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Control of Methane in the Oil Patch: Low Hanging Regulatory Fruit?

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An Article exploring the history of federal agency regulation of oil & gas industry generated methane under the Clean Air Act, focusing on the Environmental Protection Agency's latest rule. It also discusses other statutory initiatives for addressing oil patch generated methane, including the methane fee under the Inflation Reduction Act.

As a greenhouse gas (GHG), methane is a "super-pollutant" that disproportionately impacts climate change in the near term. The Intergovernmental Panel on Climate Change (IPCC) has reported that, over a 20-year period, one ton of methane in the atmosphere has about 80 times the warming impact (traps more heat) as the same amount of carbon dioxide (CO_2). Experts have also estimated that approximately 30% of today's anthropogenic climate change stems from methane emissions (see The White House Office of Domestic Policy, U.S. Methane Emissions Reduction Action Plan (November 2021) (the Methane Reduction Plan at p. 3)). Methane also poses certain risks to human health.

The oil & gas sector is the largest industrial source of methane emissions in the US, at 30% (see Environmental Protection Agency: Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019 (Apr. 2021)). Methane may be emitted (whether intentionally or unintentionally) at all stages in the oil & gas value chain, including drilling, well completion, processing, and transportation. Because of the volume of methane emitted from oil & gas operations, any reduction in emissions from this sector will have a material effect on total US methane emissions.

Despite the significant environmental and health impacts of methane emissions, US regulators have not historically been focused on reducing methane emissions from the oil & gas sector or otherwise. But over the past several years, the federal government has recognized that reducing methane from this sector is low hanging regulatory fruit that can significantly impact the rate of global warming, have other, direct public health and environmental benefits, and help it meet its goals under the Paris Agreement and the Global Methane Pledge (see Practice Note, UNFCCC, the Kyoto Protocol and the Paris Agreement and Article, Biden Administration Energy and Climate Change Policies and Regulations: 2021 Tracker: Global Methane Pledge).

Several US federal agencies, including the Environmental Protection Agency (EPA) and the Department of the Interior's Bureau of Land Management(BLM), have proposed rules regulating both existing and new sources of methane emissions from the oil & gas sector. These rules include incentives or "carrots" as well as regulatory "sticks" to incentivize the oil & gas industry. But these rules have faced political, regulatory, and legal challenges and obstacles.

This Article:

- Discusses the importance of reducing methane emissions.
- Explores the history of federal regulation of oil & gas industry generated methane under the Clean Air Act (CAA) (42 U.S.C. §§ 7401 to 7671q), the federal government's primary vehicle for addressing methane emissions, focusing on its latest rules.
- Discusses other statutory initiatives to reduce oil patch generated methane, including the Inflation Reduction Act (Pub. L. 117-169, 136 Stat. 1818 (2022)).

Importance of Regulating Methane

Methane (CH_4) is the simplest hydrocarbon and the primary component of natural gas. Comprising one carbon atom covalently bonded to four hydrogen atoms, methane is produced both:

- From natural systems (for example, wetlands, the ocean, and peat bogs, as the product of decomposing organic materials in the absence of oxygen).

- As a result of human activities. This includes:
  - oil & gas exploration and production;
  - municipal landfilling;
  - coal mining and incomplete fossil fuel combustion; and
  - livestock husbandry.

Methane (through the combustion of natural gas) is a cleaner, more versatile burning fuel than coal or oil, but it has its disadvantages, including its impact on climate change and health.

Impact of Methane Emissions

Although US methane emissions are significant, the Methane Reduction Plan, which focuses on federal government strategies and initiatives to cut US methane emissions, has noted that "the benefits of near-term reductions also are commensurately large. ...[and] reducing methane emissions today can generate near-immediate climate benefits, providing room for the longer-term transition to a clean energy economy" (see the Methane Reduction Plan at p. 4). For more information on this plan, see Article, Biden Administration Energy and Climate Change Policies and Regulations: 2021 Tracker: US Methane Emissions Reduction Action Plan.

In addition to their impact on climate change, methane emissions also contribute to ozone formation, which is linked to a variety of serious public health effects, including reduced lung function, asthma attacks, asthma development, emergency room visits and hospital admissions, and early death from respiratory and cardiovascular causes (see the Methane Reduction Plan at p. 3). In the oil patch, methane emissions are usually accompanied by emissions of hazardous air pollutants (HAPs) and volatile organic compounds (VOCs) emissions that produce ground level ozone and smog and may include toxic constituents. Some studies suggest that reducing global methane concentrations by 50% would lead to 100,000 fewer premature respiratory deaths due to ozone exposure (see the Methane Reduction Plan at p. 3).

Action on methane is therefore one of the most effective steps the oil & gas sector can take to mitigate climate change and help the US meet the Paris Agreement goal of limiting global average temperature increases to 1.5°C degrees above pre-industrial levels. Reductions in methane also have non-climate change related benefits to public health and the environment.

