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Christine Fazio

Ethan Strell

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By **Christine A. Fazio** and **Ethan I. Strell**

Our article on June 28, 2012, discussed a proposed rule by the U.S. Environmental Protection Agency (EPA) that would limit, for the first time, carbon dioxide (CO2) emissions from new fossil fuel-fired power plants.[1] The proposal's standard was based on the emissions of new natural gas-fired combined-cycle power plants. In order to meet the standards, new coal-fired plants would need to employ costly and untested carbon capture and storage (CCS) technology. The proposal was criticized by supporters of the coal industry because the standard would essentially prevent any new coal-fired power plants from receiving Clean Air Act (CAA) construction permits. After reviewing more than 2.5 million public comments on the 2012 proposal, and in consideration of recent trends in the power sector, on Sept. 20, the EPA issued a new proposal for CO2 emission standards for new power plants that, in EPA's view, should allow new coal-fired power plants to receive construction permits from the states.[2]

As discussed below, however, this re-proposal, like the first proposal, is receiving significant negative commentary by industry and elected officials in states that depend on coal, whether for mining jobs or to produce electricity, including comments that the re-proposal standards will not permit the construction of a new coal-fired power plant because it is unlikely that new CCS technology will be commercially available in the near future.

While the federal government continues to review the appropriate greenhouse gas (GHG) standards that should be established for new power plants nationwide, New York State has already adopted a regulation that essentially prohibits the construction of new coal-fired power plants within the state. Specifically, in June 2012, the New York State Department of Environmental Conservation (DEC) adopted more stringent standards than EPA's proposal and re-proposal as part of New York's reenacted Article 10 of the Public Service Law for the siting of new power plants in New York State.[3]

New Proposed Regulation

The most controversial aspect of the 2012 EPA proposal was that it would have forced new coal-burning power plants to meet the same emissions standards as new natural gas-fired power plants. Under the 2012 proposal, the 1,000 pounds of CO2 per megawatt-hour (lbs CO2/MWh) standard for all new fossil fuel-fired plants was roughly based on the typical emissions of natural gas combined-cycle units. By contrast, coal burning plants emit twice as much CO2 per unit of energy as natural gas-fired combined-cycle turbines.

EPA's new re-proposal would set slightly different standards for natural gas-fired turbines and coal-fired units. New large natural gas-fired turbines would be limited to 1,000 lbs CO2/MWh, while new small natural gas turbines would be limited to 1,100 lbs CO2/MWh. For new fossil fuel-fired utility boilers and integrated gasification combined cycle units (including coal-burning

plants), EPA proposes to establish two limits based on the performance of a new efficient coal plant implementing CCS: 1,100 lbs CO2/MWh averaged over a 12-month period or between 1,000 to 1,050 lbs CO2/MWh averaged over a seven-year period.[4]

In comparing the 2013 re-proposal with the 2012 proposal, there would be no practical effect of the slightly higher CO2 limit for coal plants in the re-proposal, since coal plants still cannot meet that standard without CCS. The EPA's 2012 proposal, which provided for a single standard, was based upon a finding that the "best system of emission reduction adequately demonstrated" (BSER) for all fossil fuel-fired units is natural gas combined-cycle technology. EPA's 2012 single-standard proposal was also based on a modeling projection that no new coal-fired units would be constructed through the year 2030 without CCS. Based on these combined findings, EPA decided not to treat natural gas and coal differently, although the 2012 proposal did identify CCS technology as a "compliance alternative" for coal-fired units that implemented CCS, and provided those units with a 30-year averaging compliance option.[5]

After reviewing public comments, EPA has now recognized that there could be limited new coal-fired capacity proposed in the near future. Thus, while the 2012 proposal identified the BSER for all fossil fuel-fired units to be "natural gas combined-cycle technology," the 2013 re-proposal retains the old BSER for natural gas units, but in addition identifies partial-carbon capture as the BSER for coal-fired units.[6] The different standards for natural gas and coal in the 2013 proposal reflect the EPA's recognition that emissions from natural gas units (the 2012 BSER for all fossil fuel-fired units) are different from those that can be expected from coal-fired units with integrated partial-carbon capture technology (the separate 2013 BSER for coal-fired units). In addition to the slightly higher emissions standard for coal, the re-proposal shortens the time that new coal plants have to integrate CCS (the 30-year averaging period under the original proposal was changed to seven years under the re-proposal), based upon EPA's assessment of the current state of CCS technology. Thus, although EPA has seemingly acknowledged that it is inappropriate under the CAA to hold natural gas and coal to the same standard, the practical differences between the two standards is negligible, and the new proposal is still based upon the assumption that CCS technology will be commercially viable in the near future.

