.

If you have questions, please contact the Pillsbury attorney with whom you regularly work or the authors:

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[10] EPA's Docket ID Number for this rulemaking is EPA-OAR-2011-0660. Complete instructions for filing comments can be found on the first page of the Federal Register notice. http://www.gpo.gov/fdsys/pkg/FR-2012-04-13/pdf/2012-7820.pdf