

ORAL ARGUMENT NOT YET SCHEDULED
IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 20-1357 (consolidated with No. 20-1359)

STATE OF CALIFORNIA, ET AL.,

and

ENVIRONMENTAL DEFENSE FUND, ET AL.,

Petitioners

v.

ANDREW WHEELER, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, AND UNITED STATES ENVIRONMENTAL PROTECTION
AGENCY,

Respondents

**REPLY IN SUPPORT OF EMERGENCY MOTION FOR STAY
PENDING REVIEW; MOTION FOR SUMMARY VACATUR**

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GLOSSARY

Administrator	Andrew Wheeler, Administrator, Environmental Protection Agency
EPA	Environmental Protection Agency
Rescission Rule	Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review Rule, 85 Fed. Reg. 57,018 (Sept. 14, 2020)
Section 111	42 U.S.C. § 7411
Section 112	42 U.S.C. § 7412
VOCs	Volatile organic compounds
2016 Rule	Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Final Rule, 81 Fed. Reg. 35,824 (June 3, 2016)

INTRODUCTION

The legal violations in this case are simple and clear. The Rescission Rule presents a textbook example of arbitrary and capricious agency action.

The Administrator's determination that pollution sources in the upstream and downstream segments of the oil and gas industry are so different that the Clean Air Act *requires* him to divide the preexisting source category "is so implausible it [cannot] be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). His determination that methane and volatile organic compound ("VOC") standards are redundant entirely ignores "an important aspect of the problem" as determined by Congress—the implications for pollution from hundreds of thousands of existing sources. *Id.* (Even those industry trade groups that have moved to intervene do not defend this position.) And his rescission of extant standards now while promising the required "satisfactory explanation" of the applicable criteria later violates the most basic requirements of reasoned decision-making. *Id.*

In their responses, the Administrator and movant-intervenors (“Trade Group Intervenors”) analyze the issues as though the Administrator were operating on a blank slate. He is not. The Rescission Rule is a final action that repeals public health protections, without anything approaching an adequate explanation for doing so. No technical expertise is needed to see that the Rule is unreasoned, internally inconsistent, and a blatant abdication of the Administrator’s charge to protect the public from dangerous pollution. Summary vacatur is warranted.

At the very least, a stay pending review is warranted. The Administrator and Trade Group Intervenors do not dispute that the Rescission Rule permits over a thousand currently regulated sources to cease controlling pollution immediately, or that the Rule bars EPA from regulating hundreds of thousands of existing oil and gas sources emitting millions of tons of methane pollution. They also do not dispute that methane is a powerful climate pollutant with near-term impact, or that it contributes to the unprecedented warming that is increasing wildfires, storm severity, and heat-related deaths. Nor do they dispute that operators have been complying with EPA’s prior rules without any

problem or undue burden. Indeed, Trade Group Intervenors do not even argue that a stay would prejudice their interests. Meanwhile, as the agency's response to comments document acknowledges, "50 percent [of industry] oppose[s]" the Rescission Rule, and at least one major company, Shell Oil, publicly supports a stay in this litigation. *Infra* pp. 28-29. Petitioners have satisfied the prerequisites for a stay.

ARGUMENT

I. Petitioners Are Likely to Succeed on the Merits, and the Administrator's Clear Legal Violations Justify Summary Vacatur.

Like a house of cards, the Rescission Rule collapses under the weight of its basic administrative law errors: it ignores obviously relevant considerations, fails to provide reasoned explanations, and is riddled with contradictions.

A. Dividing and deregulating the downstream segment is arbitrary and capricious.

The first issue presented is straightforward: Has the Administrator shown that the upstream and downstream segments of the oil and gas industry are *so different* that EPA's 2016 single source category combining the two was unlawful? The answer is easy: No.

In their responses, the Administrator and Trade Group Intervenor attempt to confuse matters by arguing that an Administrator acting on a blank slate *could have* chosen to create and regulate two different source categories. *E.g.*, ECF 1863772 (“EPA Resp.”) 9 (claiming segments “are sufficiently distinct” that they “*should* not” be included in the same source category) (emphasis added); ECF 1863774 (“Trade Resp.”) 6-7 (asserting that dividing the source category is “a [r]easoned approach,” reflecting “EPA’s evaluation of how to *best* define a source category”) (emphasis added).

But that is not what happened here. Rather, the Administrator claimed he was *required to reverse* EPA’s 2016 Rule and divide the source category, and denied having exercised any policy discretion in doing so. EPA Resp. 16, 18, 22.¹ Petitioners have shown, however, that EPA reasonably established a single category in 2016, and that the Administrator has therefore failed to justify his reversal. Env. Mot. 9-

¹ *E.g.*, 85 Fed. Reg. 57,018, 57,029 (Sept. 14, 2020) (combined source category “exceed[s] the reasonable boundaries of EPA’s authority”); Supplemental Appendix (“SA”) 5 (“EPA does not consider [its revision of the source category] to be a discretionary action but rather is an action to correct an earlier error.”); ECF 1861564 (“Env. Mot.”) 16 n.4. This is in sharp contrast to his rescission of the methane standards, which he expressly defended as an exercise of discretion. 85 Fed. Reg. at 57,030.

15. Thus, the Rescission Rule must be vacated. *See U.S. v. Ross*, 848 F.3d 1129, 1134 (D.C. Cir. 2017) (where agency claims it is compelled to take action, court cannot uphold action “as an exercise of the discretion that the agency disavows”).

The Administrator contends that, as a matter of law, he cannot keep the production and processing (“upstream”) segments and transmission and storage (“downstream”) segment in one category because they are not “sufficiently related.” To pass the “sufficiently related” test, he states, sources must exhibit “commonality in emissions, processes and applicable controls.” EPA Resp. 14 (citing 85 Fed. Reg. at 57,027). Considering precisely these same factors in 2016, EPA reasonably determined that the three segments of the industry belonged in the same category. Env. Mot. 9-10. The Administrator has failed to show that this determination was outside the bounds of EPA’s authority because sources in the upstream and downstream segments plainly check all of these “commonality” boxes.

First, the segments have commonality in emissions. Methane—*by far* the dominant pollutant across the entire supply chain—is emitted in large quantities in *all* segments. Env. Mot. 11-13. Second, there are

functionally identical “processes” (i.e., equipment and operations) throughout the different segments. *All* of the downstream equipment covered by the 2016 Rule (compressors, pneumatic pumps and controllers, storage vessels, etc.) is found in the upstream segments and operates in similar fashion. *Id.* 13. Third, the “applicable controls” (a mix of equipment specifications and leak detection and repair protocols) are the same in both the upstream and downstream segments. *Id.*

Accordingly, the category as defined in 2016 passes the Administrator’s “sufficiently related” test with flying colors and was plainly authorized. Indeed, the agency’s response to comments document concedes as much, directly contradicting the Administrator’s position. SA7 (“EPA agrees that the [Clean Air Act] does not preclude the EPA from regulating sources in the production, processing, and transmission and storage segments of the oil and gas industry as a single source category.”).

In the face of these obvious commonalities, the Administrator strains to assert two irrelevant factual distinctions: supposed differences in the composition of the gases and supposed differences in

business purpose.² But his response fails to show that either purported distinction is relevant, much less *requires* division of the source category.

The Administrator does not explain how “the chemical composition” of the natural gas stream is “*materially* different” in the upstream and downstream segments. EPA Resp. 17 (emphasis added). As Petitioners demonstrated, Env. Mot. 11-12, methane is the major component of the gas handled in, and the pollution emitted from, all segments of the industry. The quantity of *additional* chemicals (VOCs and hazardous air pollutants) does not change the dominance of methane in all segments or have any bearing on the applicable emission controls. *Id.* The Administrator admits this point in attempting to justify rescission of the methane standards. EPA Resp. 28 (“[T]he

² In his response, the Administrator offers a third, brand new rationale for dividing the category: that the upstream segments emit more pollution than the downstream. EPA Resp. 17-18. The Court cannot credit this post-hoc rationalization. *Natural Res. Def. Council v. EPA*, 755 F.3d 1010, 1020-21 (D.C. Cir. 2014). Further, with regard to methane, this is not even an accurate distinction. EPA’s data show that emissions from the gas transmission and storage segment are comparable to—and sometimes much greater than—other parts of the industry (like petroleum production and gas processing) that the Administrator states are properly within the source category. SA10-12.

higher proportion of methane to VOC in oil and gas production and processing is immaterial to the applicable standards because the ‘requirements of the [2016 Rule]’ apply ‘to each emission source’s methane and VOC emissions, in precisely the same way.’”). The differences in gas composition cannot be so “material” as to require dividing the source category and also completely “immaterial” to how pollution is controlled.

Likewise, the Administrator fails to show that the asserted differences in the business “purposes” of the segments, EPA Resp. 16-17, have any relevance to controlling emissions. Compressors, pneumatic pumps, storage vessels, and other polluting equipment found throughout the segments serve the same operational purposes regardless of location. For example, all compressors pressurize gas to push it through the interconnected system of equipment, and compressor emissions are controlled the same way regardless of where they are situated in the supply chain.

The Administrator’s only response is to claim that “what sources properly belong in a particular source category” is “distinct” from “how that category should be regulated.” EPA Resp. 22. But that proposition

is directly contradicted by his own “sufficiently related” test, which turns on commonalities in “emissions, processes and applicable controls,” *id.* 14, all of which relate to how pollution is regulated. It also makes no sense. If how the category should be regulated is unrelated to how a category is defined, it is difficult to understand what makes any particular commonality or distinction “material.” *Id.* 17.³

In the past, EPA has regularly formed categories based upon how pollution sources are to be regulated. Petitioners’ motion described numerous examples that are at least as inclusive as the 2016 oil and gas source category. Env. Mot. 12-14. The Administrator and Trade Group Intervenors respond that EPA has placed sources in the oil industry into several source categories. EPA Resp. 19; Trade Resp. 10-11. EPA’s treatment of the oil industry, however, emphasizes that the relevant factors are the characteristics of the emitting equipment, not the business purpose of the industry in which the equipment sits.

Indeed, four of the nine source categories that Intervenors list as part of

³ It is thus the *Administrator’s* approach that would “aggrandize [the agency’s] authority beyond Congress’s intended bounds,” EPA Resp. 14, by allowing the agency to make category decisions (and, on that basis, deregulate sources) based on distinctions that do not relate to controlling air pollution.

“the oil industry” cover multiple disparate industries. Trade Resp. 10-11 (citing steam generators, internal combustion engines, stationary combustion turbines, and storage vessels, all source categories that cover multiple industries). The relevant commonalities are the processes of the polluting sources and the applicable controls.