Methane Emissions in the Oil & Gas Sector

Methane may be emitted from many aspects of oil & gas operations. It may be:

- Intentionally released, through venting and flaring. This includes:
  - venting of associated gas from oil wells and storage tanks and from well completions during production;
  - venting from equipment (for example, pneumatic devices). Methane emissions from these devices have been one of the largest sources of vented methane emissions from the oil & gas industry (see EPA: Options For Reducing Methane Emissions From Pneumatic Devices In The Natural Gas Industry (2006)); and
  - flaring or burning of excess natural gas at a petroleum production site, resulting in both uncombusted methane and carbon dioxide emissions.

  The oil & gas industry has developed innovative technologies such as green completions to reduce flaring and venting. Green completions use on-site portable or fixed equipment to reduce methane emissions during completions and workovers (re-workings of existing wells). This equipment can be directly connected into other well-site equipment to recover an average of 53% of the gas that would otherwise be wasted by flaring (see EPA: Green Completions: Lessons Learned from Natural Gas STAR (2004) and EPA: Reduced Emissions Completions for Hydraulically Fractured Natural Gas Wells (2011)). See also, Questions Regarding the Necessity of the Fee for more information on industry initiatives to reduce methane emissions.
- Accidentally released, through leakage from oil and gas equipment. This may be by design, routine wear and tear, malfunction of the equipment or improper installation or maintenance of equipment.
- Released during transmission and storage, including because of pipeline leaks.

In 2022, the EPA published a report that, among other things, estimated where emissions were highest in the US oil & gas supply chain. The report estimated that, of the total US emissions in 2020:

- 60% was from hydrocarbon production (41% from gas production and 19% from oil production). Most of these emissions (about 64%):
  - came from pneumatic controllers, which are typically used as liquid level controllers, pressure regulators, and valve controllers; or

  - were emitted during the gathering and boosting stages (including compression, dehydration, and transport of gas). During these stages, gathering and boosting stations receive the natural gas from production well pads before delivered it via gathering pipelines to gas processing plants or gas transmission or distribution systems (see Natural Gas Process and Value Chain Checklist);

- 19% was from transmission and storage. This was primarily from reciprocating compressors, pipeline leaks, and station venting.
- 6% was from processing.

(See EPA: Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2020 (Apr. 2022).)

However, a recent research report from the Harvard John A. Paulson School of Engineering and Applied Sciences has found that the EPA's figures of methane emissions from the oil & gas sector are largely under reported when compared with emissions estimates from satellite data. According to the report, between 2010 and 2019, these emissions were 70% higher than the EPA's estimates (see Proceedings of the National Academy of Sciences, Observation-derived 2010-2019 trends in methane emissions and intensities from US oil and gas fields tied to activity metrics (Vol. 120 | No. 17) and The Oil and Gas Industry Is Emitting Way More of This Potent, Planet-Warming Gas Than the EPA Has Estimated (Apr. 17, 2023)).

In April 2022, the U.S. Government Accountability Office (GAO) released a report on the oil & gas sector's contribution to US methane emission totals and the federal actions needed to address emissions from oil & gas development. The report noted that "about 60% of total global methane emissions come from human activities, of which fossil fuel production, including natural gas, accounts for about 34%" (see US GAO: Federal Actions Needed to Address Methane Emissions from Oil and Gas Development (April 2022)).

Methane Regulation Under the Clean Air Act

The EPA must establish under the CAA air quality emissions standards for categories of industrial facilities or stationary sources that cause or contribute significantly to air pollution that may endanger public health or welfare (42 U.S.C. § 7411(b); see also, Congressional Research Service, "Clean Air Act: Electricity Sector and Greenhouse Gas Standards," March 12, 2021).

Section 111(b) of the CAA requires the EPA to develop and establish maximum emission levels for new and modified stationary sources (new source performance standards (NSPS)) that apply to specific categories of stationary sources that cause or contribute significantly to air pollution, such as the oil & natural gas sector. The NSPS must "reflect the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the [EPA] Administrator determines has been adequately demonstrated." (42 U.S.C. § 7411(a)(1)).

The EPA must also promulgate regulations for existing sources, but only after NSPS have been promulgated under section 111(b) of the CAA (42 U.S.C. § 7411(d)). Section 111(d) of the CAA also establishes procedures for states to submit plans establishing performance standards for existing sources that would be subject to NSPS if they were new, barring an exclusion under this section.

Invoking its authority under Section 111 of the CAA, the EPA has made several attempts to regulate methane emissions from the oil & gas sector, with limited success.

History of EPA Methane Regulation

Despite significant environmental and health impacts, methane emissions have not always been an area of focus for federal and state regulators. Methane was only directly regulated under the CAA in 2016 (see Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 81 Fed. Reg. 35823 (Jun. 6, 2016) and Legal Update, EPA Finalizes Methane Rules to Reduce Emissions from Oil and Gas Sector).