Feasibility of CCS

While new natural gas power plants should be able to meet the proposed standards without additional technology, new coal plants would have to install CCS in order to meet the standard. Section 111(a)(1) of the CAA requires that the proposed performance standards must be achievable through emission reduction systems that have been "adequately demonstrated." EPA maintains that requiring new coal plants to incorporate CCS poses no insurmountable obstacles. But industry groups and politicians from coal states vigorously oppose this so-called "war on coal," and argue that CCS is neither technologically nor economically feasible.

There are various CCS pilot projects in the United States and abroad, and EPA cited in its 2013 re-proposal four new coal-burning power plants that are being built with CCS in North America.[7] None of these plants, however, are operational yet.[8] Although the EPA maintains that CCS technology can play an integral role in reducing GHG emissions, the fact remains that there has not yet been one operational, commercially scalable CCS system on any power plant in the world.

Regarding the economics of CCS, EPA states that "[b]ecause [the proposed standards] are in line with current industry investment patterns, these new standards are not expected to have notable

costs and are not projected to impact electricity prices or reliability."[9] This view diverges drastically from that of many in the industry who believe that the re-proposal ignores the reality that coal will continue to be a major source of electricity into the foreseeable future. Those who oppose EPA's re-proposal argue that, by holding the coal industry to unattainable standards, electricity prices will rise, economic uncertainty will grow, and American jobs will be lost.

Financing for CCS

EPA's re-proposal allows new coal plants to average their emissions over seven years, which is intended to give coal-fired plants additional time for CCS technology to evolve and costs to decrease. Opponents argue, however, that even with the seven-year option, no reasonable energy company would spend money now to construct new coal-fired plants that rely on a technology that has not yet proven operational on a commercial scale. Industry lobbyists also point out that regulatory uncertainty and legal liabilities surrounding the largely untested CCS technology would make investing in new coal-fired units "expensive and impractical."[10]

In light of the commercially untested nature of the technology, commercial funding for CCS projects is difficult to find. Notwithstanding the industry's economic concerns, the U.S. power sector is responsible for approximately one-third of all U.S. GHG emissions (the largest single sector), and coal plants account for approximately 80 percent of the power industry's emissions.[11] If there is any chance of stabilizing or reducing global GHG emissions, emissions from burning coal must be reduced.

EPA maintains that CCS costs will decline and that new coal plants can take advantage of existing government subsidies and other funding sources. Over the past four years, the United States has committed approximately $11.4 billion toward CCS research. The American Recovery and Reinvestment Act of 2009 appropriated $3.4 billion in "stimulus" funds toward the technology, while in June 2013 the Department of Energy committed another $8 billion in loan guarantees for CCS through its Advanced Fossil Energy Programs draft solicitation. Research into CCS technology also remains partially funded by money made from selling sequestered carbon to be used in enhanced oil recovery, a process through which CO2 is injected into an oil field in order to increase the amount of crude oil that can be extracted.[12]

Despite the availability of government subsidies, the industry has to this point displayed a limited desire to expand CCS technology, as there was previously no penalty for releasing carbon into the atmosphere. Now the question has quickly become whether existing subsidies are enough to support the research and development required to build new coal-fired plants that are in line with the proposed standards. It remains to be seen whether EPA's re-proposal will provide an incentive to catalyze the investment that is still needed to deploy CCS technology on a commercially viable, cost-effective scale.

New York State Regulation

On June 28, 2012, DEC adopted regulations establishing CO2 emissions standards as part of New York's regulatory program for the siting of power plants in New York State that are similar to EPA's proposal to develop GHG new source performance standards for power plants as discussed above. The DEC's regulations, however, are stricter than the EPA's re-proposal in a number of key respects.

DEC's regulations set a primary CO2 output-based emission limit of 925 lbs CO2/MWh for most new or expanded fossil fuel-fired units—regardless of fuel type—as compared with EPA's

proposed 1,000 lb CO2/MWh limit for new large natural gas-fired units, and 1,100 lb CO2/MWh limit for new small natural gas-fired and new coal-fired units. Moreover, DEC's regulations do not afford new coal-fired plants the option to average emissions over multiple years, effectively closing the door to new coal-fired plants in New York State.[13] While EPA's proposed new standards apply only to the construction of new facilities, DEC's requirements also apply to existing units undergoing modifications or reconstruction. DEC's regulation is also wider in scope, providing that any type of emission source not specifically listed is to be regulated on a case-specific basis.[14]