Moreover, neither the Administrator nor Trade Group Intervenors assert that EPA was *required* to divide the oil industry in this manner. As the Administrator notes, categorization is a “case-by-case” inquiry. EPA Resp. 23. While prior examples demonstrate that EPA’s 2016 category was well within the norm, they cannot (and do not) show that the 2016 determination was unauthorized. And notably, in every example that the Administrator and Intervenors cite, EPA *regulated* each part of the industry, so there was little reason to quibble with how the agency organized the categories. By contrast, the Administrator here has divided the source category to deregulate more than a thousand sources that were formerly controlled. Even if the Administrator had attempted to justify dividing the category as a

matter of discretion (he has not), it would be arbitrary to do so in order to deregulate the pollution sources in a major part of this industry.⁴

In short, the Administrator fails to point to a single relevant difference that justifies dividing the source category—let alone carry the burden of demonstrating that the 2016 category was *unlawful*. The Administrator’s action “is so implausible it [cannot] be ascribed to a difference in view,” nor can it be “the product of agency expertise,” *State Farm*, 463 U.S. at 43, and is plainly arbitrary and capricious.

B. Eliminating methane standards as “redundant” is arbitrary and capricious.

The second issue presented is also straightforward: Are the methane and VOC standards redundant? Once again, the answer is easy: No. Indeed, Trade Group Intervenors decline to defend the rescission of the methane standards.

⁴ Nor is it probative that upstream and downstream sources are regulated separately under a different provision of the Clean Air Act. See EPA Resp. 19. Unlike Section 111, Section 112 includes specific provisions directed at oil and gas production wells and transmission compressor stations, and prohibits the aggregation of emissions from *similar types of equipment*, 42 U.S.C. § 7412(n)(4), which limits the scope of oil and natural gas source categories under that program. And no segment of the industry is *unregulated* under Section 112.

The Administrator’s “primary basis for [the] rescission,” EPA Resp. 35—that methane standards are redundant of VOC standards—is flatly incorrect. First, and most obviously, the issuance of methane standards for new sources triggered EPA’s obligation to regulate hundreds of thousands of existing sources, while VOC standards did not. This is an enormous repercussion that the Administrator cannot ignore consistent with the statute and administrative law. Indeed, given that he does not claim any “special burden” or “practical impact” on the industry from complying with the allegedly redundant new source standards, EPA Resp. 26-27, it is difficult to see why rescinding methane standards is worth the effort unless the Administrator’s intent is to strip the agency of authority to regulate existing sources.

The Administrator does not dispute the factual basis of Petitioners’ non-redundancy argument: that existing sources are responsible for the vast majority of the millions of tons of methane emitted annually from the source category. Env. Mot. 19-20. And he acknowledges that he would be obliged to regulate existing sources if he retained methane standards for new sources, but not if he limits new source standards to VOCs alone. EPA Resp. 29; 85 Fed. Reg. at 57,033.

He insists, however, that “the impacts on existing sources were beyond the scope of [EPA’s] consideration in this rulemaking” and thus “not relevant here.” EPA Resp. 29-30 & n.7.

Bunkum. Once EPA regulates emissions of a pollutant like methane under Section 111(b), the Clean Air Act *requires* EPA to issue existing source regulations under Section 111(d). 42 U.S.C. § 7411(d) (requiring “standards of performance for any existing source of any air pollutant ... to which a standard of performance under this section would apply if such existing source were a new source”). Eliminating the agency’s obligation and authority to regulate existing sources is thus an obvious impact that EPA must consider when deciding whether to repeal new source methane standards on the basis that they are “redundant.” *See Physicians for Soc. Responsibility v. Wheeler*, 956 F.3d 634, 647 (D.C. Cir. 2020) (“[I]n failing to grapple with how EPA’s policy affected its statutory ... mandates, the [agency] ‘failed to consider an important aspect of the problem.’”).

While the Administrator pretends that Section 111 is only about new sources, EPA Resp. 30, “the stubborn fact remains” that Congress included existing source regulation as a key component of this program.

Time Warner Entm't Co. v. FCC, 56 F.3d 151, 174-75 (D.C. Cir. 1995)

(dismissing contention that the governing statute “is concerned only (or even more concerned)” with one thing Congress included to the exclusion of another). And his claim that existing sources are “grandfathered” under Section 111, EPA Resp. 30, is wrong. Congress enacted Section 111(d) precisely to ensure that existing sources of dangerous pollutants like methane, which are not regulated under other provisions of the Act, are controlled. The Administrator’s attempt to push beyond his reach this “important issue that falls smack-dab within the agency’s regulatory ambit,” *Flyers Rights Educ. Fund, Inc. v. FAA*, 864 F.3d 738, 744 (D.C. Cir. 2017), completely subverts Congress’s intent.

Second, the Administrator does not dispute that methane and VOC standards are not redundant for new sources in the downstream segment of the industry. EPA Resp. 27. Because the Administrator’s decision to divide and deregulate downstream sources is unlawful, *supra* pp. 3-11, so is his decision to rescind methane standards based solely upon redundancy for upstream sources. This is the fatal circularity of the Rescission Rule. Only by ignoring downstream sources

can the Administrator purport to find methane regulation redundant. And only by identifying gas composition and business “purpose” distinctions related to other pollutants that simply do not matter with regard to regulating methane can the Administrator purport to divide and deregulate downstream sources. He is not regulating methane because he is not regulating downstream sources, and he is not regulating downstream sources because he is not regulating methane. The Court should decline to ride this merry-go-round.

The Administrator’s brief also offers a newly-minted rationale for eliminating methane standards instead of VOC standards—that VOC standards reach sources built or modified before the methane standards were proposed. *See* EPA Resp. 26 (including a “*see*” cite to a page that does not make this argument); *Natural Res. Def. Council*, 755 F.3d at 1020-21 (rejecting post-hoc rationalizations). But this argument only underscores the non-redundancy of those standards by demonstrating that each standard does different work. While the VOC standards cover earlier-constructed sources that the methane standards do not, the methane standards trigger regulation of existing sources and enable additional controls in the downstream segment that the VOC standards

do not. This is not a problematic “patchwork,” EPA Resp. 29—without any conflict, the regulations do overlapping but different work to carry out Congress’ intent.⁵

Methane and VOC standards simply are not redundant and the Administrator’s effort to ignore “an important aspect of the problem” is arbitrary and capricious. *State Farm*, 463 U.S. at 43.

C. The Administrator’s “alternative” basis for rescinding methane standards is also arbitrary and capricious.

The final issue presented is also straightforward. In the 2016 Rule, EPA determined that methane emissions from the oil and gas category “contribute significantly” to the endangerment of public health and welfare. Env. Mot. 4. After dividing the category, the Administrator now claims the need for a segment-specific “do-over” on this determination. EPA Resp. 31-32. This claim fails because the Administrator’s removal of the downstream segment was invalid. *Supra* pp. 3-11.

⁵ The Administrator’s invocation of *Chevron* deference at the tail end of his redundancy argument, EPA Resp. 31, is puzzling. He identifies no statutory language, ambiguous or not, that he purports to interpret. Deference in statutory interpretation is not a roving deference to anything an agency would like to do.

The Administrator also argues he must rescind that determination and methane standards because EPA may not make significant contribution findings on a case-by-case basis as it has for nearly fifty years. EPA Resp. 32-35. Instead, he argues that he must first establish a uniform “standard” or “set of criteria”—a task he says he will undertake at some point in the future.

This is the height of arbitrary and capricious action. The Administrator does not explain why it is permissible to make category determinations case by case, but impermissible to make significant contribution findings on the same case-by-case basis.⁶ He cannot rescind pre-existing standards for a failure to meet criteria that he will establish, and provide a “satisfactory explanation” for, only in some speculative future rulemaking. *State Farm*, 463 U.S. at 43. And he cannot target only one standard for rescission now while claiming that the agency has been acting unlawfully for decades.

⁶ The Administrator’s attempt to distinguish *Coalition for Responsible Regulation*, EPA Resp. 34-35, falls flat. The question whether a source “significantly contributes” to dangerous pollution is “a complex question of risk to the environment,” *id.* 35, which varies from pollutant-to-pollutant and source-to-source. Env. Mot. 27-28.

An administrative law class could be taught on the textbook arbitrary and capricious violations in the Rescission Rule. This Court should summarily vacate the Rule, or, at a minimum, should conclude that Petitioners are likely to succeed on the merits.

II. Petitioners and Their Members Are Irreparably Harmed by the Rescission Rule.

The substantial climate and health harms caused by the powerful greenhouse gas methane, ozone-forming VOCs, and cancer-causing toxic air pollution emitted by the oil and gas sector are undisputed. Env. Mot. 29-30. The Administrator and Trade Group Intervenors cannot, and do not, dispute that allowing the Rescission Rule to go into effect during the pendency of this litigation will result in millions of tons of this pollution that would otherwise be prevented, starting immediately, including in areas already overburdened by unhealthy air quality. *Id.* 15-16, 19.⁷ And there is no disagreement that many of Petitioners'

⁷ The Administrator's argument that EPA was *required* to forgo the usual 60-day effective date, EPA Resp. 4 n.1, appears to be entirely novel and was not presented in the Rescission Rule. At any rate, the Rescission Rule, just like the 2012 and 2016 Rules, clearly qualifies as "major," and, indeed, EPA denominated it a "significant regulatory action" under Executive Order 12866. 85 Fed. Reg. at 57,067. The Administrator's attempt to characterize it as non-major is based on

members are already suffering the impacts of a changing climate and that many live near sources that will emit greater quantities of pollutants under the Rule, absent a stay. *Id.* 32-33, 35-36.

These unchallenged facts alone demonstrate irreparable harm. *See Sierra Club v. U.S. Dep't of Agric., Rural Utils. Serv.*, 841 F. Supp. 2d 349, 358 (D.D.C. 2012) (plaintiff demonstrated irreparable harm based on expert affidavit showing expansion of a single coal plant would “emit substantial quantities of air pollutants that endanger human health and the environment”). Petitioners are irreparably harmed by both the Rescission Rule’s deregulation of downstream sources and rescission of methane requirements. Because these two actions are legally interdependent, *see supra* pp. 14-16, the irreparable harm associated with either necessitates a stay of the entire Rule.