Most recently, on December 6, 2022, the EPA published a proposed rule to fortify and broaden methane regulations for new and existing stationary sources under the CAA to reduce methane emissions from the oil & gas industry (see Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review (87 Fed. Reg. 74702 (Dec. 6, 2022)) and Legal Update, EPA Issues Supplemental Proposal to Regulate Methane Emissions from the Oil & Gas Industry).

This section briefly discusses the EPA's previous attempts to regulate methane and the status of these attempts.

Pre-Biden Administration Rules: Obama Administration

On December 7, 2009, the EPA, under Section 202(a) of the CAA, found that six key GHGs, including methane,

constitute a threat to public health and welfare (42 U.S.C. § 7521(a) and Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act (74 Fed. Reg. 66496 (Dec. 15, 2009))). This was in response to the Supreme Court's decision in *Massachusetts v. EPA* which held that GHGs qualify as "air pollutants" under the CAA (127 S. Ct. 1438 (2007)).

In 2012, the EPA published a final rule, Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews (2012 NSPS) updating the VOC standards for equipment leaks at onshore natural gas processing plants (77 Fed. Reg. 49542 (Aug. 16, 2012) (codified at 40 C.F.R. part 60, subpart OOOO) (Quad O)). This rule also established VOC standards for several oil and natural gas-related operations, including:

- Gas well completions.
- Centrifugal and reciprocating compressors.
- Natural gas operated pneumatic controllers.
- Storage vessels.

Although the EPA expressly noted that it was "not taking final action with respect to regulation of methane", there was limited and indirect regulation of methane emissions from sources controlled for VOCs.

In 2016, under the Obama administration, the EPA promulgated Subpart OOOOa (Quad Oa), which regulated for the first time methane emissions from the oil & gas sector, by setting NSPS for methane emissions for new and modified stationary sources (sources constructed after September 18, 2015) and expanding VOC emission reduction requirements for a broader range of oil & gas equipment (81 Fed. Reg. 35,824 (Jun. 3, 2016) and see Legal Update, EPA Finalizes Methane Rules to Reduce Emissions from Oil and Gas Sector). The 2016 standards applied to various segments of the oil and natural gas source category, including:

- Oil and natural gas well sites.
- Natural gas production, gathering, and boosting stations.
- Processing plants.
- Transmission and storage facilities.

Quad Oa did not apply to or regulate methane emissions from existing sources. However, the EPA indicated in the 2016 rule that it "will begin with a formal process to require companies operating existing oil and gas sources to provide information to assist in the development of comprehensive regulations to reduce GHG emissions." In November 2016, the EPA followed up on its intention to regulate methane from existing sources by sending an information collection request to operators asking them to identify ways to control methane from existing oil and gas sources to support the development of guidelines that would then direct the states to adopt EPA model requirements.

Judicial challenges to the new rules and the transition to the Trump administration and two related rulemaking changes thwarted this initiative, however. About 30 states and oil & gas industry stakeholders challenged Quad Oa in court, but the dispute was paused while the Trump administration reconsidered the rule.

Pre-Biden Administration Rules: Trump Administration

In 2020, the EPA promulgated two rules:

- Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review (85 Fed. Reg. 57018 (Sept. 14, 2020)) (2020 Trump Policy Rule). This rule rescinded Quad Oa and Quad O and NSPS regulating methane from oilfield sources. It also eliminated all oil & gas NSPS requirements for sources in the transportation and storage segment.
- Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration (85 Fed. Reg. 57398 (Sept. 15, 2020)) (2020 Trump Technical Rule). This rule made technical and implementation revisions to the VOC standards from the 2016 NSPS that had been brought to the EPA's attention.

For more information on these rules, see Legal Update, EPA Issues Two Final Rules to Roll Back Oil and Gas Methane Emissions Regulations.

The EPA's final policy amendments also explained that emission guidelines addressing existing sources in this sector were no longer necessary considering these roll backs.

Biden Administration and the New Proposed Rules

In June 2021, President Biden signed a joint resolution of disapproval under the Congressional Review Act (CRA), which allows a new administration to overturn a prior administration's regulations if adopted within 60 legislative days (5 U.S.C. § 801). If a rule is invalidated

under the CRA, the regulating agency may not reissue the rule in substantially the same form or issue a new rule that is substantially the same unless specifically authorized by law (5 U.S.C. § 801(b)(2)).The joint resolution reinstated Quad Oa and Quad O as if the Trump methane rules never happened (see Legal Update, President Biden Signs Congressional Resolution Repealing Trump-Era Rule that had Weakened Regulations to Limit Methane Emissions from the Oil & Gas Industry).

