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COMMENTARY

EPA Proposes New Methane Emission Regulations for the Oil and Gas Industry

In a further attempt to limit greenhouse gas emissions, the Obama administration has proposed limiting methane emissions from the oil and natural gas industry, even though the industry has taken voluntary steps to reduce such emissions and is already subject to similar regulations in various states. The rule published in the Federal Register on September 18, 2015 proposes to amend the new, modified, and reconstructed source performance standards ("NSPS") for the oil and natural gas source category to include standards for methane emissions. This follows up on the Obama administration's and the Environmental Protection Agency's ("EPA") announcement in January 2015 that it would control methane emissions as part of the Clean Power Plan. The EPA concurrently published draft amendments to the control techniques guidelines ("CTGs") for the affected industries to achieve the minimum performance standards for new, modified, or reconstructed sources.

According to the EPA, methane is 80 times more powerful than carbon dioxide in trapping heat in the atmosphere, and methane emissions make up an estimated 9 percent of all greenhouse gas emitted as a result of human activity in the U.S. Its impact on climate change is estimated to be more than 20 times greater than carbon dioxide over a 100-year period. Natural gas and petroleum production systems are the largest industrial source of methane in the U.S., and emissions from this sector are expected to increase over the next decade.

The proposed rule adopts the same best system of emission reduction ("BSER") for methane that is currently in place for volatile organic compounds ("VOCs") under the finalized 2012 NSPS. The EPA states that the BSER for methane for the affected sources is the same as the BSER for VOCs, and therefore the proposed rule applies consistently across an industry already obligated to comply with the VOC emission standards. According to the EPA, sources already subject to the 2012 NSPS requirements for VOC reductions—including hydraulically fractured gas well completions and equipment leaks at natural gas processing plants—will not need to install additional controls or incur additional costs to meet the 2015 requirements, because the controls to reduce VOCs are effective in reducing both pollutants.

In addition to adding methane emission limits to the 2012 NSPS, the new proposed rule includes additional sources and equipment currently not subject to the 2012 rule, along with additional controls. By including these additional sources under the regulatory umbrella, the EPA effectively applies the existing

NSPS requirements to equipment, processes, and activities "across the source category." In sum, the proposed rule:

- Applies the methane and VOC emission limits to hydraulically fractured oil well completions (the 2012 rule applies only to hydraulically fractured natural gas wells);
- Applies the methane and VOC emission limits to sources "downstream" from oil and production sites that are currently unregulated under the 2012 NSPS, such as centrifugal and reciprocating compressors, natural gas-operated pneumatic controllers, and storage vessels; and
- Requires that new, modified, and reconstructed well sites and compressor stations conduct fugitive emission surveys and repair any sources of fugitive emissions found within 15 days, in accordance with the Leak Detection and Repair program.

Scientific Basis for Methane Gas Regulation

Like the 2012 NSPS, the proposed rule likely will have both proponents and detractors. Even before the proposed rule, the rate and volume of methane emissions from the oil and gas sector were greatly disputed, with competing scientific, industry, and government reports drawing varying estimates and conclusions.

In September 2013, the University of Texas—in partnership with the Environmental Defense Fund and participating energy companies—completed a study that measured methane emissions at natural gas production sites. While the UT study found that total methane emissions from natural gas production from all sources were comparable to EPA estimates, the methane emissions from well completion flowback are 97 percent lower than EPA estimates from April 2013. At the same time, methane emissions from pneumatic equipment and storage leaks were significantly higher than EPA estimates.

A separate methane study published by the journal *Science* in February 2014 drew drastically different conclusions, finding that methane is leaking from oil and natural gas drilling sites and pipelines at rates 50 percent higher than EPA estimations. On April 15, 2014—in association with this proposed rule—the EPA released for external peer review five technical white papers on issues covering potentially significant sources of methane and VOC emissions and possible mitigation in the oil and gas sector. The EPA estimates that these standards for new and modified sources could reduce 340,000 to 400,000 short tons of methane in 2025, the equivalent of reducing 7.7 million to 9 million metric tons of carbon dioxide.