A. Petitioners are irreparably harmed by the removal of pollution standards for downstream sources.

The Administrator does not dispute that, during the pendency of litigation, the Rescission Rule permits substantial quantities of previously-controlled pollution to be emitted by more than a thousand

arbitrarily ignoring and minimizing benefits forgone by the Rescission Rule. *See supra* pp. 12-13; *infra* p. 20 n.8.

sources in the downstream segment. And he cannot: the Rescission Rule and its supporting analysis specifically disclose these emissions. 85 Fed. Reg. at 57,020 (Tbl. 1); SA21, 23.⁸

Rather than acknowledge the resulting harm, the Administrator principally offers new, undocumented, and unquantified speculation that he “anticipates” *some* unspecified number of operators will ignore the Rescission Rule and voluntarily control emissions in accordance with the 2016 Rule. EPA Resp. 2, 37-39. The Administrator then proceeds to flatly contradict his own claim, calculating and claiming credit for cost savings operators would realize only by fully avoiding pollution controls. *Id.* 45. Notably, Trade Group Intervenors do not claim that their members will voluntarily continue to observe the former regulatory requirements. Nor do they contest that Petitioners’

⁸ The quantities the Administrator discloses are more than sufficient to irreparably harm Petitioners’ members. Even so, they vastly underrepresent the actual emissions. Env. Mot. 31-32. The Administrator systemically underestimates the Rescission Rule’s impacts by failing to account for the well-documented problem of “super-emitting” sites, underestimating the growth in new downstream facilities, and assuming, based on limited data, that there would be no sources affected by certain provisions of the 2016 Rule. *Id.* 32 n.10; A68-69 (¶¶11-12). The true emissions resulting from the deregulation of downstream sources are likely an order of magnitude higher than the Administrator’s estimates. Env. Mot. 31-32.

members will suffer irreparable harm from the removal of standards for downstream sources.

In addition, the Administrator offers no evidence that operators would voluntarily continue to undertake *ongoing quarterly* leak detection and repair efforts. EPA Resp. 38-39. Indeed, his Regulatory Impact Analysis notes that downstream compressor stations “are expected to cease [2016 Rule]-required activities related to the [leak detection and repair] requirements.” SA16. Likewise, the Administrator’s claim that downstream operators have a financial incentive to fix leaks is belied by his observation that downstream operators “do not typically own the natural gas they transport,” and, therefore, do not directly accrue the benefits of capturing lost gas. SA24. He also argues feebly that removing these requirements will have no impact because the sources still must report emissions under the Greenhouse Gas Reporting Program. Yet that program mandates only *annual* (not quarterly) surveys, and does not require that operators *actually fix leaks found*. See 40 C.F.R. §§ 98.231(a)(4), 98.232(e)(7)-(8), 98.236.

The Administrator's new speculation likewise ignores his own findings that operators will continue to construct and begin operating hundreds of *new* sources after the Rescission Rule takes effect—all exempt from the former control requirements. *See* SA18, 21 (estimating that *hundreds* of high-emitting new pneumatic controllers will come online each year through the next decade). This Court should ignore the Administrator's unsupported and contradictory speculation.

Next, attempting to downplay the harm from the emissions he discloses, the Administrator compares the methane emissions permitted by the Rescission Rule to *total global* emissions of all greenhouse gases. EPA Resp. 40. Other courts have rightly rejected this gambit. *See California v. BLM*, 286 F. Supp. 3d 1054, 1073 (N.D. Cal. 2018) (finding irreparable harm from rule that would increase methane emissions by less than one percent of total U.S. methane emissions, rejecting agency's characterization of those emissions as "infinitesimal"); *cf. Massachusetts v. EPA*, 549 U.S. 497, 523-24 (2007) (rejecting similar argument and "erroneous assumption" that agency cannot be held accountable for failure to take a "small incremental step, because it is incremental"). The Administrator also ignores the extensive scientific

evidence on methane's disproportionate near-term impact on warming and associated harms—harms that Petitioners' members are already experiencing. *See* A173-75 (¶3).

The Administrator also attempts to diminish the Rescission Rule's localized health impacts by pointing to other Clean Air Act programs for reducing emissions. EPA Resp. 41-42. But even if new regulations under these programs could eventually replace the protections the Rule eliminates, they would do nothing to prevent the immediate emissions from downstream sources that, absent a stay, will occur during the pendency of this litigation. Nor would they ameliorate the resulting irreparable harm to Petitioners' members, thousands of whom live close to affected sources, including in ozone nonattainment areas. Env. Mot. 33; *see also* A100 (identifying affected downstream compressor stations located in 14 states).

Any additional VOC emissions in these nonattainment areas will worsen unhealthy air, and *any* additional emissions of hazardous air pollutants harm Petitioners' members living near these sources because there is no safe level of human exposure. A207 (¶¶19-21). His attempt to diminish these harms is also contradicted by his admission that these

very pollutants “may also degrade air quality and adversely affect health and welfare.” 85 Fed. Reg. at 57,020.

The Rescission Rule’s deregulation of downstream sources will cause immediate, real-world, and irreversible harm to Petitioners’ members and the public at large.

B. Petitioners are irreparably harmed by the removal of methane standards and authority to regulate existing sources.

Neither the Administrator nor Trade Group Intervenors dispute that more than 850,000 existing sources—including those located near tens of thousands of Petitioners’ members—currently emit millions of tons of methane and VOC pollution each year. They do not contest that, prior to removing methane standards, EPA had a binding duty to regulate methane emissions from existing sources and had initiated that regulatory process in 2016. That legal obligation would be restored by a judicial stay. The harm from the Rescission Rule—that it *prohibits* EPA from taking any action under Section 111(d) to control the ongoing, massive emissions from existing sources that the Administrator would

otherwise be *required* to control—is not merely imminent; it is immediate.⁹

Absent a stay, EPA’s delay in issuing existing source regulations will be further extended by at least the time this litigation is pending. Notably, while EPA claims that rulemakings take years, the agency does not claim that the time lost during this litigation could later be made up. Thus, every day of delay now means another day of delay in reducing emissions from those 850,000 existing sources. That uncontrolled pollution is occurring now, the harm it causes Petitioners’ members is certain and great, and the Administrator’s delay in curbing it—which corresponds to millions of tons of methane emissions that could be prevented—is an ongoing result of the Rescission Rule.

⁹ The Administrator suggests that Petitioners cannot claim irreparable harm from the agency’s protracted delay in issuing existing source regulations until and unless Petitioners succeed in a separate lawsuit to compel EPA to take action. EPA Resp. 43. This argument—that EPA would not fulfill its statutory duties absent court order—is particularly galling as EPA has admitted that the *only* reason for delay was its anticipated rescission of methane standards. Env. Mot. 34. At any rate, with vacatur or a stay of the Rescission Rule, the agency would no longer have any defense, so it is not speculative that the district court would order EPA to promulgate existing source regulations.

Petitioners' expert Dr. Renee McVay conducted a quantitative analysis of the existing source pollution that EPA regulation could reduce, accounting for factors such as retirement of older sources and reasonably assuming similar requirements for new and existing sources. A82-97. The Administrator declined to contest Dr. McVay's conclusions, and undertook no such analysis in the Rescission Rule. *See* 85 Fed. Reg. at 57,041 (acknowledging there will be emissions impacts from the Rule's preclusion of existing source regulation but declining to quantify them). And contrary to the Administrator's assertion, EPA Resp. 44, merely because there may be a range for the amount of pollution reduced by existing source regulations depending on their content and timing does not mean that the *harm* from forgoing those regulations is speculative.

The Administrator's and Trade Group Intervenors' assertions that emissions reductions from existing source regulation are years away only underscore the urgent need to avoid any further delay. *See* EPA Resp. 43-44; Trade Resp. 22-24. As Dr. McVay's analysis shows, each additional year without existing source standards equates to more than two million tons of methane pollution and more than half a million tons

of VOC pollution that could otherwise be prevented. A90 (Tbl. 6) (showing emissions and potential reductions from existing sources for each year from 2017-2021).

Ultimately, both the Administrator's delay in developing existing source regulations and the time it will take to implement them *compound* the irreparable harms of the Rescission Rule, forcing Petitioners to bear the additional pollution resulting from the Administrator's failure to adopt these regulations for far longer than would have been the case had the Administrator expeditiously discharged his obligation to protect human health and welfare.

III. The Public Interest and Balance of the Equities Support a Stay.

The harm to the public interest caused by the Rescission Rule is great. *Supra* pp. 18-27. There is simply no harm on the other side of the balance. Not even the Trade Group Intervenors contend that operators are harmed by a stay or that the public interest favors allowing the Rescission Rule to take effect.

The Administrator tries to claim that a stay would somehow “sacrifice economic growth.” EPA Resp. 45. But this is directly contradicted by his conclusions in the Rescission Rule that the Rule

would only “partially reduce” the “small impacts on crude oil and natural gas markets of the 2016 Rule.” 85 Fed. Reg. at 57,065; *see* A252-53 (¶18) (compliance costs amount to only 0.11% of capital expenditures and only 0.14% of annual revenue in the downstream segment); *see* Env. Mot. 38-39. It is also contradicted by his failure to claim any “special burden on industry” from the 2016 Rule, EPA Resp. 26, and his suggestion that operators will comply with the 2016 Rule anyway, *id.* 38-39.¹⁰

Indeed, many in industry *oppose* the Rescission Rule, arguing it *harms* their business interests. *See* SA3 (“Industry support for EPA proposed amendments is largely split, with ... 50 percent opposing the proposal.”); Env. Mot. 39-40. Just this week, the president of Shell Oil Company expressed support for this legal action and Petitioners’ request for a stay, explaining that the Rescission Rule harms Shell’s business by threatening access to markets for natural gas and

¹⁰ Even if the Administrator were able to substantiate an economic impact, any “adverse economic effect[s]” do not outweigh “the irreparable injury that air pollution may cause.” *Beame v. Friends of the Earth*, 434 U.S. 1310, 1313-14 (1977).

undermining investment certainty. SA26-28; *see also* SA30 (investor support for legal challenge to Rescission Rule).

In contrast, a stay will substantially and concretely benefit the public by preventing significant climate and health-harming pollution, which is especially critical for the millions of Americans living next door to sources that would not have to control emissions due to the Rescission Rule. *See* Env. Mot. 30.

CONCLUSION

Petitioners respectfully request that this Court summarily vacate the Rescission Rule or stay the Rule pending review.

DATED: October 5, 2020

Respectfully submitted,

/s/ Susannah L. Weaver

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CERTIFICATE OF COMPLIANCE

I certify that the forgoing motion was printed in a proportionally spaced font of 14 points and that, according to the word-count program in Microsoft Word 2016, it contains 5,482 words.

Petitioners jointly filed an unopposed motion for a proportionate word limit for their replies more than five days before this filing. ECF 1864002. That motion sought a combined word limit of 8,700 words for both replies, to be divided as Petitioners saw fit. *Id.* Petitioners have agreed that Environmental Petitioners' reply brief will not exceed 5,500 words, and State Petitioners' reply brief will not exceed 3,200 words.