The resolution of disapproval did not, however, address the amendments made to the VOC standards under the 2020 Technical Rule. Therefore, according to EPA officials, sources are currently required to comply with two sets of standards that differ in certain respects: methane standards based on the 2016 NSPS and the VOC standards based on the 2016 NSPS, as modified by the 2020 Technical Rule. Under current methane standards, the EPA requires operators to perform semiannual monitoring at well sites, including low production sites, to detect methane emissions. As a part of these monitoring requirements, operators are required to send personnel to well sites to detect leaks, using handheld equipment specified by the EPA.

2021 Proposal

On November 15, 2021, the EPA invoking its authority under Section 111(d) of the CAA, proposed a rule, Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review (2021 Proposal) that would for the first time, regulate methane emissions from existing stationary sources in the oil & gas sector (86 Fed. Reg. 63110 (Nov. 15, 2021)).

The 2021 Proposal divided the regulations into three classes:

- **Quad Oa** for new, modified, or reconstructed sources after September 18, 2015, and on or before November 15, 2021.
- **Subpart OOOOb (Quad Ob**) for new, modified, or reconstructed sources after November 15, 2021.
- **Subpart OOOOc (Quad Oc)** for existing sources, which includes (with one exception) sources that "commenced construction, reconstruction, or modification before November 15, 2021."

The 2021 Proposal sought to:

- Strengthen requirements for new sources under the 2016 rules.
- Broaden the types of covered sources including adding new sources to be regulated such as natural gas-driven intermittent vent pneumatic devices.
- Encourage technological development and deployment of cost-effective methane reduction technologies in the oil & gas sector.

The 2021 Proposal did not, however, include proposed regulatory language, but instead was a preamble that called for comments. It did, however, describe standards for:

- Sweetening units.
- Well completions.
- Gas well liquids unloading operations.
- Associated gas from oil wells.
- Wet seal centrifugal compressors.
- Reciprocating compressors.
- Pneumatic controllers.
- Storage vessel.
- Fugitive emissions from compressor stations.
- Equipment leaks at natural gas processing plants.

For more information on this rule, see Legal Update, EPA Proposes Rule to Regulate and Reduce Methane Emissions from the Oil & Gas Sector.

The Methane Reduction Plan estimated that "the proposed requirements would reduce by approximately 75% emissions from the sources, equipment, and operations that the proposal covers, and that those reductions would total 41 million cumulative tons of methane between 2023 and 2035, the equivalent of 920 million metric tons of CO_2." (See the Methane Reduction Plan at p. 7).

2022 Proposal

On December 6, 2022, the EPA published a supplemental proposed rule, Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review (2022 Supplemental Proposal), including the actual proposed regulatory text, to further "update, strengthen, and expand" the standards proposed in the 2021 Proposal (87 Fed. Reg. 74716 (Dec. 6, 2022)).

The 2022 Supplemental Proposal expands the requirements and scope set out in the 2021 Proposal. For example, it eliminates the previously described "monitoring exemption" for small wells. As a result, any oil & gas company, regardless of size, must routinely monitor leaks at every well site and compressor station for the life of the site.

Some of the important aspects of the 2022 Proposed Rule are set out below. The 2022 Supplemental Proposal:

- Requires routine leakage monitoring at all well sites for the life of the site, until the wells are plugged and a final monitoring survey demonstrates there are no methane emissions.
- Establishes a super-emitter response program (SERP) that would require oil & gas owners and operators to conduct root cause analyses and complete corrective, mitigating actions on notice from an EPA-approved third party that a "super-emitter event" has been identified at the source. Super-emitter events are defined as quantified emissions of 100 kg/hour or greater of methane.
- Prohibits flaring unless a professional engineer has certified that a sales line is not available and other beneficial uses are not technically feasible. It also requires flares to comply with "good flare performance" requirements and conduct continuous monitoring (for instance, to confirm that the pilot flame is always burning).
- Narrows the 2021 Proposal emission standards for fugitive emissions by requiring monitoring of fugitive emissions at all well sites and pneumatic pumps and imposing a zero-emissions standard for pneumatic pumps. For instance, "ranging from a quarterly audio, visual, and olfactory inspection for single wellhead-only sites to quarterly optical gas imaging inspections for any site with significant production equipment."
- Facilitates a wider selection of methane detection technologies that is not limited to optical gas imaging surveys or EPA method. The EPA also proposed several screening options, where screening frequency corresponds to minimum detection levels, or even allowing for continuous monitoring systems in lieu of periodic screening. The 2022 Supplemental Proposal also allows for a wider range of unique, alternative technologies and/or testing techniques to be approved by the EPA, upon request by an owner or operator and establishes streamlined processes for obtaining EPA approval.
- Sets standards and new flow rate requirements for dry seal centrifugal compressors, except for those compressors located at well sites. These standards were not described in the 2021 Proposal or regulated under NSPS.
- Requires that liquids unloading, which is no longer considered as a modification, be performed at a presumptive standard of zero methane and VOCs emissions for liquids unloading at existing wells. If this is not feasible, best management practices can be used in substitute under a report justifying the feasibility.
- Includes the emissions reductions, costs, and benefits that may result from the proposal (regulatory impact analysis (RIA)).
- Require states to submit state plans within 18 months of the publication of the rule and to impose a compliance timeline on designated facilities to require final compliance with the standards of performance no later than 36 months after the state plan submittal deadline.

