

PROPOSED ACTION
MEMORANDUM

Oil and Gas Methane New Source Performance
Standards

Environmental Protection Agency
December 2020

I. Summary

In three related actions, the Environmental Protection Agency (EPA) rolled back regulatory standards for methane emissions from new and modified oil and gas facilities; halted rulemaking for existing facilities; and narrowed EPA's approach to regulating air pollution under the Clean Air Act (CAA) by requiring a separate significant contribution finding for each pollutant emitted by a particular source.

Rollbacks

- Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, [85 Fed. Reg. 57018](#) (Review Rule) (final rule)
- Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration, [85 Fed. Reg. 57398](#) (Reconsideration Rule) (final rule)
- Notice Regarding Withdrawal of Obligation to Submit Information, [82 Fed. Reg. 12817](#)

Agency

- Environmental Protection Agency

Impact

- Required EPA to make pollutant-specific significant contribution findings for each regulated new source under CAA and establish numerical criteria—significantly reducing EPA's ability to issue future greenhouse gas regulations across all sectors.
- Removed new/modified oil and gas transmission and storage facilities from source category and rescinded methane emission regulations for all new/modified oil and gas facilities—eliminating all federal regulation of oil and gas sector methane emissions and allowing millions of tons of preventable climate-warming methane emissions and hundreds of thousands of tons of health harmful emissions per year.
- Halted rulemaking process for performance standards for existing oil and gas facilities—leaving hundreds of millions of tons of methane emissions unregulated.

Recommended Action

- Petition D.C. Circuit for abeyance in current litigation and consider petitioning for voluntary remand of the rules.
- Initiate rulemaking processes to reconsider bifurcation of source category and elimination of methane NSPS.
- Initiate rulemaking process to develop § 111(d) standards for existing sources.
- Initiate rulemaking to reconsider Review Rule's pollutant-specific and numerical criteria requirements.

II. Justification

Methane is among the most potent and abundant greenhouse gases (GHGs), with a global warming potential more than 25 times greater than that of carbon dioxide, and is responsible for approximately 20% of total global

temperature change.¹ Oil and gas operations—including production, processing, storage, and transmission and distribution—generate nearly 28% of U.S. methane emissions.² These emissions represent 0.5% of global GHG emissions and are greater than the total GHG emissions of over 150 countries.³ Oil and gas operations are also significant sources of volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions, which cause significant localized health impacts (and contribute to ground-level ozone pollution that can further harm human health).

Rapid reduction of methane and other short-lived climate pollutant emissions is vital to maintaining global temperature increases below 1.5 degrees Celsius; given the potency and short life-span of these pollutants, maximum deployment of current technologies could mitigate 0.6 degrees of warming by 2050 and 1.2 degrees by 2100.⁴ The Global Methane Alliance, a coalition of international groups, has identified reductions in methane emissions of 45% by 2025 and 60% to 75% by 2030 as realistic and achievable targets.⁵

In 2012 and 2016, EPA promulgated CAA emission standards for VOC and methane emissions from new and modified sources throughout the oil and gas sector and initiated the rulemaking process for emissions from existing sources. Up to 75% of oil and gas methane emissions can be avoided with measures like those included in the 2012 and 2016 rules—and since methane that is captured can be sold for value, a significant portion of emissions can be avoided little or no net cost.⁶ These and similar rules thus represent one of the greatest near-term opportunities for governments to limit catastrophic warming.

EPA's 2020 actions eliminated these regulations sector-wide, which could result in over three million tons of preventable methane emission reductions per year, along with over 700,000 tons of VOC emissions and 25,000 tons of HAP emissions affecting tens of millions of Americans through pulmonary, cardiovascular, and other health impacts, with particularly harmful impacts for low-income and minority communities.⁷ EPA's actions, which are based on misguided readings of the CAA, also severely curb the agency's future ability to regulate greenhouse-gas emissions under the CAA, further limiting efforts to slow global climate change.⁸

¹ Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the IPCC* (2014), pp. 5, 87, available at https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf.

² United States Environmental Protection Agency (EPA), *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018* (2020), p. ES-7, available at <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf> (for a breakdown of emissions by industry segment, see pp. 3-68 – 3-106). See also Global Methane Initiative, “Global Methane Emissions and Mitigation Opportunities,” available at <https://www.globalmethane.org/documents/gmi-mitigation-factsheet.pdf>.

³ 81 Fed. Reg. 35824, 35840 (June 3, 2016).

⁴ Yangyang Xu and Veerabhadran Ramanathan, “Well below 2°C: Mitigation strategies for avoiding dangerous to catastrophic climate changes,” *Proceedings of the National Academy of Sciences* 114 (39) 10315-10323 (September 26, 2017), available at <https://www.pnas.org/content/114/39/10315>.

⁵ See Global Methane Alliance at <https://www.ccacoalition.org/en/activity/global-methane-alliance>.

⁶ International Energy Agency, *Methane Tracker 2020*, available at <https://www.iea.org/reports/methane-tracker-2020>.

⁷ Emergency Motion for Stay Pending Review; Motion for Summary Vacatur, *Environmental Defense Fund v. Wheeler*, No. 20-1359 (D.C. Cir. Sept. 15, 2020), pp. 2-3, 30, 35, available at <http://blogs.edf.org/climate411/files/2020/09/EDF-Motion-to-Stay-EPA-Methane-Rescission.pdf>; Supplemental Comments of Environmental Defense Fund et al., Docket No. EPA-HQ-OAR-2017-0483 and Docket No. EPA-HQ-OAR-2017-0757 (April 13, 2020), pp. 16-19, available at <https://www.edf.org/sites/default/files/content/Supplemental%20Joint%20Environmental%20Comments%20on%20EPA%27s%20Proposed%20NSPS%20Rulemakings.pdf>.

