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The Legal Framework for Federal Methane Regulation

Methane is a greenhouse gas with 25 times the warming capacity of carbon dioxide. Methane makes up about 11% of all greenhouse gas emissions in the United States. Primary sources of methane include oil and gas production, transportation and storage (methane is the main component of natural gas), landfill gases, coal mines, and agricultural practices. Methane emissions are primarily regulated under the Clean Air Act (CAA) but also may be regulated pursuant to other statutory authorities.

This In Focus summarizes existing federal authority to regulate methane emitted from all sources except agricultural sources. Methane emitted by agricultural sources is addressed primarily through voluntary programs and thus outside the scope of this In Focus.

Clean Air Act

Section 111 of the CAA (42 U.S.C. § 7411) directs the Environmental Protection Agency (EPA) to regulate emissions from certain categories of stationary sources that emit any pollutant that EPA has determined “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.” EPA has identified methane as an air pollutant, and it has listed oil and gas production, transportation, and storage facilities and municipal solid waste landfills as source categories that emit methane.

Once EPA identifies a source category as contributing to pollution that may endanger public health and welfare, Section 111 requires EPA to develop New Source Performance Standards (NSPS) to regulate emissions from newly constructed, modified, or reconstructed sources in that source category. Section 111 also requires EPA to develop emissions guidelines for pollutants from existing sources in categories for which EPA develops NSPS, so long as the pollutant to be regulated is not already regulated pursuant to another provision of the CAA. NSPS and emissions guidelines represent the level of emissions reduction achievable by the application of the best system of emission reduction (BSER) as determined by EPA. Sources may achieve emissions reductions any way they see fit, so long as emissions reductions are equal to the reductions achievable by the BSER identified by EPA. Where individual states have EPA-approved State Implementation Plans (SIPs) states implement NSPS. Otherwise, implementation of NSPS falls to EPA. Individual states implement emissions guidelines through SIPs that must be approved by EPA. In the event a state does not submit an emissions guideline SIP, EPA must develop one for the state. Performance standards and emissions guidelines are then included in an individual source’s CAA permit.

Oil and Gas Industry Methane Regulations Under the CAA

Gas and oil production, transportation, and storage account for about 32% of methane emissions in the United States. On November 15, 2021, EPA released a proposed rule that would establish NSPS and emissions guidelines for the oil and gas source category for methane emissions. 86 Fed. Reg. 63,110. The Office of Management and Budget received the final rule for review on August 15, 2022.

If EPA promulgates the proposed rule without changes, it would regulate methane in two significant ways. First, it would require most oil and gas production facilities to stop venting and flaring methane—that is, releasing or burning methane as a waste byproduct of the production process. Facilities would be required to capture the methane and either route it to a pipeline that would deliver the gas for commercial use or use it onsite as a fuel source. If neither option were available, the rule would permit continued flaring of methane but would require a 95% emissions reduction and additional monitoring and reporting requirements.

Second, the rule would impose expanded methane leak detection standards on oil and gas production equipment and compressor stations by expanding the number of components checked for leaks and increasing the frequency of monitoring. The rule proposes to use optical gas imaging to detect leaks. The proposed rule also sought comment on the use of other leak detection technology, such as sensor networks, unmanned aircraft, mobile detection equipment, and satellite imagery.

The proposed rule would also promulgate emissions guidelines for existing sources that largely track the limitations in the NSPS for new sources.

Municipal Solid Waste Landfill Methane Regulations Under the CAA

Landfills account for approximately 17% of methane emissions in the United States. EPA promulgated a new NSPS for municipal solid waste landfills in 2016. 81 Fed. Reg. 59,276. The 2016 rule amended an earlier NSPS issued in 1996. The 2016 rule applies to landfills built, modified, or reconstructed after July 17, 2014, with a design capacity of at least 2.5 million metric tons.

The rule reduced the threshold for when a landfill has to capture landfill gases from 50 metric tons per year of non-methane organic compounds to 34 metric tons. The rule also altered monitoring requirements and expanded approved uses for landfill gas.

Emissions guidelines for existing municipal solid waste facilities largely tracks the limitations in the NSPS for new landfills with the notable exception that the guidelines kept the threshold for capturing landfill gasses at 50 metric tons for closed landfills.