The EPA solicited specific comments on virtually all aspects of its proposal and received 516,651 comments on the 2022 Supplemental Proposal and 472,005 comments on the 2021 Proposal.

For more information on this supplemental proposal, see Legal Update, EPA Issues Supplemental Proposal to Regulate Methane Emissions from the Oil & Gas Industry and Practice Note, Environmental Regulation of Upstream and Midstream Oil & Gas Operations: Overview.

Potential Challenges to the Proposed Biden Regulations

The EPA is still reviewing the proposed rules, although it hopes to finalize them by the end of 2023 (see Finalization of Methane Regulations and the CRA). But, not surprisingly, these proposed rules have generated significant comments from the oil & gas industry and regulators in key oil & gas producing states.

Among the 2022 Supplemental Proposal's other legal challenges is a potential vulnerability to the major questions doctrine, and particularly related to SERP.

Super-Emitter Response Program

Oil & gas industry participants are already challenging the SERP proposal for giving environmentalist and other third parties oversight of industry. Under the SERP proposal, oil & gas owners and operators must implement corrective actions upon notice from an EPA-approved third party that a "super-emitter event" has been identified. According to the American Petroleum Institute (API)'s comments on this program, it "presents numerous legal, logistical, commercial, safety, and security risks." The API also argues that the EPA has failed to:

> "explain where in the CAA it finds authority to empower third parties to submit monitoring information to an affected/designated facility that triggers regulatory obligations for the facility under the rule. The need for a legal explanation is particularly necessary here, given that this is the first time that EPA has sought to

establish such a requirement under CAA § 111 or, to our knowledge, under the CAA as a whole."

They have also already characterized this authorization as "unprecedented" because the CAA and similar statutes are intended to give experts and officials regulatory authority, not third parties. For more information on this and other comments on the proposed rule, see API's Comments on the 2022 Supplemental Proposal (February 13, 2023). See also, The American Exploration and Production Council's Comments on the 2022 Supplemental Proposal (February 13, 2023) and Western Energy Alliance's Comments (February 12, 2023).

Several environmental groups have submitted joint comments arguing that at least two sections of the CAA allow third-party data in regulation and enforcement. See the comments of Environmental Defense Fund (EDF), et. al's on the 2022 Supplemental Proposal (February 13, 2023)).

The pushback and debate amongst industry participants suggests that the some of the proposed rules are susceptible to a major questions doctrine attack (see Major Questions Doctrine).

Joint Comments of the Texas Commission of Environmental Quality and Railroad Commission of Texas

The joint comments of Texas Commission of Environmental Quality (TCEQ) and Railroad Commission of Texas (RCC) are illustrative of the regulatory headwinds the proposal faces and preview the types of judicial challenges the final rule is likely to encounter. Some of their notable criticisms of the 2022 Supplemental Proposal are set out below.

The two agencies provided both legal and technical bases for their comments.

Regarding the legal aspects of the proposed rules, the state agencies have argued that:

- The EPA's proposed state plan requirements are onerous, time-consuming, and eliminate any flexibility and discretion that the states have under Section 111(d) of the CAA to adopt emission reduction regulations.
- The RIA's analysis of the estimated costs are flawed, including its estimate that the states' implementation costs will less be than $100 million.
- The EPA does not have the authority to implement parts of the plan. Invoking the Supreme Court's major questions doctrine argument in *West Virginia v. EPA*, these regulators stated in their comments that "[t]he RIA demonstrates that significantly curtailing natural gas from the U.S. (and increasingly foreign) energy portfolio to achieve a stable climate is a major policy question that the FCAA is ill-suited to address."
- The EPA is exceeding its authority under Section 111(d) of the CAA with the proposed requirement in 40 C.F.R. §60.5363c that standards of performance for designated facilities must be at least as protective as the emission guidelines unless EPA approves alternate standards under 40 C.F.R. §60.5365c(2). The state agencies argue that:
  - the protectiveness and stringency are not necessarily equivalent, and that Section111(d) does not specify the state plan be at least as protective and allows state agencies to consider other factors, like useful life of a facility; and
  - the EPA is attempting to justify burdensome requirements across all oil and gas sources by establishing an extremely high cost per ton of methane.