CERTIFICATE OF SERVICE

I hereby certify that on this 5th day of October, 2020, I served the foregoing Reply in Support of Motion for a Stay or, in the Alternative, Summary Vacatur, on all parties through the Court's electronic filing (ECF) system and by email.

DATED: October 5, 2020

/s/ Susannah L. Weaver
Susannah L. Weaver

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

STATE OF CALIFORNIA, ET AL.,)	
)	
and)	
)	
ENVIRONMENTAL DEFENSE FUND, ET AL.,)	
)	
<i>Petitioners</i>)	
)	No. 20-1357 (consolidated
v.)	with No. 20-1359)
)	
ANDREW WHEELER, ADMINISTRATOR, UNITED)	
STATES ENVIRONMENTAL PROTECTION AGENCY,)	
AND UNITED STATES ENVIRONMENTAL)	
PROTECTION AGENCY,)	
<i>Respondents.</i>)	

**SUPPLEMENTAL ATTACHMENTS TO EMERGENCY MOTION FOR
STAY; MOTION FOR SUMMARY VACATUR**

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Attach. No	Title	Page
1	EPA, Responses to Public Comments on EPA's <i>Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review</i> , EPA-HQ-OAR-2017-0757-2718 (Sept. 2020) (excerpts)	SA0001
2	EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018 (Apr. 2020) (excerpts)	SA0008
3	EPA, Regulatory Impact Analysis for the Review and Reconsideration of the <i>Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources</i> , EPA-HQ-OAR-2017-0757-2716 (Aug. 2020) (excerpts)	SA0013
4	Gretchen Watkins, President, Shell Oil Company, <i>Methane rollback puts U.S. on wrong track</i> , LinkedIn (Oct. 2, 2020)	SA0025
5	Ceres & Interfaith Center on Corporate Responsibility, Oil and gas methane emissions rollback statement (Oct. 2, 2020)	SA0029

Attachment 1

EPA, Responses to Public Comments on EPA's *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review*, EPA-HQ-OAR-2017-0757-2718 (Sept. 2020) (excerpts)



**Oil and Natural Gas Sector: Emission Standards for New,
Reconstructed, and Modified Sources Review
40 CFR Part 60, subparts OOOO and OOOOa**

**Response to Public Comments on
Proposed Rule [84 FR 50244, September 24, 2019]**

Comments, letters, and transcripts of the public hearings are also available electronically through <http://www.regulations.gov> by searching Docket ID EPA-HQ-OAR-2017-0757

efficiency and effectiveness of natural gas leak detection and repair programs in the U.S. oil and natural gas sector. The commenters underscore the point that these innovations/technologies are more sensitive to methane than to VOC; thus, more accurate.

1.3.3 Industry

Industry support for EPA proposed amendments is largely split, with 50 percent of the industry comments supporting and 50 percent opposing the proposal. Commenters in favor of the proposed amendments insist that existing NSPS, particularly those requirements governing methane, are unwarranted; have resulted in little to no environmental benefits; and have created needless costs while hindering economic growth. In general, commenters agree with EPA's conclusion that neither of the required analyses (*i.e.*, separate significant contribution and endangerment findings) were performed in NSPS OOOOa methane as required under the Clean Air Act (CAA) section 111(b). The commenters conclude that EPA is obligated to generate significant contribution and endangerment findings for methane, even when significant contribution and endangerment findings have been performed for VOCs in the source category.

In contrast, industry commenters opposing the proposed amendments favor maintaining and/or tightening federal regulations on methane. The commenters echo several arguments noted above by non-industry reps (private citizens, academia, etc.) including the point that methane is a powerful GHG and several of the world's largest fossil fuel corporations have already announced an ongoing commitment to reduce methane emissions from their own operations. Most commenters feel that federal oversight is necessary to establish consistency (*i.e.*, ensure that emissions reduction standards are uniformly applied across the industry sector); to help improve the accuracy of methane emissions data obtained (*i.e.*, ensure the best systems of emission reduction are deployed across the sector); and to help improve transparency. Several commenters maintain that, to-date, industry has been able to successfully comply with the existing federal methane regulations and have also been able to demonstrate that it can control methane emissions at a reasonable cost using, for example, available technologies. Like remarks offered by academia, many commenters emphasize that emerging technologies could improve the efficiency and cost-effectiveness of fugitive emissions detection and mitigation in the near future. The commenters, therefore, urge EPA to reconsider the proposed amendments and welcome the opportunity to work with EPA to develop a reasonable, flexible and consistent framework for reducing methane emissions from oil and natural gas sources.

1.3.4 State/Local/Tribal/Federal Governments

Greater than 80 percent of comments provided on the proposal by state/local, tribal and federal government representatives oppose EPA's proposed amendments and recommend instead that EPA withdraw the proposal and maintain the 2012 and 2016 NSPS as written. The commenters, in general, are concerned about potential impacts of this proposed rule on public health and the environment. Many assert that, if finalized, the proposed rule would result in an increase in methane and VOC emissions, which they believe will accelerate the pace and intensity of climate change and global warming (*e.g.*, more frequent wildfires, droughts, etc.). Many state/local representatives express their concerns that the proposal fails to adequately address impacts to state implementation plans (SIPs) and attainment areas.

and natural gas source category includes the transmission and storage segment.¹⁴⁵ The commenter states that the proposed rule is therefore arbitrary and capricious, constitutes an abuse of EPA's discretion, and must be withdrawn.

Response: What is presumed by these commenters is that the previous decisions and rulemaking actions were reasonable and supported by the record. To the contrary, the EPA conducted extensive research as part of this rulemaking and concluded that, in fact, the previous decisions and actions made in 2012 and 2016 were in error. Specifically, the EPA finds that the 1979 initial list of the Crude Oil and Natural Gas Production source category did not include transmission and storage and that the 1985 rulemakings, including the 1984 proposals, were consistent with this conclusion. The EPA also finds that the 2016 SCF was not appropriately conducted since it was performed for the combined source category, rather than just for the transmission and storage segment that the EPA was seeking to add to the original source category. See section IX.B of the final rule preamble for EPA responses to comments on the 2016 SCF.

5.1.4.3 Discretionary Action

Comment: Commenter [2134-Joint Environmental] notes that the proposal asserts that the EPA has no discretion and must revise the oil and gas source category to remove the transmission and storage segments.¹⁴⁶ The commenter asserts that the proposal fails to demonstrate that the Agency either must or may now revise the source category and must therefore be withdrawn. The commenter states that, if it is finalized as proposed, it would be subject to vacatur for legal error.¹⁴⁷

Commenter [2134-Joint Environmental] asserts that, to the extent the EPA seeks to revise the source category as a discretionary rather than mandatory matter, then it must explain why it is choosing to exercise its discretion in that fashion.¹⁴⁸ The commenter states that this would entail a candid assessment of the emissions consequences of deregulation and an explanation of why foregoing those emissions reductions is a sensible policy that is consistent with the CAA.¹⁴⁹ The commenter states that the Agency would have to acknowledge its earlier factual record and explain any departures from that factual record. The commenter states that, in the proposal, the Agency does none of this.

¹⁴⁵ *Fox*, 556 U.S. at 515-16.

¹⁴⁶ See, e.g., 84 Fed. Reg. at 50,257 ("EPA proposes to determine that its determination in the 2016 NSPS OOOOa that equipment and operations at production, processing, and transmission and storage facilities are a sequence of functions that are interrelated and necessary for getting the recovered gas ready for distribution, was unreasonable").

¹⁴⁷ See *U.S. v. Ross*, 848 F.3d at 1134 ("Where a statute grants an agency discretion but the agency erroneously believes it is bound to a specific decision, we can't uphold the result as an exercise of the discretion that the agency disavows"); *Prill v. NLRB*, 755 F.2d 941, 947-48 (D.C. Cir. 1985) ("An agency decision cannot be sustained, however, where it is based not on the agency's own judgment but on an erroneous view of the law. For it is a fundamental principle of law that 'an administrative order cannot be upheld unless the grounds upon which the agency acted in exercising its powers were those upon which its action can be sustained.'") (citing *SEC v. Chenery Corp.*, 318 U.S. 80, 95 (1943)).

¹⁴⁸ See *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515-16 (2009).

¹⁴⁹ See *Fox Television*, 556 U.S. at 515-16.

Response: The EPA disagrees with the commenter because the EPA has acknowledged and demonstrated that the earlier “factual record” was in error. Therefore, the EPA does not consider this to be a discretionary action but rather is an action to correct an earlier error.

5.1.4.4 Reasonable Controls

Comment: Commenters [0089-Save EPA, 0226-Anonymous, 1122-Columbia Law, 1124-Food/Water, 2134-Joint Environmental, 2199-EELS] assert the proposal is arbitrary because it does not explain why these controls are no longer warranted and reasonable.

Commenter [1122-Columbia Law] asserts the EPA’s lack of justification for its proposal to rescind the controls applicable to transmission and storage facilities renders that action arbitrary and capricious, in violation of the Administrative Procedure Act. Commenter [1124-Food/Water] states that an unexplained inconsistency in Agency policy is a reason for holding an interpretation to be an arbitrary and capricious change from Agency practice.¹⁵⁰ Commenter [2163-Austin, et al] expresses concern that, while the EPA conducted an analysis in 2016 and concluded that there were cost effective strategies to reduce VOC and methane emissions from equipment associated with natural gas transmission and storage, the EPA has not presented information in the proposed rule that supports a change in that conclusion.

Commenter [2134-Joint Environmental] commenter states that the transmission and storage segments of the oil and gas industry have now been regulated for over seven years and industry actors have relied on these standards and made investments to meet them, including in capital equipment. The commenter states that the proposal would arbitrarily place these industry parties, who have complied with the regulation for years, in a different position than companies who build new sources if and when the proposal is finalized. The commenter states that nowhere does the Agency confront this fact.¹⁵¹

Commenter [2134-Joint Environmental] notes that emissions standards for the transmission and storage segments have now been in place for over seven years¹⁵² and nowhere does the proposal assert that they are not achievable, are unreasonably or exorbitantly costly, or are not reducing significant quantities of dangerous emissions. The commenter states that the proposal does not offer any practical reason to remove these segments from the source category or suggest that they would be better regulated as a separate source category beyond the EPA’s contrived “sufficiently unrelated” test. The commenter states that the proposal does not claim that performance standards for the transmission and storage segments unduly burdens industry, despite the fact that the Executive Order that ultimately led to this proposal targeted regulations that “unduly burden the development of domestic energy resources.” The commenter states that

¹⁵⁰ *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2126 (2016) (quoting *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515-16 (2009); *Nat’l Cable & Telecomm. Assn. v. Brand X Internet Serv.*, 545 U.S. 967, 981-982 (2005)) (internal quotations omitted).