⁸ See Sean B. Hecht and Harjot Kaur, “Comment on Proposed Policy Amendments 2012 and 2016 New Source Performance Standards for the Oil and Natural Gas Industry, Docket No. EPA-HQ-OAR-2017-0757” (November 25, 2019), pp. 7-9, available at https://law.ucla.edu/sites/default/files/PDFs/Publications/Emmett%20Institute/_CEN_EMM_PUB%20Methane%20Rule%20Comment%20Letter%20Hecht%20Kaur.pdf.

III. Background & Current State

Section 111 of the CAA directs EPA to list categories of stationary sources that cause or contribute to harmful air pollution and to issue new source performance standards (NSPS) to control emissions from those sources.⁹ The CAA also directs EPA to revisit the source category list and performance standards at least every eight years and update them as appropriate. EPA first issued NSPS for oil and gas facilities in 1985, regulating emissions of VOC from natural gas processing plants.¹⁰ In 2012 and 2016, EPA issued rules extending VOC emission standards and adding methane emission standards throughout the production, processing, transmission, and storage segments of the oil and gas sector. EPA also initiated the process of regulating methane and VOC emissions from existing sources in the same category.

The 2012 and 2016 Oil and Gas Methane and VOC Rules

2012 NSPS

In 2012, EPA issued New Source Performance Standards (NSPS) under CAA § 111(b) for VOC emissions from new and modified sources in the oil and gas sector, covering the production and processing segments (but not transmission and storage).¹¹ In brief, the standards covered:

- Hydraulically fractured natural gas wells—required to employ reduced emissions or “green” completion (REC) techniques and combustion devices to prevent releases of gas while the well is prepared for production.
- Compressors at natural gas production and processing facilities—required to employ 95% effective vapor control devices or regularly replace seals, depending on type.
- Gas-powered pneumatic controllers—required to limit gas bleed (if located at production facilities) or replace entirely with non-gas technology (at processing facilities).
- Storage tanks at all gas facilities and oil production facilities—required to achieve 95% emission reduction.
- Gas processing plants required to deploy leak detection and repair (LDAR) procedures for certain equipment leaks.¹²

EPA estimated these standards would reduce VOC emissions by 190,000 tons, hazardous air pollutant (HAP) emissions by 11,000 tons, and methane emissions by one million tons in the first year of implementation, with anticipated annual implementation savings of \$11 million.¹³

2016 NSPS

In 2016, EPA issued NSPS for VOC and methane emissions from new and modified oil and gas sources, updating the 2012 standards.¹⁴ In brief, the 2016 standards:

- Added GHG emission standards for centrifugal and reciprocating compressors and extended the standards to the transmission and storage segment.
- Added GHG emission standards for gas-powered pneumatic controllers and extended the standards to all segments.

⁹ 42 USC § 7411(b)(1)(A)-(B).

¹⁰ 50 Fed. Reg. 26122 (June 24, 1985).

¹¹ 77 Fed. Reg. 49490 (August 26, 2012).

¹² 77 Fed. Reg. at 49497-49498.

¹³ 77 Fed. Reg. at 49492.

¹⁴ 81 Fed. Reg. 35824 (June 3, 2016).

- Added GHG emission standards for hydraulically fractured natural gas well completions and extended the requirements to oil wells.
- Added GHG emission standards to LDAR requirements at gas processing plants.
- Instituted new GHG and VOC emission standards for gas-powered pneumatic pumps, requiring vapor control devices that achieve 95 percent emission reduction (at well sites) and zero emissions (at gas processing plants).
- Instituted new monitoring and repair requirements for fugitive emission components at well sites (semiannual) and compressor stations (quarterly) using optical gas imaging or EPA Method 21.¹⁵

EPA estimated the standards would reduce VOC emissions by 210,000 tons, HAP emissions by 3,900 tons, and methane emissions by 510,000 tons in 2025, with anticipated compliance costs of \$530 million (against climate benefits of \$690 million).¹⁶

Regulation of Existing Oil and Gas Facilities

The 2012 and 2016 NSPS rules were applicable only to new and modified oil and gas facilities under CAA § 111(b). But under CAA § 111(d), EPA may direct states to issue performance standards for existing sources for air pollutants that a) are not otherwise regulated as criteria pollutants or HAP, and b) would subject to a § 111(b) NSPS if emitted from a new or modified source.¹⁷ Establishment of standards for new sources under § 111(b) thus facilitates establishment of standards for existing sources under § 111(d)'s "gap-filling" provision; EPA followed this path when it established GHG performance standards for new power plants and for existing power plants (the Clean Power Plan) in 2015.¹⁸

Concurrent with publication of the 2016 rule, EPA issued an information collection request to operators throughout the oil and gas production, processing, transmission, and storage segments to help initiate development of standards for existing sources under § 111(d).¹⁹ The request sought basic information on wells, tanks, and compressors at all known oil and gas production sites throughout the country (the operator survey); and more detailed information on emission sources and control devices at a statistical sample of facilities across the production, processing, transmission, and storage segments (the facility survey).

The 2020 Regulatory Rollbacks

In 2020, EPA issued two rules that substantially rolled back the 2012 and 2016 oil and gas VOC and methane standards. (In 2017, EPA attempted to stay the methane standards pending rescission, but the D.C. Circuit rejected that action as arbitrary and capricious.²⁰)

Review Rule

The Review Rule (a) removed the transmission and storage segments from the oil and gas source category, (b) eliminated the 2016 NSPS' methane emission standards for all segments of the oil and gas sector, (c) halted the rulemaking process for existing sources, and (d) adopted a new interpretation of the CAA requiring a pollutant-specific finding of endangerment in order to issue NSPS, reversing prior EPA practice and potentially affecting

¹⁵ 81 Fed. Reg. at 35843-35846.

¹⁶ 81 Fed. Reg. at 35827.

¹⁷ 42 USC § 7411(d)(1).

¹⁸ See 80 Fed. Reg. 64510 (October 23, 2015) (establishing § 111(b) standards for new and modified power plants), 80 Fed. Reg. 64661 (October 23, 2015) (establishing § 111(d) standards for existing power plants).