Regarding the 2022 Supplemental Proposal's technical aspects, the two state agencies assert, among other things, that:

- Thermal control of methane and VOC emissions from associated gas from oil wells should be permitted.
- Oil wells with associated sour gas should be exempt from flaring restrictions.
- The fugitive monitoring requirements are burdensome and "go above and beyond current Best Available Control Technology (BACT)" since operators would have to simultaneously comply many overlapping requirements in TCEQ permits and NSPS rules, which would be even more burdensome for remote, unmanned locations.
- Wellhead-only well sites should be exempt from monitoring requirements.
- SERP should be removed from the final rule.

Major Questions Doctrine

Under the major questions doctrine, an agency's regulatory authority can be rejected if the underlying claim of authority concerns an issue of major "economic and political significance" and there is no "clear congressional authorization" for the claimed authority.

The Supreme Court applied this doctrine in *West Virginia v. EPA* to limit EPA's authority to set carbon dioxide emissions from existing coal- and natural-gas-fired power plants based on "[power] generation shifting." (142 S.Ct. 2587 (June 30, 2022)). The Court

held that the "little-used backwater of Section 111(d)" of the CAA does not grant EPA the power to cap carbon emissions by requiring coal-powered plants to shift the sources of its electricity generation to lower-emitting sources. The Court reasoned that such a carbon-dioxide cap would "substantially restructure the American energy market," and Congress did not clearly authorize this "unprecedented power over American industry" to essentially determine the makeup of the power grid.

The aftermath of this decision is unclear. The Court did not decide what kinds of pollution-control measures constitute a "system of emissions reductions" under 111(d), nor did it decide whether these "systems" must be limited to source-specific controls, a premise that was rejected by the D.C. Circuit in *American Lung Association v. EPA* (450 U.S. App. D.C. 385 (2021) (holding that the CAA does not "constrain the Agency to identifying a best system of emission reduction consisting only of controls "that can be applied at and to a stationary source" reasoning that "[e]mission-reduction measures 'for' sources may readily be understood to go beyond those that apply physically 'at' and 'to' the individual source")). Therefore, the line separating what regulatory actions trigger the major questions doctrine and which ones do not, is not clearly drawn. And, importantly, this decision does not undermine the EPA's obligation to regulate emissions (including GHG emissions) under Section 111(d), it only impacts how to do so.

The real threshold question is whether there is a fundamental flaw with the 2022 Supplemental Proposal that would trigger major questions. The TCEQ and RCC joint comments, for example, suggest that the CAA is "ill-suited" to address curtailing natural gas from the power sector to mitigate global GHG effects and, citing to West Virginia, asserts that "Congress did not intend for the Act to drive such a significant change in the development of domestic energy supply that will have global scale impacts."

While it should be noted that Section 111(d), the same authority EPA relies on in West Virginia, is also the cited authority for Quad Oc in the 2022 Supplemental Proposal, Quad Oa and Ob do not specifically rely on 111(d). Moreover, the Supplemental 2022 Proposal for methane emissions is distinguished from the struck-down "generation shifting" rule in several other ways, namely:

- The absence of "generation shifting" or any similar requirement that might economically or politically alter an industry in a substantial, significant way.
- Although not required under the CAA, the 2022 Supplemental Proposal tends to focus on emissions reductions by applying available technologies at the source (for example, prohibiting flaring and limiting fugitive emissions), and hence are "inside the fence."
- Provides for a wider variety of alternative monitoring techniques in line with the US GAO's recommendations.
- Unlike the "generation shifting" approach, no other regulatory agencies are obviously implicated through enforcement.

Some might argue, however, that the 2022 Supplemental Proposal requires states to enact legislation they would not otherwise be required to enact, exceeding the scope of EPA's authority, to comply and align with the strict, novel requirements. Also, under SERP, third parties (including citizens) would have the authority to notice plant operators of potential leaks, who would then be *required* to correct any malfunctioning/abnormal operation within ten days' notice (see the Super-Emitter Response Program).

For more information on this Supreme Court decision, see Legal Update, West Virginia v. EPA: Supreme Court Limits the EPA's Authority to Regulate Emissions from Existing Power Plants, with Implications for the Administrative State.

Other Regulatory Initiatives to Address Methane Emissions in the Oil Patch

The Biden administration is employing several other regulatory initiatives to address methane emissions in the oil & gas sector including the Inflation Reduction Act (IRA) (Pub. L. 117-169, 136 Stat. 1818 (2022)).

The 2022 Inflation Reduction Act

The IRA creates a first of its kind oil & gas waste emissions charge (the methane fee), that is scheduled to go into effect in 2024, with initial payments due in 2025 (42 U.S.C. §7436(c)). The methane fee would apply to facilities reporting over 25,000 metric tons of carbon dioxide equivalent of GHG emitted per year (the Methane Threshold). The methane fee provides an economic incentive to owners and operators of oil & gas properties that exceed the Methane Threshold to modify their equipment and operations to avoid paying the fee. A recent Congressional Research Service Report estimates that about 2,200 oil & gas facilities will be subject to this fee, or about 60% of US oil & gas producers (see CSR: Inflation Reduction Act Methane Emissions Charge: In Brief (Aug. 2022)).