¹⁵¹ See *Fox Television*, 556 U.S. at 515 (holding that an Agency must “provide a more detailed justification than what would suffice for a new policy created on a blank slate . . . when its prior policy has engendered serious reliance interests that must be taken into account.”).

¹⁵² It is notable that while some industry actors challenged EPA’s 2012 interpretation or alternative revision of the scope of the source category, all were willing to hold their challenges in abeyance for seven years and counting

97.2 percent, while in the transmission sector the methane content varied from 91.9 percent to 95.2 percent. The commenters state that VOCs in the production sector ranged from 1.2 to 5.7 percent, compared to 0.2 to 6.8 percent in the transmission sector. The commenters assert that the range of methane compositions in the production sector fully encompasses the range in the transmission sector, demonstrating the similarity of the gas composition in the two sectors; similarly, there is extensive overlap between the sectors' VOC compositions.

Commenters [2113-CARB, 2335-CA, et al] assert that the EPA's more recent data submitted in support of the proposed rule confirms its 2011 data for the production segment, with methane content in natural gas from the production segment ranging from 17.5 percent to 98.4 percent and VOC content ranging from 0 percent to 40.9 percent (2018 memorandum).¹⁸⁵ Commenter [2113-CARB] states that the 2018 data show even more variation in composition than the 2011 data, further supporting the point that there is extensive overlap between the production and processing segments and the transmission and storage segment.

Commenter [2113-CARB] notes that the 2018 memorandum did not include any updated data for the transmission and storage segment. The commenter asserts that, given the significant difference in the production segment data from 2011 and 2018, the EPA must collect more current data for the transmission and storage segment if it seeks to justify any claims about the segment being sufficiently distinct from production and processing to warrant revision of the source category. The commenter concludes that the EPA's data support retaining the transmission and storage segment in the source category because the composition of the natural gas is similar to that of the production and processing segments.

Commenter [2134-Joint Environmental] notes that the proposal recognizes "variations can occur from basin-to-basin within each segment." The commenter states that these basin-to-basin variations can swamp the purported variations on which EPA relies. The commenter states that, as support, the proposal cites to a 2018 memorandum from an EPA contractor, the Eastern Research Group.¹⁸⁶ The commenter states that that memorandum includes a table showing that wells (*i.e.*, sources located entirely within the production segment) in the Appalachian region on average have a higher percent methane than the transmission and storage segment has on average. The commenter states that the average methane percentage by volume for these basins ranges between 80 percent and 95.6 percent, a percentage difference that is far larger than the minor difference in composition between the average well (88 percent) and the average in the transmission and storage segment (93 percent). The commenter states that these compositional differences are far smaller than the varying levels of pollution that are emitted from different sources in other listed categories, such as electric utility steam generating units.

Commenter [1830-NYU Law] asserts that, regardless of whether the gas composition and operations in that segment differ from those in the production and processing segments, these differences are of no statutory significance. The commenter states that nothing in the text of CAA section 111 precludes the EPA from regulating sources in the production, processing, and

¹⁸⁵ Natural Gas Composition, November 13, 2018.

¹⁸⁶ Memorandum to U.S. EPA from Eastern Research Group, Natural Gas Composition, Dkt. No. EPA-HQ-OAR-2017-0757 (November 13, 2018).

transmission and storage segments of the oil and gas industry as a single category merely because the composition of natural gas changes as it travels through these different segments.

Response: The EPA's rationale for the final rule includes a discussion of the differences in gas composition between the production and processing segments and the transmission and storage segment. This topic is also discussed in the comments and responses section of the preamble (see section VIII.A.2 of the final rule preamble). As discussed in the preamble, the EPA recognized the lack of updated data for the transmission and storage segment and therefore conducted a comprehensive analysis of data reported directly to the Greenhouse Gas Reporting Program (GHGRP) for reporting years 2015 through 2018 to determine whether the composition of natural gas, in terms of methane content, is statistically different between industry segments. This analysis found that there is a substantial difference in methane concentrations between (i) either the gas production, gathering and boosting, or gas processing industry segments and (ii) either the transmission or storage industry segments. This agrees with earlier data and analyses and the conclusion that there is a difference in the emissions profile between the production and processing segments and the transmission and storage segment.¹⁸⁷

With regard to the last comment, the EPA agrees that the CAA does not preclude the EPA from regulating sources in the production, processing, and transmission and storage segments of the oil and gas industry as a single source category, or to regulate sources in the transmission and storage segment of the industry separately. However, in order to regulate sources in the transmission and storage segment, the proper process needs to be followed to list the transmission and storage source category or to expand the Crude Oil and Natural Gas Production source category to include natural gas transmission and storage. As discussed in sections IV.A of the 2019 proposal (84 FR 50244-50258)) and above in this section, the EPA has determined that the initial source category did not include natural gas transmission and storage and that the EPA has not taken the proper steps to list the category.

Comment: Commenter [2134-Joint Environmental] asserts that the differences on which the proposal relies¹⁸⁸ to posit that the segments are sufficiently unrelated are not only minor from a numerical standpoint but are entirely unrelated to the Agency's reasons for regulating or to the NSPS itself. The commenter notes that the proposal states that, while gas in the production segment consists of approximately 83-88 percent methane, four percent VOC, and less than one percent HAP, gas in the transmission segment consists of approximately 93 percent methane, 1 percent VOC, and less than 0.01 percent HAP. The commenter states that this assertion is both misleading factually and irrelevant legally.¹⁸⁹ The commenter asserts that the EPA considered and rejected these very arguments when it adopted the 2016 Rule. The commenter asserts that the proposal entirely fails to recognize this past finding, let alone to explain why differences that it previously found insufficient to merit separate treatment across segments can now lawfully

¹⁸⁷ Memorandum. Analysis of Average Methane Concentrations in the Oil and Gas Industry Using Data Reported Under 40 CFR Part 98 Subpart W. April 9, 2020. Included in Docket ID No. EPA-HQ-OAR-2017-0757.

¹⁸⁸ 84 Fed. Reg. at 50,257.

¹⁸⁹ (It is worth noting that the electric generating unit source also encompasses a product with even more divergent compositions—coal and gas, and even differences among coal—that likewise result in different pollutant emissions.

Attachment 2

EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018 (Apr. 2020) (excerpts)



Inventory of U.S. Greenhouse Gas Emissions and Sinks

1990-2018

flaring. Overall, production segment CO₂ emissions increased by 58 percent from 2017 levels primarily due to an increase in associated gas flaring in the Permian and Williston basins. Production emissions account for 83 percent of the total N₂O emissions from petroleum systems in 2018. The principal sources of N₂O emissions are oil tanks with flares, miscellaneous production flaring, and associated gas flaring. Since 1990, N₂O emissions from production have increased by a factor of 6.9; and since 2017, N₂O emissions from production have increased by a factor of 2.8, due primarily to increases in N₂O from oil tanks with flares and miscellaneous production flaring.

Crude Oil Transportation. Emissions from crude oil transportation account for a very small percentage of the total emissions (including leaks, vents, and flaring) from petroleum systems and have little impact on the overall emissions. Crude oil transportation activities account for less than 1 percent of total CH₄ emissions from petroleum systems. Emissions from tanks, marine loading, and truck loading operations account for 75 percent of CH₄ emissions from crude oil transportation. Since 1990, CH₄ emissions from transportation have increased by 29 percent. In 2018, CH₄ emissions from transportation increased by 10 percent from 2017 levels. Crude oil transportation activities account for less than 0.01 percent of total CO₂ emissions from petroleum systems. Emissions from tanks, marine loading, and truck loading operations account for 75 percent of CO₂ emissions from crude oil transportation.

Crude Oil Refining. Crude oil refining processes and systems account for 2 percent of total fugitive (including leaks, vents, and flaring) CH₄ emissions from petroleum systems. This low share is because most of the CH₄ in crude oil is removed or escapes before the crude oil is delivered to the refineries. There is an insignificant amount of CH₄ in all refined products. Within refineries, flaring accounts for 38 percent of the CH₄ emissions, while delayed cokers, uncontrolled blowdowns, and process vents account for 18, 17, and 9 percent, respectively. Fugitive CH₄ emissions from refining of crude oil have increased by 14 percent since 1990, and decreased 7 percent from 2017; however, like the transportation subcategory, this increase has had little effect on the overall emissions of CH₄ from petroleum systems. Crude oil refining processes and systems account for 10 percent of total fugitive (including leaks, vents, and flaring) CO₂ emissions from petroleum systems. Of the total fugitive CO₂ emissions, almost all (about 98 percent) of it comes from flaring.⁷⁶ Refinery fugitive CO₂ emissions increased by 14 percent from 1990 to 2018 and increased by less than 1 percent from the 2017 levels. Flaring occurring at crude oil refining processes and systems accounts for 15 percent of total fugitive N₂O emissions from petroleum systems. Refinery fugitive N₂O emissions increased by 16 percent from 1990 to 2018 and decreased by 2 percent from 2017 levels.

Table 3-37: CH₄ Emissions from Petroleum Systems (MMT CO₂ Eq.)

Activity	1990	2005	2014	2015	2016	2017	2018
Exploration^a	3.0	4.5	5.1	2.1	0.5	0.3	0.4
Production (Total)	42.4	33.4	37.5	37.4	37.5	37.3	34.9
Pneumatic Controllers	19.3	17.6	19.6	19.7	20.6	21.3	18.4
Offshore Production	9.3	6.5	5.7	5.5	5.1	5.1	5.1
Equipment Leaks ^b	2.2	2.2	2.7	2.7	2.6	2.6	2.5
Gas Engines	2.1	1.7	2.3	2.3	2.2	2.2	2.3
Chemical Injection Pumps	1.2	1.7	2.2	2.2	2.1	2.1	2.0
Tanks	5.4	1.5	1.6	1.7	2.5	1.5	1.4
Other Sources	2.6	2.1	3.3	3.3	2.3	2.6	3.2
Crude Oil Transportation	0.2	0.1	0.2	0.2	0.2	0.2	0.2
Refining	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Total	46.1	38.8	43.5	40.5	39.0	38.7	36.2

Note: Totals may not sum due to independent rounding.

^a Exploration includes well drilling, testing, and completions.

^b Includes leak emissions from wellheads, separators, heaters/treaters, and headers.

⁷⁶ Petroleum Systems includes fugitive emissions f(leaks, venting, and flaring). In many industries, including petroleum refineries, the largest source of onsite CO₂ emissions is often fossil fuel combustion, which is covered in section 3.1 of this chapter.

venting) and equipment leaks decreased; and increased 6 percent from 2017 to 2018 due to increased emissions from gas engines and blowdowns/venting. Carbon dioxide emissions from processing decreased by 14 percent from 1990 to 2018, due to a decrease in AGR emissions, and increased 7 percent from 2017 to 2018 due to increased emissions from flaring. Nitrous oxide emissions increased 29 percent from 2017 to 2018.