¹⁹ 81 Fed. Reg. 35763 (June 3, 2016). EPA issued a second ICR based on comments it received on the data collection and sampling methods proposed in the initial ICR. 81 Fed. Reg. 66962 (September 29, 2016).

²⁰ *Clean Air Council v. Pruitt*, 862 F.3d 1 (D.C. Cir. 2017).

the agency's ability to issue greenhouse gas emission rules.²¹ EPA estimated that the rule would forgo reductions of VOC emissions by 12,000 tons, HAP emissions by 400 tons, and methane emissions by 448,000 tons through 2030, and generate approximately \$3 million in annual net costs—identifying zero to minimal net monetary, climate, or health benefits (and likely underestimating the emissions impacts by significant amounts due to erroneous assumptions).²²

Transmission and Storage Segments

In the 2012 and 2016 rules, EPA determined that the oil and natural gas source category encompassed not only production and processing facilities but also transmission and storage facilities. This determination was based on the “interrelated and necessary” relationships between each segment in the gas industry and the use of similar equipment types in each segment. EPA determined that the oil and gas source category listing in EPA’s 1979 Priority List of stationary source categories, which “broadly” included the oil and natural gas industry, encompassed these segments and provided sufficient authority for their inclusion. EPA also finalized a revision of the source category encompassing these segments, based on a finding under CAA § 111(b)(1)(A) that the source category as defined causes or contributes significantly to air pollution that endangers public health or welfare.²³

The Review Rule stated that these interpretations were erroneous, in part since the 1979 listing (and subsequent first emission standards proposed in 1984) did not discuss the transmission and storage segments.²⁴ EPA also found that the transmission and storage segments encompass distinct operations (transportation of fuel, rather than production of fuel and changes to its chemical composition) and distinct gas types (higher methane, lower VOC and HAP) from the production and processing segments.²⁵ This reasoning ignored previous determinations by EPA that included all processes associated with an industry in a single source category; the fact that methane is the predominant component of gas across all segments (with VOC and HAP impurities removed at earlier stages); and that the same emitting equipment (including compressors, pumps, tanks) is used across all segments.²⁶

As a result, EPA stated that the agency is required to treat transmission and storage as a separate source category, must issue a separate § 111(b)(1)(A) significant contribution finding (which the 2016 rule did not do), and must rescind all methane and VOC emission standards applicable to facilities in the transmission or storage segments. This bifurcation of the source category not only removed the downstream segments from regulation, but also created a justification for rescission of methane standards for the upstream segments.

Methane Emission Standards

Having removed transmission and storage from regulation, EPA found that “considering only the production and processing segments” the 2016 methane NSPS were redundant with the VOC NSPS for these segments, since VOC emission controls can also reduce methane emissions and they are “not selective” with respect to the type of emissions controlled.²⁷ EPA thus rescinded the production and processing segment methane standards, eliminating all methane standards for new and modified oil and gas facilities. But by eliminating methane NSPS, EPA eliminated the predicate to issue methane standards for existing sources (see below), resulting in significant emissions increases—disproving the redundancy argument.²⁸ And as EPA noted in the Review Rule, the rule will result in significant forgone emission reductions of methane, VOC, and HAP, indicating that the standards are not fully redundant.²⁹

²¹ 85 Fed. Reg. 57018 (September 14, 2020). The rule became effective on September 14, 2020.

²² 85 Fed. Reg. at 57065; Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, supra, at p. 32.

²³ 81 Fed. Reg. at 35832-35833; see also 77 Fed. Reg. 49514.

²⁴ 85 Fed. Reg. at 57025-57026.

²⁵ 85 Fed. Reg. at 57027-57029.

²⁶ Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, supra, at pp. 10-15.

²⁷ 85 Fed. Reg. at 57030-57031.

²⁸ Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, supra, at pp. 17-21.

²⁹ 85 Fed. Reg. at 57020.

Existing Source Standards

In 2017, EPA withdrew the information collection requests that had initiated the operator and facility surveys in 2016, halting progress on any existing source rulemaking under § 111(d).³⁰ In the Review Rule, EPA also stated that oil and gas sources no longer qualified for existing source methane or VOC regulation under § 111(d), based on two justifications:

- Since the Review Rule rescinded the 2016 methane NSPS, § 111(b) standards for methane could no longer serve as a predicate for § 111(d) regulation of existing sources, which covers “any air pollutant...to which [NSPS would apply].”³¹ EPA considered this a “legal consequence” of the rescission decision.
- The surviving NSPS for VOC also could not serve as a predicate for § 111(d) regulation, since VOC are precursors to ozone and particulate matter (PM) and these pollutants are listed as criteria pollutants under § 108(a).³² However, § 111(d) excludes air pollutants for which air quality criteria have been issued or which are listed pursuant to § 108(a)—making no reference to precursor pollutants or to effective regulation via standards for other air pollutants—contradicting EPA’s assertion that VOC are excluded because they “are regulated...as a result of the inclusion of ozone and PM on the CAA section 108(a) list.”³³

EPA claimed that frequent modification of existing facilities would render the VOC NSPS applicable to many of the facilities it was removing from potential § 111(d) regulation, and that market incentives, voluntary actions, and state-level regulation would lead to minimal methane emissions impact due to its § 111(d) decision.³⁴ But, as commenters noted, EPA offered no justification for these statements.³⁵ Existing oil and gas sources significantly outnumber new sources and are currently responsible for “10 million tons of methane, 2.3 million tons of VOCs and nearly 90,000 tons of [HAP] each year,” indicating that there is significant room for emission reduction through federal regulation.³⁶

Pollutant-Specific Significant Contribution Finding

Finally, the Review Rule announced a new interpretation of CAA § 111(b)(1), which requires EPA to list stationary source categories that cause or contribute significantly to air pollution and to issue emission performance standards for new or modified sources within those categories.³⁷ EPA previously interpreted this provision to allow a source-specific significant contribution finding (i.e., a determination that a source category is likely to cause or contribute to one or more types of harmful air pollution) to serve as a predicate to issue NSPS for that source category for a) pollutants specifically covered by the significant contribution finding, and b) other pollutants emitted by the source for which EPA determines it has a rational basis to regulate (for example, based on a prior, separate endangerment finding for the pollutant³⁸).