The methane fee is equal to:

- $900 per metric ton of methane emitted in 2024.
- $1,200 per metric ton of methane emitted in 2025.
- $1,500 per metric ton of methane emitted starting in 2026.

The methane fee is based on emissions data that oil & gas facilities that exceed the Methane Threshold are required to report to the EPA under its Greenhouse Gas Emissions Reporting Program (GHGRP).

The oil & gas facilities subject to the methane fee include:

- Offshore and onshore petroleum and natural gas production.
- Onshore natural gas processing.
- Onshore natural gas transmission compression.
- Underground natural gas storage.
- Liquefied natural gas (LNG) storage.
- LNG import and export equipment.
- Onshore petroleum and natural gas gathering and boosting.
- Onshore natural gas transmission pipelines.

(40 C.F.R. §98.230(a).)

The EPA can waive the fee if it finalizes the NSPS and existing facility regulations in the 2022 Supplemental Proposal and those methane emission regulations are "in effect in all states" and compliant with the state regulations that "will result in equivalent or greater emissions reductions as would be achieved" under the Supplemental Proposal (42 U.S.C. §7436(f)). This waiver does not apply, however, to facilities not covered by the 2022 Supplemental Proposal, including offshore petroleum and natural gas production facilities and LNG terminals.

To assist some producers that may have difficulty complying reducing their emissions, the IRA appropriates until September 30, 2028:

- $850 million in grants to facilities subject to the fee to meet a range of objectives, including "improving and deploying industrial equipment and processes" that reduce methane emissions, which may reduce emissions from a facility below the threshold (42 U.S.C. § 7436(a)).
- $700 million to reduce emissions at marginal conventional wells (42 U.S.C. § 7436(b)).

For more information on these provisions, see Legal Update, Inflation Reduction Act: Key Energy Provisions: Methane Fee.

Criticisms of the Methane Fee

The methane fee has been criticized by oil & gas industry participants for several reasons, including its legality and how the fee is calculated. A full discussion of the issues raised by this fee is beyond the scope of this Article, but it is worth noting a few points, including its calculation, timing, and the EPA's authority to implement the fee.

In response to these concerns, there are already several proposed bills attempting to repeal this fee. For instance:

- The GOP's proposed marquee energy bill, H.R.1 (Lower Energy Costs Act), which passed the House in March 2023 and is expected to receive bipartisan support
- Texas Congressman August Pfluger (R-Texas)'s proposed legislation, the Natural Gas Tax Repeal Act (H.R.484 118th Congress (2023-2024)).

Calculation of the Methane Fee

The methane fee only applies to emissions exceeding a specific threshold that varies for different industry segments. In the case of:

- Petroleum and natural gas production facilities, the fee applies to either:
  - the number of reported tons of methane that exceed 0.2% of the natural gas sent to sale from this facility; or
  - if the facility sent no natural gas to sale, ten metric tons of methane per million barrels of oil sent to sale from a facility.
  - This structure presumably creates inequities for oil wells with more limited amounts of associated gas compared to natural gas wells, since these small gas producers would presumably be taxed comparatively.
- Nonproduction facilities, such as gathering and boosting facilities, methane emissions that exceed 0.05% of the natural gas sent for sale from the facility.
- Natural gas transmission facilities, the charge applies to methane emissions that exceed 0.11% of the natural gas sent for sale from the facility.

(42 U.S.C. § 7436(f).)

Industry participants have raised several questions about the practicality of doing this calculation as it relates to petroleum and natural gas production facilities. Some

have noted that the calculation of the 0.2% threshold is not consistent with how natural gas is typically measured or sold. They have requested guidance on how this threshold is to be calculated to avoid incurring fines.

Legality of the Methane Fee

Some industry critics have also argued that the fee was adopted without a hearing and an opportunity for discussion. According to IPAA President and CEO Jeff Eshelman, "[t]his tax was included despite not ever being considered in a hearing, receiving expert testimony in favor or opposition, no economic analysis, and no consideration of efficacy."

Coordination of the Methane Fee and the 2022 Supplemental Proposal

If the 2022 Supplemental Proposal is finalized in its current form, states would be required to:

- Submit their emissions reduction plans within 18 months of finalization of the rule.
- Impose a compliance timeline no later than 36 months after the submission of these plans.

This may cause timing issues with the trigger date for the methane fee. Even assuming the 2022 Supplemental Proposal is finalized in 2023 (which may be an aggressive timeline), the EPA does not expect the state plans to be finalized until 2026. However, the methane fee becomes payable in 2025 with respect to emissions reported for 2024. As a result, it is highly likely that producers and owners that own facilities that exceed the Methane Threshold and are therefore subject to the fee will have to pay the fee because the exemption will not be available.