Implications of the Proposed Rule

Effect on Existing State Methane Regulations. The Climate Action Plan recognizes that individual states are the primary regulators of many aspects of oil and gas production activities and the distribution of natural gas. Consequently, many states already have implemented or proposed comparable methane regulations in advance of the proposed federal rule.

In February 2014, Colorado became the first state to directly target methane emissions from oil and gas operations. Colorado adopted the NSPS requirements from the 2012 EPA regulations, and Wyoming adopted similar rules shortly thereafter. Anticipating the proposed rule, the Colorado rules are not limited to well completion or flowback emissions but apply along the entire production chain. This includes monitoring and reporting for the well site, storage tanks, gathering lines, compression stations, and processing plants. The rules also describe the pollution equipment and control practices that must be used to comply with these emission prevention requirements. The Colorado rules are meant to be complementary to the NSPS standards, while also providing specific control measures for emissions resulting from venting, flaring, pipeline and storage leaks, and insufficient capture. Unlike the proposed EPA rule, the Colorado regulations apply to both existing and new operations. The rules are expected to reduce methane emissions in the state by approximately 65,000 tons per year.

Similarly, in April 2015, the California Air Resources Board released draft regulations for VOC and methane emissions for crude oil and natural gas facilities that are similar to the EPA proposed rule. In addition to the requirements and regulated sources in the proposed federal rule, the California regulations contemplate including requirements for vapor collection for emissions that occur during the liquids unloading processes of natural gas production wells, despite the absence of federal standards for these emissions. Under

the California draft rules, state regulators anticipate annual reductions of 556,000 million tons of greenhouse gases beginning in 2018.

In conjunction with the proposed federal rule, the EPA also issued Control Techniques Guidelines to serve as an emission control model for states to develop reasonably available control technology to meet the emission reduction requirements. These guidelines are nonbinding, however, and states may use different technology or controls to achieve the required reductions. The proposed NSPS does not preclude states from establishing or expanding their own VOC or methane reduction programs. As more states develop their own regulations independent of the proposed federal requirements, the federal requirements may only complement the measures already in place by state regulators and industry actors in states with heavy oil and natural gas activities.

Costs to the Industry. Along with the environmental benefit, any discussion of the implications of an EPA regulation necessarily begins with the resulting costs to the affected industry. The Clean Air Act requires the EPA to consider cost, energy needs, and environmental and health considerations before NSPS can be finalized. This usually results in a cost-effectiveness analysis to evaluate whether the benefit of the proposed control achieves the targeted emission reduction at a reasonable cost. Here, the EPA estimates that the proposed rule will have climate benefits of approximately $200 million by 2020, against a cost of $150 million to $170 million. By 2025, the EPA estimates that the net benefits could reach $150 million. As an added incentive and for no extra cost, the EPA asserts that the proposed methane regulations simultaneously will reduce other toxic and smog-forming pollutants.

In addition to emission reduction measures, some of the emission controls for hydraulically fractured oil wells identified by the NSPS capture methane and VOC emissions that would ordinarily be vented into the atmosphere. Under the "green completion" controls recommended by the EPA, special equipment separates gas and liquid hydrocarbons from the flowback that comes from the well as it is being prepared for production. This captures the gas at the well head immediately after well completion instead of releasing it into the atmosphere or flaring it off. Rather than a sunk cost, the capture of salable methane can be directed back into natural gas production streams and sold on the market. The revenues generated by this recovery then could offset some of the engineering costs associated with implementing the NSPS.

In response, the oil and gas industry believes it has already reduced methane emissions through capture, rendering the proposed rule unnecessarily costly and repetitive. As discussed above, sources subject to the 2012 rule have been required to put controls in place that will necessarily reduce methane emissions to the proposed limits. The industry has a financial incentive to capture leaking natural gas emissions, and burdensome regulation and oversight creates additional costs that could exceed the potential financial recovery for the captured gas. Despite U.S. oil and natural gas production being, until recently, at their highest level in nearly 30 years, EPA data shows that methane emissions in the United States have decreased 15 percent since 1990. The proposed rule, therefore, only adds an additional regulatory layer, with the accompanying regulatory compliance costs, to achieve what may be limited practical effect on methane emissions. The rule is particularly unwelcome as producers are facing some of the lowest oil and natural gas prices in recent memory.