In the Review Rule, the agency interpreted the statute to limit the agency’s capacity to issue NSPS to only those air pollutants for which a pollutant-specific significant contribution finding has been made for the covered source. This new interpretation eliminates EPA’s ability to make a rational basis determination to issue new NSPS for air pollutants not specifically covered in a significant contribution finding, which underpinned EPA’s 2015 NSPS for power plant carbon emissions.³⁹ EPA stated that while the 2016 oil and gas methane NSPS made a methane-specific finding, this finding was deficient because it included consideration of transmission

³⁰ 82 Fed. Reg. 12817 (March 7, 2017).

³¹ 85 Fed. Reg. at 42 U.S.C. § 7411(d)(1)(A)(ii).

³² 85 Fed. Reg. at 57040-57041.

³³ 85 Fed. Reg. at 57041; see Sean B. Hecht and Harjot Kaur, *supra*, at p. 4.

³⁴ 85 Fed. Reg. at 57041-57043.

³⁵ Sean B. Hecht and Harjot Kaur, *supra*, at p. 5.

³⁶ Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, *supra*, at p. 19.

³⁷ 85 Fed. Reg. at 57033-57034; 42 USC § 7411(b)(1)(A)-(B).

³⁸ 81 Fed. Reg. at 35843.

³⁹ 85 Fed. Reg. at 57035.

and storage segment emissions (which EPA eliminated from the source category) and it did not establish the criteria it used to determine significance (rejecting the finding that US oil and gas methane emissions' contribution of 3.4% of total US GHG emissions was significant, since it was not based on a pre-set significance level).⁴⁰ However, § 111(b), the authority for the Review Rule, does not require pollutant-specific findings for each source category, nor does it require establishment of criteria prior to a significant contribution determination.⁴¹

While EPA did not set a significance threshold for methane in the Review Rule, it stated its intent to issue such a rule while noting that U.S. oil and gas methane emissions are “only about 7% of global methane emissions” and 1% of global GHG emissions, and “such a relatively small contribution to the national and global pool of methane emissions may not be deemed significant” in future threshold criteria.⁴²

The new pollutant-specific interpretation significantly narrows EPA’s authority to issue NSPS under § 111(b) and, as a result, to issue existing source standards under § 111(d). Under the new rule, in order to issue NSPS EPA is now required to:

- Make a significant contribution finding with respect to a particular source category’s quantity of emissions of each specific pollutant
- Demonstrate that the quantity of emissions attributable to the source meets an established numerical threshold for significance

This interpretation poses a particular challenge for future regulation of GHG emissions, which are global in nature and are emitted via a wide range of sources, reducing the likelihood that any single source category’s emissions may be found significant. This is especially true if source categories are further separated into smaller segments, as the Review Rule did for the oil and gas source category.⁴³

Reconsideration Rule

The Reconsideration Rule made more technical amendments to the 2016 NSPS.⁴⁴ These include, in brief: relaxing well completion requirements, allowing an owner/operator to locate separators at nearby centralized facilities rather than requiring them onsite at the well facility; expanding technical infeasibility exemptions for pneumatic pump requirements; allowing owner/operators to calculate storage tank VOC emissions by averaging across multiple tanks within a controlled battery; and relaxing monitoring requirements for closed-vent systems and fugitive emission components at certain sites.⁴⁵ EPA estimated the rule would forego reductions of VOC emissions by 120,000 tons, HAP emissions by 4,700 tons, and methane emissions by 450,000 tons through 2030, and generate approximately \$100 million in annual net savings.⁴⁶

Legal and Analytic Deficiencies

Scientists, policymakers, non-governmental organizations, and industry representatives have identified a wide array of significant deficiencies in the rules’ legal analysis of the purpose of the Clean Air Act, the structure and design of § 111, and EPA’s cost-benefit analysis and its assumptions regarding the oil and gas industry’s priorities and practices.

⁴⁰ 85 Fed. Reg. at 57038-57039.

⁴¹ Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, supra, at pp. 25 fn. 8, 27.

⁴² 85 Fed. Reg. at 57040.

⁴³ See, e.g., Kathryn Schroeder, “Methane Rule Rollback May Preclude Future Regulatory Action on Climate,” Niskanen Center (September 18, 2020), available at <https://www.niskanencenter.org/methane-rule-rollback-may-preclude-future-regulatory-action-on-climate/>; Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, supra, at p. 16.

⁴⁴ 85 Fed. Reg. 57398 (September 15, 2020). The rule became effective on November 16, 2020.

⁴⁵ 85 Fed. Reg. at 57403-57407.

⁴⁶ 85 Fed. Reg. at 57401.

Significant Contribution Finding

EPA's decision in the Review Rule establishing a new interpretation of § 111(b)—demanding a) a separate finding with respect to each source category's emissions of each particular pollutant, and b) an established numerical threshold for significance against which to compare findings—is both legally dubious and a significant threat to future greenhouse gas emission regulations.⁴⁷

EPA's new interpretation has no basis in the text of the CAA; § 111(b) refers only to a significant contribution finding with respect to a source category (not individual pollutants), and makes no reference to pre-set thresholds or criteria.⁴⁸ Notably, EPA's justification for the pollutant-specific requirement stems only from the fact that NSPS are pollutant-specific, and EPA is required to issue NSPS for source categories listed under § 111(b).⁴⁹ This reverse-engineered reasoning disregards statutory language as well as the periodic review of NSPS required under § 111(b); as commenters noted, § 111(b)(1)(A) is unambiguous in addressing significant contribution findings at source categories, and pollutant-specific determinations are left to the standard-setting phase § 111(b)(1)(B).⁵⁰ In addition, the new requirement of setting standards or criteria in advance of a significant contribution finding also contravenes the agency's consistent prior practice over the life of the CAA, which called for fact-specific, case-by-case analysis, rather than a uniform threshold.⁵¹