Transmission and Storage. Natural gas transmission involves high pressure, large diameter pipelines that transport gas long distances from field production and processing areas to distribution systems or large volume customers such as power plants or chemical plants. Compressor station facilities are used to move the gas throughout the U.S. transmission system. Leak CH₄ emissions from these compressor stations and venting from pneumatic controllers account for most of the emissions from this stage. Uncombusted compressor engine exhaust and pipeline venting are also sources of CH₄ emissions from transmission. Natural gas is also injected and stored in underground formations, or liquefied and stored in above ground tanks, during periods of low demand (e.g., summer), and withdrawn, processed, and distributed during periods of high demand (e.g., winter). Leak and venting emissions from compressors are the primary contributors to CH₄ emissions from storage. Emissions from liquified natural gas (LNG) stations and terminals are also calculated under the transmission and storage segment. Methane emissions from the transmission and storage segment account for approximately 24 percent of emissions from natural gas systems, while CO₂ emissions from transmission and storage account for 1 percent of the CO₂ emissions from natural gas systems. CH₄ emissions from this source decreased by 41 percent from 1990 to 2018 due to reduced compressor station emissions (including emissions from compressors and leaks), and increased 5 percent from 2017 to 2018 due to increased emissions from transmission compressor exhaust and increased emissions from reciprocating transmission compressors. CO₂ emissions from transmission and storage have increased by a factor of 2.7 from 1990 to 2018, due to increased emissions from LNG export terminals, and decreased by less than 1 percent from 2017 to 2018. The quantity of LNG exported from the U.S. increased by a factor of 21 from 1990 to 2018, and by 53 percent from 2017 to 2018. LNG emissions are about 1 percent of CH₄ and 61 percent of CO₂ emissions from transmission and storage in year 2018. Nitrous oxide emissions from transmission and storage decreased by 24 percent from 1990 to 2018 and decreased 58 percent from 2017 to 2018.

Distribution. Distribution pipelines take the high-pressure gas from the transmission system at “city gate” stations, reduce the pressure and distribute the gas through primarily underground mains and service lines to individual end users. There were 1,305,781 miles of distribution mains in 2018, an increase of nearly 361,624 miles since 1990 (PHMSA 2019). Distribution system emissions, which account for 8 percent of CH₄ emissions from natural gas systems and less than 1 percent of CO₂ emissions, resulting mainly from leak emissions from pipelines and stations. An increased use of plastic piping, which has lower emissions than other pipe materials, has reduced both CH₄ and CO₂ emissions from this stage, as have station upgrades at metering and regulating (M&R) stations. Distribution system CH₄ emissions in 2018 were 73 percent lower than 1990 levels and less than 1 percent lower than 2017 emissions. Distribution system CO₂ emissions in 2018 were 73 percent lower than 1990 levels and less than 1 percent lower than 2017 emissions. Annual CO₂ emission from this segment are less than 0.1 MMT CO₂ Eq. across the time series.

Total CH₄ emissions for the five major stages of natural gas systems are shown in MMT CO₂ Eq. (Table 3-57) and kt (Table 3-58). Most emission estimates are calculated using a net emission approach. However, a few sources are still calculated with a potential emission approach. Reductions data are applied to those sources that use a potential emissions approach; in recent years 6.8 MMT CO₂ Eq. CH₄ are subtracted from production segment emissions and 6.7 MMT CO₂ Eq. CH₄ are subtracted from the transmission and storage segment to calculate net emissions. More disaggregated information on potential emissions, net emissions, and reductions data are available in Annex 3.6. See Methodology for Estimating CH₄ and CO₂ Emissions from Natural Gas Systems.

Table 3-57: CH₄ Emissions from Natural Gas Systems (MMT CO₂ Eq.)^a

Stage	1990	2005	2014	2015	2016	2017	2018
Exploration ^b	4.0	10.3	1.0	1.0	0.7	1.2	1.1
Production	57.2	76.9	84.6	83.7	81.8	82.3	80.9
Onshore Production	34.9	51.4	49.2	46.9	45.1	45.5	45.3
Gathering and Boosting ^c	18.2	23.7	34.6	36.1	35.9	36.1	34.8

Offshore Production	4.1	1.8	0.8	0.6	0.8	0.7	0.8
Processing	21.3	11.6	11.0	11.0	11.2	11.5	12.2
Transmission and Storage	57.2	36.1	32.3	34.1	30.1	32.3	33.9
Distribution	43.5	23.3	12.2	12.0	12.0	11.9	11.8
Total	183.3	158.1	141.1	141.9	135.8	139.3	140.0

Note: Totals may not sum due to independent rounding.

^a These values represent CH₄ emitted to the atmosphere. CH₄ that is captured, flared, or otherwise controlled (and not emitted to the atmosphere) has been calculated and removed from emission totals.

^b Exploration includes well drilling, testing, and completions.

^c Gathering and boosting includes gathering and boosting station routine vented and leak sources, gathering pipeline leaks and blowdowns, and gathering and boosting station episodic events.

Table 3-58: CH₄ Emissions from Natural Gas Systems (kt)^a

Stage	1990	2005	2014	2015	2016	2017	2018
Exploration^b	162	411	39	41	27	49	44
Production	2,289	3,076	3,385	3,347	3,273	3,291	3,238
Onshore Production	1,396	2,057	1,968	1,877	1,805	1,820	1,814
Gathering and Boosting ^c	729	946	1,386	1,445	1,435	1,443	1,391
Offshore Production	165	73	31	24	33	28	33
Processing	853	463	440	440	448	461	488
Transmission and Storage	2,228	1,442	1,292	1,365	1,205	1,294	1,355
Distribution	1,741	932	487	481	480	476	473
Total	7,332	6,324	5,643	5,674	5,433	5,570	5,598

Note: Totals may not sum due to independent rounding.

^a These values represent CH₄ emitted to the atmosphere. CH₄ that is captured, flared, or otherwise controlled (and not emitted to the atmosphere) has been calculated and removed from emission totals.

^b Exploration includes well drilling, testing, and completions.

^c Gathering and boosting includes gathering and boosting station routine vented and leak sources, gathering pipeline leaks and blowdowns, and gathering and boosting station episodic events.

Table 3-59: Non-combustion CO₂ Emissions from Natural Gas Systems (MMT)

Stage	1990	2005	2014	2015	2016	2017	2018
Exploration	0.4	1.6	0.8	0.3	0.2	0.5	0.4
Production	3.2	4.5	7.5	7.7	7.4	6.5	9.6
Processing	28.3	18.9	21.1	21.1	21.9	22.9	24.5
Transmission and Storage	0.2	0.2	0.2	0.2	0.3	0.5	0.5
Distribution	0.1	+	+	+	+	+	+
Total	32.2	25.3	29.6	29.3	29.9	30.4	35.0

Note: Totals may not sum due to independent rounding.

+ Does not exceed 0.05 MMT CO₂ Eq.

Table 3-60: Non-combustion CO₂ Emissions from Natural Gas Systems (kt)

Stage	1990	2005	2014	2015	2016	2017	2018
Exploration	408	1,648	843	282	190	456	410
Production	3,197	4,548	7,464	7,740	7,450	6,505	9,591
Processing	28,338	18,893	21,075	21,075	21,908	22,896	24,465
Transmission and Storage	180	174	223	223	300	493	491
Distribution	51	27	14	14	14	14	14
Total	32,174	25,291	29,620	29,334	29,862	30,365	34,972

Note: Totals may not sum due to independent rounding.

Attachment 3

EPA, **Regulatory Impact Analysis** for the Review and Reconsideration of the *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources*, EPA-HQ-OAR-2017-0757-2716 (Aug. 2020) (excerpts)



Regulatory Impact Analysis for the Review and Reconsideration of the Oil and Natural Gas Sector Emission Standards for New, Reconstructed, and Modified Sources

EPA-452/R-20-004
August 2020

Regulatory Impact Analysis for
the Review and Reconsideration of the Oil and Natural Gas Sector Emission Standards for New,
Reconstructed, and Modified Sources

U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Health and Environmental Impacts Division
Research Triangle Park, NC

Table 2-1 Projected Impacts of the 2016 NSPS OOOOa Transmission and Storage Requirements: 2016 NSPS RIA and Updated Baseline Comparison¹

	2016 NSPS RIA		Updated Baseline	
	2021 ²	2025	2021	2025
Counts of NSPS-Affected Sources in Transmission and Storage	970	1,500	3,000	4,600
Methane Emission Reductions (short tons)	12,000	20,000	27,000	43,000
VOC Emission Reductions (tons)	340	540	760	1,200
Total Annualized Compliance cost, without Product Recovery (7%, millions, 2016\$)³	\$3.7	\$5.8	\$6.0	\$9.5
Total Annualized Compliance cost, with Product Recovery (7%, millions, 2016\$)³	\$1.1	\$1.8	\$2.9	\$3.9

¹ The emission reductions presented here are the emission reductions assuming the affected sources were not performing compliance activities prior to the 2016 NSPS OOOOa.

² While the 2016 NSPS RIA only summarized results for 2020 and 2025, we used the same underlying data described in the 2016 NSPS TSD to estimate impacts for 2021.

³ Excluding compliance cost of professional engineer certification, as well as other provisions in the 2016 NSPS OOOOa unrelated to fugitive emissions monitoring requirements.

2.1.2 Rescinded Regulatory Requirements

The projected compliance cost reductions and forgone emission reductions from rescinding the NSPS requirements for transmission and storage sources are equal to the cost and emissions impacts that would have resulted from keeping the 2016 requirements in place after accounting for the updates described in the preceding section. The universe of affected sources includes all sources in the transmission and storage segment that would be considered new or modified under the oil and natural gas NSPS and would be complying with the rule in absence of this action.

For example, compressor stations in the transmission sector that become NSPS-affected sources in 2016 are also affected by this action because they are expected to cease NSPS-required activities related to the fugitive emissions monitoring and repair requirements. However, compressor stations in the gathering and boosting sector are not affected by this action because they are in the production and processing segment, which is still required to comply with quarterly fugitive emissions monitoring and repair requirements. Table 2-2 summarizes the sources affected by this action and their respective regulatory requirements in the baseline.

We estimate that there are no affected centrifugal compressors and storage vessels in the transmission and storage segment, so we do not anticipate any regulatory impacts associated with

the Policy Review on these sources. Similarly, we do not currently have the necessary data to estimate the effects of the Policy Review on compressor stations on the Alaska North Slope.