Questions Regarding the Necessity of the Fee

Some industry participants have questioned whether this fee is necessary given that some producers are already implementing measures to reduce their methane emissions as part of a wider goal to reduce GHG emissions and their carbon footprint. For example:

- ExxonMobil announced in early 2023 that it had eliminated all "routine" flaring in the Permian basin and reduced non-routine flaring, as part of company goals to reduce greenhouse gas emissions (see Reuters: Exclusive: Exxon halts routine gas flaring in the Permian, wants others to follow (Jan. 23, 2023)).
- Several US producers (including ExxonMobil, ConocoPhilips, Occidental, Pioneer Natural Resource, and Range Resources) are also party to the World Bank's Zero Routine Flaring by 2030 (ZRF) Initiative whose endorsers commit to reducing to end routine flaring no later than 2030.

Mineral Leasing Act

The BLM has proposed rules to "disincentivize excessive venting or flaring of gas by requiring oil & gas operators to pay royalties to the federal government for vented or flared gas" under the Mineral Leasing Act (MLA) (30 U.S.C. §225).

The MLA requires that operators "use all reasonable precautions to prevent waste of oil or gas developed in" federal lands Under the Federal Oil and Gas Royalty Management Act, oil and gas lessees are "liable for royalty payments on oil or gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator of the lease, or due to the failure to comply with any rule or regulation, order or citation issued under this chapter or any mineral leasing law" (30 U.S.C. §1756).

On November 28, 2022, the BLM proposed a rule, the Waste Prevention, Production Subject to Royalties, and Resource Conservation (the Proposed Rule) to reduce the waste of natural gas from venting, flaring, and leaks during oil & gas production activities on Federal and Indian lands. The Proposed Rule would replace the BLM's current requirements governing venting and flaring which the BLM argues:

- Cannot address the large volume of flaring associated with the rapid development of unconventional tight oil and gas resources. According to BLM, between 2010 and 2020, the average amount of annual venting and flaring from Federal and Indian leases totaled 44.2 billion cubic feet (Bcf) per year, up from 11 Bcf per year between 1990 and 2000.
- Does not account for technological and operational advancements that can reduce losses of gas from oil storage tanks, pneumatic equipment, and equipment leaks.

The BLM estimates that the Proposed Rule would cost the oil & gas industry around $122 million per year but result in recovered gas valued at approximately $55 million per year. It would also increase royalty revenues from recovered and flared gas by $39.8 million per year.

For more information on this rule, see Legal Update, BLM Proposes Rule to Reduce Methane Emissions on Public Lands.

PIPES Act

The Department of Transportation's Pipeline and Hazardous Materials Safety Administration, in implementing the Protecting our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act of 2020 (PIPES Act) has proposed several new regulations to reduce methane by "advancing a commonsense regulatory agenda that has the potential to provide annual methane reductions of as much as 20 MMT of CO2e in methane emissions per year—a spur for new jobs for pipeline workers, welders, electricians, and other trades" (see the Methane Reduction Plan at p.7). These regulations include:

- Pipeline Safety: Gas Pipeline Leak Detection and Repair to improve the detection and repair of methane leaks from natural gas pipelines (88 Fed. Reg. 31890 (May 18, 2023) and see Legal Update, PHMSA Proposes New Rule to Improve Detection and Repair of Methane Leaks from Natural Gas Pipelines).
- Pipeline Safety: Requirement of Valve Installation and Minimum Rupture Detection Standards to among other things reduce threats to the environment including reducing GHG emissions (87 Fed. Reg. 20940 (Apr. 8, 2022) and see Legal Update, PHMSA Issues Final Rule to Reduce Ruptures and Improve Pipeline Safety).
- Pipeline Safety: Safety of Gas Gathering Pipelines: Extension of Reporting Requirements, Regulation of Large, High-Pressure Lines, and Other Related Amendments, which expanded the PHMSA's authority to include gas gathering pipelines to among other things, reduce threats to the physical environment and GHG emissions released during natural gas gathering line incidents (86 Fed. Reg. 63266 (Nov.15, 2021) and Legal Update, PHMSA Issues Final Rule Expanding Federal Oversight Over Certain Gas Gathering Pipelines).

Finalization of Methane Regulations and the CRA

The Biden administration would like to finalize these rules in 2023 or relatively early in 2024. Public comments on the 2022 Supplemental Proposal closed on February 13, 2023 and on the BLM's waste prevention rule on January 30, 2023. The EPA also aims to finalize rules implementing the methane fee. Finalizing all these regulations by the end of the year will require significant effort.

The timing for finalizing these regulations has important implications. Completing the regulations within this time frame will protect them from potentially being overturned by a joint resolution of disapproval under the CRA if Republicans gain control of Congress and the White House.