On top of these errors of interpretation, the Review Rule's significant contribution finding analysis could severely inhibit EPA's future ability to pursue climate change mitigation. If EPA is required to establish numerical criteria against which to make significant contribution findings, it could be barred from regulating greenhouse gas emissions from a range of major emitting sectors. Administrator Wheeler stated that the new requirement could make it impossible to craft a significant contribution finding for either of the newly bifurcated production/processing segment and transmission/storage segment.⁵² Considering that sector emissions constitute 28% of U.S. methane emissions and exceed the total GHG emissions of 150 countries, the numerical threshold requirement could doom regulation for a number of industrial sectors that are major emitters but represent relatively small slices of global emissions.

Source Category Definition

The Review Rule's split of the source category between production/processing and transmission/storage was similarly flawed. While the rule argued that bifurcation was justified because transmission and storage include distinct operations and gas compositions from production and processing, these minor distinctions disregard much more relevant facts: each segment operates as part of a continuous process to deliver gas to market (although there are distinct stages within the process); each segment includes the same types of polluting equipment (at different facilities); and methane is the predominant component of natural gas (with VOC and other impurities simply removed over time).⁵³ Rather, it appears that the Review Rule split the source category in order to facilitate its rollback of the methane NSPS (based on a finding of redundancy within the production and processing segments) and to reduce the likelihood of a future significant contribution finding for GHGs in either segment.⁵⁴

Methane NSPS

The Review Rule's elimination of the 2016 methane NSPS was based on two faulty premises: a) the improper bifurcation of the source category, which has little legal merit and which EPA should reconsider, and b) the

⁴⁷ 85 Fed. Reg. at 57033-57034.

⁴⁸ 42 USC § 7411(b)(1)(A).

⁴⁹ 85 Fed. Reg. at 57034.

⁵⁰ Joint Comments of Clean Air Task Force et al. on EPA's Proposed "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review" Pertaining to EPA's Solicitation of Comment on Significant Contribution Finding Under Section 111 of the Clean Air Act, Docket No. EPA-HQ-OAR-2017-0757 (November 25, 2019), pp. 2-4, available at

<https://www.edf.org/sites/default/files/content/Joint%20Comments%20on%20Significant%20Contribution.pdf>.

⁵¹ Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, supra, at pp. 27-28.

⁵² Id. at p. 16.

⁵³ Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, supra, at pp. 11-14.

⁵⁴ Id. at pp. 16-17.

improper determination that VOC and methane regulations are “redundant,” which, among other flaws, ignores the emissions impact of eliminating existing source regulatory authority.⁵⁵ In addition, EPA’s decision failed to identify any burdens imposed by the supposed redundant standards or any reason for privileging the VOC standards over the methane standards when choosing to eliminate one—rendering the rule particularly vulnerable under the Administrative Procedure Act (APA), and providing strong basis for reconsideration.⁵⁶

Existing Source Standards

In addition, as multiple commenters noted, EPA’s elimination of authority to regulate methane or VOC emissions from existing oil and gas sources—based on its elimination of the methane NSPS and novel interpretation of § 111(d)’s scope—also suffers from multiple legal flaws. By ignoring the substantial emissions and public health implications of removing existing source authority, EPA engaged in arbitrary and capricious decision making.⁵⁷ And by determining that VOC NSPS does not trigger a § 111(d) obligation to regulate existing sources, and then eliminating methane NSPS—the remaining basis for existing source regulation—EPA ensured that neither VOC nor methane from existing sources would be regulated. Since the trigger for this outcome was elimination of the methane NSPS, EPA directly contradicted its claim that VOC and methane controls are “redundant,” which formed the basis of its rescission of the methane NSPS.⁵⁸

These flaws are particularly egregious, since existing sources are responsible for the vast majority of the oil and gas sector’s methane and VOC emissions, including over 800,000 wells nationwide that emit nearly ten million tons of methane and 2.3 million tons of VOC every year.⁵⁹ Even if methane NSPS are restored for new and modified sources across the production, processing, transmission, and storage segments, the bulk of the oil and gas sector’s emissions will not be under federal regulation.

Cost-Benefit Analysis

Analysts have criticized EPA’s approach to estimating both total emission levels resulting from the Review Rule and the societal cost of those emissions. EPA estimated that the Review Rule would lead to 448,000 tons of additional methane emissions between 2021 and 2030, compared with compliance cost reduction of approximately \$9 million per year.⁶⁰ But scientists argue that EPA severely underestimated current and past methane emissions, including by relying on the erroneous assumption that fugitive methane emissions have remained level over the past ten years, when numerous studies demonstrate that emission levels have steadily increased nationwide (and others that show actual emissions are two to three times greater than EPA’s estimates).⁶¹ In a series of sixteen independent research projects, Environmental Defense Fund found the oil and gas industry emits at least thirteen million tons of methane a year, 60% more than the EPA’s estimate of eight million tons.⁶² Researchers have suggested these discrepancies are due to EPA reliance on industry self-reporting and limited on-site testing, instead of the advanced technologies and techniques employed by leading scientists.⁶³

EPA also deviated from the approach taken in the 2016 NSPS and considered only domestic impacts of climate change when determining the social cost of methane—rather than accounting for international and spill-over

⁵⁵ Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, supra, at pp. 17-22.

⁵⁶ Id. at pp. 23-24.

⁵⁷ Id. at pp. 18-20.

⁵⁸ Id. at pp. 17-19; Sean B. Hecht and Harjot Kaur, supra, at pp. 4-5.

⁵⁹ Id. at p. 19.