Table 2-2 Emissions Sources and Baseline Requirements in the Transmission and Storage Segment

Emissions Point and Control	Requirements in the Baseline
Fugitive Emissions - Planning, Monitoring and Maintenance	
Compressor Stations	Quarterly monitoring
Compressor Stations on Alaska North Slope ¹	Annual monitoring
Pneumatic Controllers	Replace high-bleed with low-bleed
Reciprocating Compressors	Replace rod packing every 26,000 hours ²
Centrifugal Compressors³	Route to control
Storage Vessels³	Storage vessels with VOC emissions of 6 tons a year or more must reduce VOC emissions by at least 95 percent

¹ We do not currently have data to estimate the effects of the Policy Review on compressor stations on the Alaska North Slope.

² Operators have a choice to replace rod packings either every 36 months or 26,000 hours. As in the 2016 NSPS TSD, we assume compliance with the latter, which suggests replacement every 3.8 years for transmission sources and 4.4 years for storage sources based on operating data.

³ We currently estimate that there are no affected centrifugal compressors or storage vessels in the transmission and storage segment.

2.1.3 Policy Review: Summary of Key Results

A summary of the key results is shown below. All estimates are in 2016 dollars. Also, all compliance costs, emissions changes, and benefits are estimated relative to a baseline without the impacts of the Policy Review and Technical Reconsideration. We estimate that the Policy Review will potentially affect approximately 38 firms.¹¹

- **Emissions Analysis:** The Policy Review is projected to forgo methane emission reductions of 22,000 short tons in 2021 and 58,000 short tons in 2030 and a total of 400,000 short tons from 2021 to 2030. Forgone VOC emission reductions are projected to be 610 short tons in 2021 and 1,600 short tons in 2030 and a total of 11,000 short tons from 2021 to 2030. Forgone HAP emissions are projected to be 18 short tons in 2021 and 48 short tons in 2030 and a total of 330 short tons from 2021 to 2030.

¹¹ We estimate the number of firms potentially affected firms using information in the Information Collection Request (ICR) Supporting Statement associated with this rulemaking. Before promulgating the Policy Review, the EPA estimates that up to 575 firms would be subject to NSPS OOOOa during the 3-year period covered by the ICR (Table 1d of the Supporting Statement). We then estimate that up to 537 respondents per year will be subject to NSPS OOOOa during the 3-year period covered by the ICR (Section 6(d) of the Supporting Statement). As a result, we estimate the incremental number of firms potentially affected by the Policy Review to be the difference between 575 and 537, or 38 firms.

The projected cost and emission impacts assume implementation of a leak monitoring program based on the use of optical gas imaging (OGI) leak detection combined with leak correction. The monitoring and repair frequency under the baseline is quarterly for transmission and storage compressor stations.¹³ This chapter presents estimates of the impacts of removing the fugitive emission requirements for compressor stations in the transmission and storage segment.

Pneumatic Controllers: Pneumatic controllers are automated instruments used for maintaining process conditions such as liquid level, pressure, pressure differential, and temperature. In many situations across all segments of the oil and natural gas industry, pneumatic controllers make use of the available high-pressure natural gas to operate or control a valve. In these “gas-driven” pneumatic controllers, natural gas may be released with every valve movement and/or continuously from the valve control pilot. Not all pneumatic controllers are gas-driven. These “non-gas-driven” pneumatic controllers use sources of power other than pressurized natural gas. Examples include solar, electric, and instrument air. At oil and gas locations with electrical service, non-gas-driven controllers are typically used. Continuous bleed pneumatic controllers can be classified into two types based on their emissions rates: (1) high-bleed controllers and (2) low-bleed controllers. This chapter presents estimates of the impact of not installing low-bleed instead of high-bleed controllers to comply with the bleed limit requirement established in the 2016 NSPS for the transmission and storage segment.

Reciprocating and Centrifugal Compressors: Compressors are mechanical devices that increase the pressure of natural gas and allow the natural gas to be transported from the production site, through the supply chain, and to the consumer. The types of compressors that are used by the oil and gas industry as prime movers are reciprocating and centrifugal compressors. Centrifugal compressors use either wet or dry seals.

Emissions from compressors occur when natural gas leaks around moving parts in the compressor. In a reciprocating compressor, emissions occur when natural gas leaks around the piston rod when pressurized natural gas is in the cylinder. Over time, during operation of the compressor, the rod packing system becomes worn and needs to be replaced to prevent excessive

¹³ Monitoring frequency for compressor stations on the Alaska North Slope is annual, however, we do not estimate any compressor stations on the Alaska North Slope.

In this section, we present the costs and emissions impacts of the Policy Review from 2021 through 2030, under the assumption that 2021 is the first full year any changes from this action will be in effect. In addition, we provide detailed analysis for 2021 and 2030, which allows the reader to draw comparisons between the first year after the promulgation of the Policy Review and nine years after the impacts have accumulated.¹⁸ While it would be desirable to analyze impacts beyond 2030, the EPA has chosen not to, largely because of the limited information available to model long-term changes in practices and equipment use in the oil and natural gas industry. For example, the EPA has limited information on how practices, equipment, and emissions at new facilities change as they age or shut down. The current analysis assumes that newly established facilities remain in operation for the entire analysis period, which would be less realistic in a longer-term analysis. In addition, in a dynamic industry like oil and natural gas, technological progress is likely to change control methods to a greater extent over a longer time horizon, creating more uncertainty about impacts of the NSPS. For example, the current analysis does not include potential fugitive emissions controls employing remote sensing technologies currently under development.

2.2.3 Projection of Affected Facilities

To project the number of NSPS-affected facilities in transmission and storage, we first updated the number of NSPS-affected facilities for this analysis using average year-over-year increases in facility counts from the GHGI.¹⁹ We assumed that this average number of new affected sources

¹⁸ Any comparison of the 2016 NSPS RIA results to this analysis should be done with caution. The baseline of affected sources has been updated in this analysis, the years of analysis are different, and results in this RIA are presented in 2016 dollars, while the 2016 NSPS RIA presents results in 2012 dollars.

¹⁹ More detailed description of the calculations on new sources are provided in Appendix A. We applied the year-by-year rate of change derived from AEO2020 oil and natural gas drilling projections to the estimated number of wells in 2014 from DrillingInfo, regardless of well type, to project the estimated number of new well sites through 2030. In addition to well sites, the fugitive emissions requirements apply to gathering and boosting stations, transmission compressor stations, and storage compressor stations. The GHGI is used to estimate the count of newly affected compressor stations in each year. The GHGI uses a variety of data sources and studies to estimate equipment counts and emissions. Many equipment counts are based on the data reported under the GHGRP, scaled up to reflect the total population including both GHGRP-reporting and non-reporting oil and natural gas facilities. We estimated the number of new compressor stations, by type, by averaging the increases in the year-to-year changes in total national counts of equipment over the 10-year period from 2004 through 2014. Year-to-year increases were assumed to represent newly constructed facilities. Decreases in total counts were represented as zeros for that year, and average together with the annual increases. This approach results in the same number of new compressor stations in each projected year, regardless of increases or decreases in AEO projected drilling or production. The average year-to-year increase in compressor station counts are: 212 for gathering and boosting stations, 36 for transmission compressor stations, and 2 for storage compressor stations.

is constant from 2021 through 2030. While new source counts are likely to vary across years, we use this assumption as our best approximation of the average number of new sources in each year. See Appendix A for details on activity count projections.

Over time, facilities are constructed or modified in each year, and to the extent the facilities remain in operation in future years, the total number of facilities subject to the NSPS accumulates.²⁰ This analysis assumes that all projected new sources from 2015 through 2029 are still in operation in 2030. These sources include fugitive emissions sources at compressor stations, pneumatic controllers, and centrifugal and reciprocating compressors.²¹

Table 2-3 shows the projected number of NSPS-affected sources in each year. The estimates for affected sources are based upon projections of new sources alone, and do not include replacement or modification of existing sources. While some of these sources are unlikely to be modified, the impact estimates may be underestimated due to the focus on new sources. For compressor stations and reciprocating compressors, newly constructed affected facilities are estimated based on averaging year-to-year changes in activity data in the GHGI between 2004 and 2014. The approach averages the number of newly constructed units in all years. In years when the total count of equipment decreased, there were assumed to be no new units. For pneumatic controllers, we use the same averaging technique applied to 2011 to 2014 GHGI data, since the Inventory did not disaggregate pneumatic controllers into high and low bleed prior to 2011.²² We assume there are no new wet seal centrifugal compressors or affected storage vessels based on the assessment of the recent NSPS oil and natural gas compliance reports.²³

²⁰ This RIA provides more detailed information than previous oil and natural gas NSPS RIA analyses by including year-by-year results over the 2021 to 2030 analysis period.

²¹ Due to data limitations, we do not quantify any emissions or cost changes associated with new compressor stations on the Alaska North Slope.

²² Based on comment received on the proposal of this rule, we treat the installation of low-bleed pneumatic controllers from 2015 to 2020 as irreversible, meaning that they are not assumed to be replaced with high-bleed controllers as a result of this action until the end of their assumed equipment lifetime.

²³ For more information on the EPA's review of the oil and natural gas NSPS compliance reports, see the docketed memorandum titled: U.S. EPA. 2020. Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Background Technical Support Document for the Final Reconsideration of the New Source Performance Standards, 40 CFR Part 60, subpart OOOOa. Detailed reports are also available at: <https://www.foiaonline.gov/foiaonline/action/public/submissionDetails?trackingNumber=EPA-HQ-2018-001886&type=request>. Accessed April 26, 2020.

Table 2-3 Projected NSPS-Affected Sources in Transmission and Storage, 2021–2030²⁴

Year	Compressor Stations	Reciprocating Compressors	Centrifugal Compressors	Pneumatic Controllers ¹	Storage Vessels	Total
2021	270	530	0	310	0	1,100
2022	300	610	0	620	0	1,500
2023	340	680	0	920	0	2,000
2024	380	760	0	1,200	0	2,400
2025	420	840	0	1,500	0	2,800
2026	460	910	0	1,800	0	3,200
2027	490	990	0	2,200	0	3,600
2028	530	1,100	0	2,500	0	4,100
2029	570	1,100	0	2,800	0	4,500
2030	610	1,200	0	3,400	0	5,200

Note: Estimates may not sum due to independent rounding

¹ Counts in this column do not include pneumatic controllers installed between 2015 and 2020, which are affected sources under the NSPS but are not expected to change activities as a result of this action until the end of their assumed equipment lifetimes.