During the Trump Administration, EPA delayed the implementation of the emissions guidelines, which delayed the submission and approval of SIPs. Forty-two states have yet to submit a SIP. On May 21, 2021, EPA issued a new final rule creating a federal implementation plan for states that have yet to submit a SIP and issuing new regulations for states to submit SIPs after the federal plan is in place. 86 Fed. Reg. 27,756.

Infrastructure Investment and Jobs Act

EPA estimates that coal mines (active, inactive, and abandoned) account for about 8% of methane emissions nationally. EPA does not currently regulate coal mine methane emissions. The agency maintains an outreach program to encourage the capture and use of methane emissions from coal mines.

The Infrastructure Investment and Jobs Act appropriated \$11.3 billion to reclaim abandoned mine lands. Reclaiming abandoned mines includes filling in the mine to approximate the contour of the land prior to mining and replanting native vegetation, crops, or trees. According to the White House, reclaiming abandoned mine lands may help reduce methane emissions from abandoned mines.

Mineral Leasing Act

The Mineral Leasing Act (MLA) governs the development of oil and gas on federal lands. The MLA gives the Department of the Interior (DOI) the authority to set royalty rates for oil and gas produced on federal land. In 2016, the Bureau of Land Management (BLM), an agency within DOI, issued a regulation pursuant to Section 189 of the MLA that would have imposed royalties on all gas produced on federal land (including gas that was vented or flared) and thereby would have increased the amount of gas subject to royalty payments. That rule, however, was vacated by a federal district court in Wyoming. The court found that the main purpose of BLM's rule was to regulate air pollution, but Congress delegated regulation of air pollution to the EPA pursuant to the CAA. BLM, accordingly, lacked the statutory authority to promulgate the rule. Although methane is therefore not currently regulated under the MLA, Section 50263 of P.L. 117-169 (commonly referred to as the Inflation Reduction Act of 2022 [IRA 2022], discussed below) largely mirrors the vacated BLM rule.

PIPES Act of 2020

The PIPES Act imposes stricter standards for natural gas pipeline leak detection and repair, requiring repair of all leaks hazardous to human safety or the environment or with the potential to become hazardous. The Pipeline and Hazardous Materials Safety Administration has initiated a rulemaking process to implement the stricter leak detection standards. The proposed rule has yet to be released.

Inflation Reduction Act of 2022

Section 50263 of the IRA 2022 requires DOI to include in all oil and gas leases issued after enactment of the IRA 2022 a provision requiring lease holders to pay royalties on all natural gas produced on federal land and on the outer continental shelf. The royalties apply to gas lost due to venting, flaring, or negligence. The statute displaces BLM guidance that permitted royalty-free venting and flaring of methane in certain circumstances. The statute makes exceptions for emergencies, gas used on site, and gas that is unavoidably lost. The statute effectively supersedes the federal district court decision that vacated the BLM methane waste prevention rule discussed above.

Section 60113(c) of the IRA 2022 amended the CAA to direct the EPA to collect a charge from owners or operators of oil and gas infrastructure (except distribution lines) for wasted methane emissions. The provision applies to the following categories of covered facilities:

1. Offshore petroleum and natural gas production,
2. Onshore petroleum and natural gas production,
3. Onshore natural gas processing,
4. Onshore natural gas transmission compression,
5. Underground natural gas storage,
6. Liquefied natural gas storage,
7. Liquefied natural gas import and export equipment,
8. Onshore petroleum and natural gas gathering and boosting, and
9. Onshore natural gas transmission pipeline.

The provision only applies to listed facilities that emit more than 25,000 metric tons of carbon dioxide equivalent per year. Facilities are charged for emissions in excess of a threshold set in the statute. The charge is initially set to \$900 per metric ton of methane emitted above the relevant threshold and rises to \$1,500 per metric ton of methane after two years. Different thresholds are set for different categories of facilities. Facilities that comply with future CAA methane regulations, such as the proposed NSPS and emissions guidelines for the oil and gas source category, are exempt from the charge. EPA's proposed NSPS and emissions guidelines cover the same categories of facilities as those listed in the IRA 2022. The IRA 2022 directs EPA to determine whether facilities are exempt from the charge.

Offshore Oil and Gas Methane Emissions

The Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement do not currently regulate methane emissions from offshore oil and gas production. EPA's proposed methane emission regulation and the two IRA 2022 provisions, however, apply to emissions from offshore oil and gas production.

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