⁶⁰ 85 Fed. Reg. at 57065

⁶¹ Coral Davenport, “Trump Eliminates Major Methane Rule, Even as Leaks Are Worsening,” *NY Times* (Aug. 13, 2020), available at <https://www.nytimes.com/2020/08/13/climate/trump-methane.html>; Environmental Protection Agency, EPA 430-R-20-002, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018*, 3-4 (2020), available at <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-chapter-3-energy.pdf>.

⁶² Environmental Defense Fund, “Major studies reveal 60% more methane emissions” (2018), available at <https://www.edf.org/climate/methane-studies>.

⁶³ Id.; Rosalie Winn and Jessica Christy, “EPA’s proposal to rollback methane rules ignores scientific evidence, will lead to 5 million tons of methane pollution,” EDF Blog (Sep 3, 2019) available at <http://blogs.edf.org/energyexchange/2019/09/03/epas-proposal-to-rollback-methane-rules-ignores-scientific-evidence-will-lead-to-5-million-tons-of-methane-pollution>.

effects— in order to assess the environmental harm against which the rule’s compliance cost benefits are compared. This approach significantly limits the estimated cost of increasing greenhouse gas emission levels, and federal courts have previously rejected it as unsupported by science.⁶⁴

Industry Assumptions

In addition, EPA’s assumptions regarding oil and gas industry costs and preferences are not shared throughout the industry. While EPA argued that the Review Rule would cut industry costs and promote economic growth, a group of major oil and gas companies, including BP, Exxon, and Shell expressed disappointment in the rollbacks and/or committed to keep some voluntary measures in place.⁶⁵ Smaller oil and gas companies have welcomed the change, arguing they are unable to absorb the costs of monitoring methane pollution and (together with EPA) that their wells have a small methane footprint.⁶⁶ But small wells and operations are also less likely than their larger counterparts to have new equipment and adequate emission control technology in place.⁶⁷ As a result, EPA’s assumptions about the industry benefits of the rules may be inaccurate.

Litigation Status

In September 2020, a coalition of environmental groups and a group of states filed petitions for review of both the Review Rule and the Reconsideration Rule, which were consolidated into a single docket.⁶⁸ In October 2020, the D.C. Circuit denied a petitioner motion to stay the rules pending review and for summary vacatur, dissolving an earlier administrative stay and allowing the new rules to go into immediate effect, and set a briefing schedule for December 2020 through February 10, 2021.⁶⁹ The petitioners filed their opening briefs on December 7, 2020.

IV. Proposed Action

Given the urgency of reducing methane emissions in order to address climate and public health needs, and the ability to achieve a significant portion of these reductions via cost-effective regulation of oil and gas facilities, EPA should take the following actions to implement rigorous new oil and gas methane standards.

⁶⁴ *California v. Bernhardt*, No. 4:18-CV-05712-YGR, 2020 WL 4001480, at *27-28 (N.D. Cal. July 15, 2020); Niina H. Farah and Jennifer Hijazi, “‘It cannot survive.’ Why Trump’s rollback of methane rule might lose in court,” *Science Magazine* (Aug. 17, 2020), available at <https://www.sciencemag.org/news/2020/08/it-cannot-survive-why-trump-s-rollback-methane-rule-might-lose-court>; see 81 Fed. Reg. at 35840.

⁶⁵ Jeff Brady, “Trump’s Methane Rollback That Big Oil Doesn’t Want,” *NPR* (Aug. 13, 2020) available at <https://www.npr.org/2020/08/13/901863874/trumps-methane-rollback-that-big-oil-doesn-t-want>; Coral Davenport, “Trump Eliminates Major Methane Rule,” *supra*.

⁶⁶ Carlos Anchondo, “Trump’s methane rule rollback fractures oil industry,” *EnergyWire* (Aug. 14, 2020) available at <https://www.eenews.net/stories/1063711689>; Niina H. Farah and Jennifer Hijazi, *supra*.

⁶⁷ Daniel Zavala-Araiza et. al., *Toward a Functional Definition of Methane Super-Emitters: Application to Natural Gas Production Sites*, 49 *Env’tl. Sci. Technol.* 8167, 8167 (2015).

⁶⁸ Petition for Review, *Environmental Defense Fund v. Wheeler*, No. 20-1359 (D.C. Cir. Sep. 14, 2020), available at <https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/Petition%20for%20Review-%20Policy%20Rule.pdf>; Petition for Review, *Environmental Defense Fund v. Wheeler*, No. 20-1360 (D.C. Cir. Sep. 15, 2020), available at <https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/Petition%20for%20Review-%20Technical%20Rule.pdf>; Petition for Review, *California v. Wheeler*, No. 20-1357 (D.C. Cir. Sep. 15, 2020), available at <http://climatecasechart.com/case/environmental-defense-fund-v-wheeler/>.

⁶⁹ See Emergency Motion for Stay Pending Review, *Environmental Defense Fund v. Wheeler*, *supra*; Order denying motion for stay and summary vacatur available at https://www.eenews.net/assets/2020/10/27/document_pm_01.pdf.

Issue Interim Guidance

EPA should immediately issue an interim guidance document outlining the agency's updated approach to regulation of oil and gas sector emissions, including its return to long-standing legal interpretations of key CAA provisions, and its intent to conduct new rulemaking processes for NSPS and existing source standards based on these interpretations; developments in scientific understanding of methane and VOC impacts; and advances in control and monitoring technology. This guidance would serve as a roadmap for anticipated agency action, which could be of particular benefit to notify industry parties and limit any reliance on the current status quo for litigation and regulatory purposes. This guidance document should describe plans to:

- Petition the D.C. Circuit for abeyance of the Review and Reconsideration Rule litigation and consider petitioning for voluntary remand of the rules.
 - Initiate a rulemaking process to return to EPA's long-standing interpretation of § 111(b) requirements for significant contribution findings.
 - Initiate a rulemaking process to consider revising the oil and gas source category to include the transmission and storage segments.
 - Initiate a rulemaking process to consider re-instituting methane NSPS for the source category.
 - Initiate a rulemaking process to consider developing methane and VOC standards for existing sources.
- The guidance should affirmatively state EPA's commitment to developing such standards pursuant to Clean Air Act requirements to support issuance of a new information collection request.