Applying the Regulations to Existing Sources. Although the proposed rule is primarily directed at new, modified, and reconstructed sources, there are indications that existing sources eventually may be subject to similar regulations. Earlier this year, as part of the Clean Power Plan, the EPA finalized a rule to cut carbon pollution for existing power plants. Although the EPA's authority to establish standards for existing sources under the Clean Air Act Section 111(d) is certain to be challenged, the final rule demonstrates a protocol to expanding methane and VOC standards to existing sources.

Indeed, the EPA is already providing the framework for a potential rule for existing sources. Simultaneous with the proposed rule for new or modified sources, the EPA issued draft Control Techniques Guidelines ("CTGs") for reducing VOC and methane emissions from existing equipment and processes in the oil and natural gas industry. While the CTGs do not impose legal requirements for existing sources, they provide recommendations for state and local air agencies to consider in determining reasonably available control technology

("RACT") for reducing emissions from covered processes and equipment. Subject to EPA approval, states may use different technology and approaches as long as they achieve the required pollution reductions. Tellingly, many of the RACT recommended levels of control are similar to the VOC requirements under the 2012 NSPS and the proposed rule, including recommendations for storage tanks, pneumatic controllers and pumps, centrifugal and reciprocating compressors, and equipment leaks and other fugitive emissions.

Finally, in July 2015, the EPA proposed a voluntary methane emission reduction program for the oil and gas industry. This voluntary program creates a program for companies to reduce methane emissions via capture and other controls. The purpose of the program is to complement the regulatory requirements and provide incentives for companies to reduce emissions from existing sources. While recognizing the potential overlap with future regulatory action, the program permits flexibility for companies in selecting the emission reduction activities they undertake to achieve the emissions goal. The EPA plans to launch the program at the end of 2015.

Taken together, these actions demonstrate the likelihood that the methane and VOC regulations for the oil and gas industry under the proposed rule could eventually extend to existing sources.

Concurrent Proposal to Clarify "Adjacent" Sources. While the proposed methane emissions rule is the latest rule headliner, the EPA also proposed another rule that may have lasting effects on the industry. Concurrent with the proposed methane emissions rule, the EPA also published a proposed "Source Determination for Certain Emission Units in the Oil and Natural Gas Sector." This proposal attempts to clarify the EPA's aggregation policy that defines what constitutes a stationary source subject to the applicable major source permitting requirements.

Under the Clean Air Act's permitting requirements, any oil and gas exploration facilities with a common owner and that are "adjacent" to one another are considered a single source for the purposes of the NSPS requirements. Multiple "adjacent" sources aggregated into a single source effectively could become a "major source" under the Clean Air Act, thereby affecting their permitting obligations.

The EPA is proposing for public comment two options for defining "adjacent." Under the first option, pointedly preferred by the EPA, "adjacent" would be defined by proximity. The EPA determines proximity by whether the sites are "contiguous or are located within a short distance of one another." If specific distance is preferred, the EPA suggests one-quarter mile as the measure of "proximity." The second option would define "adjacent" to include functionally interrelated equipment that otherwise may not meet the proximity requirement. Even if the distance between the equipment or production activities is greater than one-quarter mile, they may still be "adjacent" via their exclusive functional interrelatedness.

Conclusion

The EPA clearly has methane emissions in its crosshairs, and its regulatory actions are not limited to the oil and gas industry. On August 13, 2015, the EPA issued two proposals to reduce methane emissions from municipal solid waste landfills. In addition, the Bureau of Land Management issued an Advance Notice of Proposed Rulemaking in April 2014 seeking public comment on a possible rulemaking that could reduce the waste of methane from mining operations on public lands. The EPA will accept comments on the proposed rule for methane emissions until November 17, 2015.

Lawyer Contacts

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