DEC's regulation is just one part of an ongoing, statewide public health initiative. Over the last five years, there have been both state and local actions geared toward minimizing the power sector's contribution to GHGs. In New York City, sulfur dioxide and soot pollution levels have reportedly shown a substantial drop since 2008, attributable in part to the city's efforts to convert buildings from high-polluting heating oils to cleaner fuels. To that end, a recent air quality survey reports that New York City's air is the cleanest it has been in 50 years.[15]

Conclusion

If EPA's re-proposal is adopted, the ultimate impact of the rule on the coal industry will turn on the speed with which current CCS technology can be scaled up to commercial viability. And, if adopted, the coal industry will find itself at a fork in the road. Either some combination of government funding and industry investment will supply the money needed to accelerate the development of CCS technology, or the once-booming coal industry that fueled our nation through the Industrial Revolution will become a relic of the past.[16]

Christine A. Fazio *is a partner and codirector of the environmental practice group at Carter Ledyard & Milburn.* **Ethan I. Strell** *is an associate director and Fellow at the Columbia Center for Climate Change Law.* **Brandon J. Isaacson**, *an associate at Carter Ledyard, assisted in the preparation of this article.*

Endnotes

[1] Christine Fazio and Ethan Strell, "Proposed Regulations Would Limit Power Plant Greenhouse Emissions," NYLJ (June 28, 2012).

[2] "Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units," 40 C.F.R. Part 60 (Sept. 20, 2013), available athttp://www2.epa.gov/sites/production/files/2013-09/documents/20130920proposal.pdf (hereafter "Re-proposal").

[3] "CO2 Performance Standards for Major Electric Generating Facilities," 6 NYCRR Part 251, available at http://www.dec.ny.gov/regs/83094.html.

[4] Re-proposal at 15-16.

[5] "Withdrawal of Proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units," 40 C.F.R. Part 60 at 10-11 (Sept. 20, 2013) available at http://www2.epa.gov/sites/production/files/2013-09/documents/20130920withdrawal-notice.pdf.

[6] Id.

[7] Re-proposal at 19 n.4.

[8] The EPA notes that Southern Company's Kemper County Energy Facility and SaskPower's Boundary Dam CCS Project are both over 75 percent complete, while two additional projects "continue to move forward." Re-proposal at 19 n.4. But see n.10 infra.

[9] EPA Fact Sheet, "Reducing Carbon Pollution From Power Plants," (Sept. 20, 2013), available at http://www2.epa.gov/sites/production/files/2013-09/documents/20130920factsheet.pdf.

[10] Bloomberg BNA, "Power Plant Proposal Fails to Show Carbon Capture is Viable, Attorneys Say," Environment Reporter, vol. 44, no. 38, p. 2853 (Sept. 27, 2013); see also Rebecca and Cameron McWhirter, "Mississippi Plant Shows the Cost of 'Clean Coal,'" Wall Street Journal (Oct. 13, 2013) (addressing how the Mississippi Power Company's Kemper County clean-coal plant construction has become "one of the most-expensive U.S. fossil-fuel projects ever--at $4.7 billion and rising").

[11] EPA, Sources of Greenhouse Gas Emissions, available at http://www.epa.gov/climatechange/ghgemissions/sources/electricity.html.

[12] Reuters, "FACTBOX-Carbon capture projects, funding in the United States," (Sept. 20, 2013), available at http://www.cnbc.com/id/101050967.

[13] 6 NYCRR Part 251.

[14] Id.

[15] Kate Taylor, "New York's Air Is Cleanest in 50 Years, Survey Finds," New York Times, (Sept. 26, 2013) available at http://www.nytimes.com/2013/09/27/nyregion/new-yorks-air-is-cleanest-in-50-years-survey-finds.html?_r=0.

[16] On Oct. 15, 2013, the U.S. Supreme Court granted certiorari on the question of whether EPA permissibly determined that its regulation of greenhouse gas emissions from new motor vehicles triggered permitting requirements under the Clean Air Act for stationary sources that emit greenhouse gases. ORDER LIST: 571 U.S., Supreme Court, at 2-3 (Oct. 15, 2013), available at http://www.supremecourt.gov/orders/courtorders/101513zor_4g25.pdf. Unless the Supreme Court rules very broadly, its ultimate decision on that case should not affect the re-proposal for new power plants, as the certiorari question considers only EPA's authority under the Prevention of Significant Deterioration and Title V operating permit programs as to whether emissions of GHGs can trigger the need for such federal air permits, not EPA's authority to set GHG standards.