Petition for Abeyance in Current Litigation and Consider Voluntary Remand

While EPA initiates rulemaking actions to reconsider the Review and Reconsideration Rules following the issuance of the interim guidance, the agency should petition the D.C. Circuit to suspend the current consolidated litigation initiated by state and environmental petitioners in September 2020.⁷⁰ EPA, having stated its intention to review and potentially replace the existing rule, can petition the court to suspend the litigation via an abeyance while the agency reconsiders.⁷¹ The abeyance serves multiple purposes: saving judicial resources from involvement in a potentially moot matter; protecting the Justice Department from having to change litigation positions prior to issuance of a new rule; and protecting the agency's new rule against potential decisions in favor of the prior rule. **It is especially important that a petition for abeyance be made prior to receipt of all briefs in order to satisfy the purpose of preserving judicial resources. In the Review Rule and Reconsideration Rule challenges, opening briefs will have been submitted before January 20, 2021; but reply briefs are due on January 27 and final briefs on February 10, 2021, meaning an abeyance would have limited benefit in saving judicial resources via avoided briefing, but could still save substantial resources by pausing prior to oral argument.**⁷²

Following the petition for abeyance, and while EPA initiates the new rulemaking processes described below, EPA could petition the court for a voluntary remand of the two rules, which would return them to the agency in advance of any decision on the merits.⁷³ Voluntary remand will allow the agency to proceed in its review processes without risk of an adverse determination and waste of resources on potentially moot litigation. Since the Review Rule became effective immediately following the denial of emergency stay in October 2020, and the Reconsideration Rule became effective in November 2020, EPA can take no action to delay implementation

⁷⁰ *California v. Wheeler*, No. 20-1357 (D.C. Cir.).

⁷¹ Bethany Davis Noll and Richard L. Revesz, "Regulation in Transition," 104 Minn. L. Rev. 1 (2019), pp. 24-28; Cole Jermyn and Laura Bloomer, "How to Undo the Trump-Era Regulatory Rollbacks to Redo Environmental Protection," Harvard Law School Environmental & Energy Law Program (April 23, 2020), p. 5, available at <http://eelp.law.harvard.edu/wp-content/uploads/How-to-Undo-the-Trump-Era-Regulatory-Rollbacks-to-Redo-Environmental-Protection-FINAL.pdf>.

⁷² *Id.* at p. 27; Bethany Davis Noll and Natalie Jaciewicz, "A Roadmap to Regulatory Strategy in an Era of Hyper-Partisanship," Institute for Policy Integrity (August 2020), p. 7, available at https://policyintegrity.org/files/publications/A_Roadmap_to_Regulatory_Strategy_in_an_Era_of_Hyper-Partisanship.pdf.

⁷³ Cole Jermyn and Laura Bloomer, "How to Undo the Trump-Era Regulatory Rollbacks to Redo Environmental Protection," *supra*, at p. 5.

of the rules. However, a voluntary remand would solidify the suspension of litigation achieved by an abeyance, affording EPA valuable time to complete new regulations. And since the Review and Reconsideration Rules primarily loosen existing regulatory requirements—which regulated entities already prepared or began to comply with—they are unlikely to generate any significant reliance interests that would need to be considered in crafting a new set of regulations. (The issuance of the interim guidance would also assist with minimizing reliance interests.)

In each of these petitions, interface with the Justice Department to ensure coordination of litigation positions will be essential.

Initiate New Rulemaking Processes

EPA should initiate new rulemaking processes to reconsider the actions the agency took in the Review and Reconsideration rules, including excluding the transmission and storage segments from the oil and gas source category; eliminating methane NSPS for the source category; halting the existing source rulemaking; and requiring source-specific significant contribution findings. In these rulemaking processes, EPA can rely primarily on the administrative record established in the rulemaking for the 2016 NSPS, which included extensive factual findings outlining the need for regulation of methane emissions throughout all relevant segments of the oil and gas source category, and accurate legal interpretations of the CAA supporting the appropriateness of comprehensive new source standards as implemented by the 2016 NSPS. In addition, EPA should consider information and recent developments including:

- California’s Oil and Gas Methane Regulation, which implements comprehensive performance standards, equipment replacement requirements, LDAR protocols, and reporting and enforcement for new and existing sources across the production, processing, transmission, and storage segments⁷⁴
- The European Union’s Methane Strategy, which calls for improved LDAR and venting/flaring restrictions across all segments and source types.⁷⁵
- The Oil and Gas Methane Partnership (OGMP), an industry partnership that has developed a series of best practice technical guidance for key equipment and components across all segments.⁷⁶
- The emergence of satellite-based technologies capable of performing targeted, area-specific methane leaks, including the US-based MethaneSAT and Canadian GHGSat efforts.⁷⁷
- Comments to the 2016 NSPS that called for more stringent and comprehensive requirements, such as more frequent leak monitoring and coverage of liquids unloading.⁷⁸

Reconsider EPA’s Significant Contribution Finding Interpretation

EPA should initiate a rulemaking to reconsider the Review Rule’s interpretation of § 111(b)’s requirements for significant contribution findings. As described above, EPA’s new interpretation of § 111(b), which requires a separate significant contribution finding for each source category for each pollutant and a pre-set numerical threshold for significance, conflicts with the purpose and text of the CAA and threatens EPA’s future ability to regulate greenhouse gas emissions. The global distribution of GHG pollution, and the need to reduce

⁷⁴ 17 Cal. Code Regs. §§ 95665-95677, available at <https://www3.arb.ca.gov/regact/2016/oilandgas2016/ogfro.pdf>.

⁷⁵ European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an EU strategy to reduce methane emissions (October 14, 2020), pp. 9-11, available at https://ec.europa.eu/energy/sites/ener/files/eu_methane_strategy.pdf.

⁷⁶ Oil and Gas Methane Partnership, Technical Guidance Documents, available at <https://ccacoalition.org/en/content/oil-and-gas-methane-partnership-technical-guidance-documents>.

⁷⁷ See Jonathan Elkind et al., *Nowhere to Hide: The Implications of Satellite-Based Methane Detection for Policy, Industry, and Finance*, Columbia Center on Global Energy Policy (October 2020), available at https://www.energy.columbia.edu/sites/default/files/file-uploads/Methane_CGEP_Commentary_v3.pdf.

⁷⁸ See, e.g., Joint Comments of Clean Air Task Force et al., Oil and Natural Gas Sector: Emission Standards for New and Modified Sources, Docket No. EPA-HQ-OAR-2010-0505 (December 4, 2015), available at <https://beta.regulations.gov/comment/EPA-HQ-OAR-2010-0505-7062>.

emissions from all sources simultaneously, require an interpretation of “significant contribution” commensurate to the nature of the particular air pollution problem and the risks it presents.⁷⁹ EPA’s traditional interpretation of § 111, requiring only source-specific significant contribution findings and assessing significance on a case-by-case basis, satisfies this need—and has a firm basis in the text of the CAA.

In a new rulemaking, EPA should reconsider the Review Rule’s interpretation, evaluating the purported pollutant-specific and criteria-setting requirements in light of the significant legal flaws identified above and documented extensively in comments to the Review Rule. Relevant considerations, largely identified by EPA in the 2016 NSPS rulemaking process, include:

- The unambiguous text of § 111(b)(1)(A)-(B), including the source-specific requirements of § 111(b)(1)(A) and the pollutant-specific requirements of § 111(b)(1)(B).
- The regular review and revision requirements of § 111(b)(1)(B).
- Historical agency practice.
- The need for regulatory flexibility to address varying local, regional, and global air pollution problems.

After considering all comments and facts together with these factors, EPA should issue a new rule rescinding the Review Rule’s pollutant-specific and criteria requirements and reinstating EPA’s traditional interpretation of the significant contribution finding requirement.

Reconsider the Source Category Definition

Simultaneously, EPA should initiate a rulemaking process to reconsider the Review Rule’s removal of the transmission and storage segment from the oil and gas source category. In reconsidering the Review Rule’s source category split, EPA should review the 2016 methane NSPS’ legal arguments explaining that the original 1979 source category listing covered all segments of the sector, based on the sector’s overall significant contribution to harmful air pollution, and reassess whether departure from this interpretation in the Review Rule was reasonable under the CAA and in light of known methane impacts.⁸⁰ If EPA determines that the Review Rule’s interpretation was not reasonable and a return to the holistic approach to the source category is merited—as is likely, given the flaws in the Review Rule identified above and the fact that the structure of the sector has not meaningfully changed since 2016—it should issue a new rule rescinding the Review Rule’s definition and restoring the whole-sector definition.

Develop NSPS for Methane

Simultaneously and in the same regulatory proceeding, EPA should reconsider the Review Rule’s elimination of methane NSPS and the Reconsideration Rule’s additional rollbacks.

Should EPA determine that the Review Rule’s elimination of methane NSPS and Reconsideration Rule’s accompanying changes were erroneous—based on the legal missteps described above as well as on developments in understanding of methane impacts and mitigation techniques—EPA should rescind the Review Rule and issue new methane NSPS that are at least as stringent as the 2016 NSPS. EPA should invite comment from states such as California and Colorado, which have implemented oil and gas methane regulations since the 2016 NSPS, to identify best practices and ensure complete coverage of the full oil and gas sector.⁸¹ In particular, EPA should consider California’s LDAR program, which covers all equipment and components and establishes firm requirements for monitoring, reporting, repair time, and agency inspection of facilities.⁸²

⁷⁹ Joint Comments of Clean Air Task Force et al. Pertaining to EPA’s Solicitation of Comment on Significant Contribution Finding, *supra*, at pp. 37-41.

⁸⁰ 81 Fed. Reg. at 35832-35833.

⁸¹ 17 Cal. Code Regs. §§ 95665-95677; 5 Code Colo. Regs. § 1001-9 D.

⁸² 17 Cal. Code Regs. § 95669.

Develop § 111(d) Standards for Methane and VOC Emissions from Existing Sources

Simultaneously, EPA should begin the process of establishing performance standards for existing sources under § 111(d). As discussed above, existing sources are responsible for the majority of oil and gas sector methane and VOC emissions, and EPA's justification for eliminating the agency's authority to regulate these sources is legally flawed.

As a first step, EPA should restart the information collection request for information on existing facilities, emissions, and control devices that the agency halted in 2017.⁸³ While the Review Rule effectively barred the path to § 111(d) existing source regulations, a statement of commitment to implementing § 111(d) regulations in the interim guidance document would support the issuance of an information request concurrent with reconsideration of the Review Rule's methane NSPS rollback. The information collection request will be vital to crafting an informed and defensible rule for existing sources that reflects the range of existing operations and facilities around the country.

Subsequently, EPA should initiate a rulemaking process to consider existing source standards for methane under § 111(d). EPA has previously undertaken § 111(b) NSPS rulemaking and § 111(d) existing source rulemaking simultaneously; the agency issued its final NSPS and § 111(d) standards for power plant GHG emissions on the same day in 2015.⁸⁴ In crafting these existing source standards, EPA could consider modelling them after the California Oil and Gas Methane Regulation, which applies to both new/modified and existing sources.

⁸³ 81 Fed. Reg. 35763 (June 3, 2016) (initial ICR); 81 Fed. Reg. 66962 (September 29, 2016) (follow-up ICR); 82 Fed. Reg. 12817 (March 7, 2017) (order withdrawing ICR).

⁸⁴ 80 Fed. Reg. 64510 (October 23, 2015); 80 Fed. Reg. 64662 (October 23, 2015).