There have been multiple updates to the GHGI, and the data the EPA used to estimate the number of affected sources in the 2016 NSPS OOOOa was revised where appropriate. We updated the time period used to estimate the number of affected sources. The 2016 NSPS RIA used the ten-year period leading up to 2012, whereas this proposed action estimates the number of affected sources in the ten-year period leading up to 2014. The projected number of affected sources in the transmission and storage segment is sensitive to the ten-year period used for averaging. For example, the 2016 NSPS RIA estimated four new transmission compressor stations a year, and this analysis estimates 36 new transmission compressor stations per year. Though the difference in the count of affected sources as estimated for the 2016 NSPS RIA and the Policy Review is large, when compared to the total number of transmission compressor

²⁴ See Appendix A for more discussion. Nationwide impacts of certifications for closed vent system design and technical infeasibility of routing pneumatic pumps to an existing control device, rod-packing replacements at reciprocating compressors, route-to-control measures for wet-seal centrifugal compressors, and use of low-bleed pneumatic controllers were calculated by estimating the count of affected facilities installed in a typical year and then using that typical year estimate to estimate the number of new affected facilities for each of the years in the study period, 2021 through 2030. The basis for the counts of affected facilities that would require closed vent system and technical infeasibility certifications in a typical year was information from 2016 NSPS OOOOa compliance information for 2017. These represent the number of new affected facilities in a “typical year.” The GHGI was used to generate counts of reciprocating compressors and pneumatic controllers in transmission and storage only. The 2017 compliance report’s nationwide number of new affected facilities reported are: 663 pneumatic pumps, 180 reciprocating compressors, 0 centrifugal compressors, 697 storage vessels and 308 pneumatic controllers

stations nationally in 2014 (about 1,800), both are small: 0.2 percent and 2.0 percent, respectively.

In addition, since the 2016 NSPS RIA (which used 2015 GHGI data), the EPA updated the GHGI methodology used to develop station counts. This update had only a small impact on total national counts in the GHGI.²⁵ The update also resulted in minor changes in year-to-year trends, which have impacted the affected source projection. National estimates of other sources (*e.g.*, compressors and pneumatic controllers) in the transmission and storage segment rely on station counts as an input and are therefore impacted by this change as well. As annual national counts of transmission and storage stations are not directly available from any national-level data source, the EPA applies a methodology to estimate the total national counts of transmission and storage stations. This method was updated between the 2015 GHGI and the 2018 GHGI. For the 2016 NSPS, (using the previous GHGI methodology) transmission station counts were estimated by applying a factor of stations per mile of transmission pipeline to the total national transmission pipeline mileage.²⁶ Storage station counts were also developed using the previous GHGI methodology (applying a factor of stations per unit of gas consumption to total national gas consumption). In this RIA, transmission station counts are developed using updated data from the 2018 GHGI. In the 2018 GHGI, transmission stations are estimated based on scaled-up Greenhouse Gas Reporting Program (GHGRP) data. Storage stations are estimated by applying a factor to total national storage fields. These improvements to the methods were developed with stakeholder input.

2.2.4 Forgone Emissions Reductions

Table 2-4 summarizes the forgone emissions reductions associated with the Policy Review. The forgone emissions reductions are estimated by multiplying the source-level forgone emissions

²⁵ For example, the 2018 GHG Inventory estimate of station counts in 2013 is 5 percent lower for transmission stations and 12 percent lower for storage stations.

²⁶ The EPA used the GHGRP subpart W station count scaled by a factor of 3.52 to adjust for GHGRP coverage. In 2016 for example, 529 transmission stations reported to GHGRP, and the national GHG Inventory calculated 1,862 transmission stations as the national total.

reductions associated with each applicable control and facility type by the number of affected sources of that facility type.²⁷

Table 2-4 Projected Forgone Emissions Reductions from Policy Review, 2021–2030

Year	Emission Changes			
	Methane (short tons)	VOC (short tons)	HAP (short tons)	Methane (metric tons CO ₂ Eq.)
2021	22,000	610	18	500,000
2022	26,000	720	21	590,000
2023	30,000	830	25	680,000
2024	34,000	940	28	770,000
2025	38,000	1,000	31	860,000
2026	42,000	1,200	34	940,000
2027	46,000	1,300	37	1,000,000
2028	49,000	1,400	41	1,100,000
2029	53,000	1,500	44	1,200,000
2030	58,000	1,600	48	1,300,000
Total	400,000	11,000	330	9,000,000

Note: Estimates may not sum due to independent rounding.

2.2.5 Forgone Product Recovery

The projected compliance cost reductions presented below include the forgone revenue from the reductions in natural gas recovery projected under the Policy Review. Requirements for compressor stations, reciprocating compressors, and pneumatic controllers are assumed to increase the capture of methane and VOC emissions that would otherwise be vented to the atmosphere, and we assume that a large proportion of the averted methane emissions can be directed into natural gas production streams and sold.

Table 2-5 summarizes the decrease in natural gas recovery and the associated forgone revenue. The AEO2020 projects Henry Hub natural gas prices rising from \$2.49/MMBtu in 2021 to \$3.29/MMBtu in 2030 in 2019 dollars.²⁸ To be consistent with other financial estimates in the

²⁷ For more information on the EPA's review of the oil and natural gas NSPS compliance reports, see the docketed memorandum titled: U.S. EPA. 2020. Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Background Technical Support Document for the Final Reconsideration of the New Source Performance Standards, 40 CFR Part 60, subpart OOOOa. Detailed reports are also available at: <https://www.foiaonline.gov/foiaonline/action/public/submissionDetails?trackingNumber=EPA-HQ-2018-001886&type=request>. Accessed April 26, 2020.

²⁸ Available at: http://www.eia.gov/forecasts/aeo/tables_ref.cfm. Accessed April 26, 2020

RIA, we adjust the projected prices in AEO2020 from 2019 dollars to 2016 dollars using the GDP-Implicit Price Deflator. We also adjust prices for the wellhead using an EIA study that indicated that the Henry Hub price is, on average, about 11 percent higher than the wellhead price,²⁹ and therefore we use a conversion factor of 1.036 MMBtu equals 1 Mcf. Incorporating these adjustments, wellhead natural gas prices are assumed to rise from \$2.20/Mcf in 2021 to \$2.89/Mcf in 2030.

Table 2-5 Projected Decrease in Natural Gas Recovery for Policy Review, 2021–2030

Year	Decrease in Gas Recovery (Tcf)	Forgone Revenue (millions 2016\$)
2021	1.3	\$2.5
2022	1.5	\$3.0
2023	1.7	\$3.4
2024	2.0	\$4.0
2025	2.2	\$4.9
2026	2.4	\$5.8
2027	2.6	\$6.7
2028	2.9	\$7.5
2029	3.1	\$8.1
2030	3.4	\$8.7

Operators in the transmission and storage segment of the industry do not typically own the natural gas they transport; rather, they receive payment for the transportation service they provide. From a social perspective, however, the increased financial returns from natural gas recovery accrues to entities somewhere along the natural gas supply chain and should be accounted for in a national-level analysis. An economic argument can be made that, in the long run, no single entity bears the entire burden of compliance costs or fully appropriates the financial gain of the additional revenues associated with natural gas recovery. The change in economic surplus resulting from natural gas recovery is likely to be spread across different market participants. Therefore, the simplest and most transparent option for allocating these revenues would be to keep the compliance costs and revenues within a given source category and not make assumptions regarding the allocation of costs and revenues across agents.³⁰

²⁹ See:

https://www.researchgate.net/publication/265155970_US_Natural_Gas_Markets_Relationship_Between_Henry_Hub_Spot_Prices_and_US_Wellhead_Prices. Accessed 04/26/2020.

³⁰ As a sensitivity, we calculated forgone natural gas revenues using the Henry Hub price instead of the estimated wellhead price, as the former may better reflect the value of natural gas in the transmission and storage segment.

Attachment 4

Gretchen Watkins, President, Shell Oil Company, *Methane rollback puts U.S. on wrong track*, LinkedIn (Oct. 2, 2020)



Methane rollback puts U.S. on wrong track



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We need to talk about methane.

Right now, the Environmental Defense Fund and states like New Mexico, Pennsylvania, Colorado and others are fighting to protect the direct regulation of methane under the Clean Air Act. Shell supports them, and we support their efforts to allow for continued regulation while the courts

resolve the litigation.

Here's why this fight is important.

Methane's importance

America can't tackle climate change if it doesn't tackle leaks of methane – a greenhouse gas far more potent than carbon dioxide.

Methane is the primary component of natural gas, which is the cleanest-burning hydrocarbon. It's a fuel that can play a robust role in transitioning to a low-carbon economy while improving energy access around the world— but only if leaks are controlled. Our view is that any methane emissions across the industry hurt both the environment and our business.

Direct regulation of methane

The federal methane regulation informed Shell's own methane journey. We have a goal of maintaining a methane emissions intensity target of below 0.2% on all Shell operated assets around the world by 2025. The methane regulation informed our investments. We've complied with this rule for four years and found compliance reasonable. The rule works. In fact, we knocked on EPA's door early in the Trump Administration and asked them to write a rule like it for older oil and gas wells, called "existing sources" in the Clean Air Act.

Why regulatory rollbacks are harmful

Rolling back this rule would hurt Shell and our industry. It hurts the reputation of natural gas— period. And, as a result, deregulation may make some countries or companies reluctant to use natural gas. The EU may penalize LNG imports from a country that doesn't regulate methane. Some power companies may move away from natural gas. Hydrogen produced from natural gas may lose favor with some customers. Any loss of market hurts natural gas producers.

To Shell, a rollback makes long-term planning and investing more difficult because Congress or a future Administration will likely revisit direct regulation, but could do it in a different way. That may require different investments than the ones we've already made.

A rollback also makes it tough to plan our investments to mitigate leaks from older wells.

Before the rollback, we had an idea of what a future regulation on those wells might look like and could spend accordingly. Now we have no idea, so it's harder to make those investments. A rollback also makes it harder to do due diligence on future acquisitions.

What this means

Regardless of the outcome of this litigation, we'll continue to pursue a global methane intensity target as part of our global ambition to be a net-zero emissions energy business by 2050 or sooner.

We will also continue to be an advocate for sound policies and developing technologies that allow us to reduce emissions from our operations not only in America, but worldwide.

Published By



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We need to talk about methane. Right now, the [Environmental Defense Fund](#) and states like New Mexico, Pennsylvania, Colorado and others are fighting to protect the direct regulation of methane under the Clean Air Act. Shell supports them, and we support their efforts to allow for continued regulation while the courts resolve the litigation. Here's why this fight is important. [#naturalgas](#) [#emissions](#) [#methane](#) [#climate](#)

22 comments

Attachment 5

Ceres & Interfaith Center on Corporate Responsibility, Oil and gas methane emissions rollback statement (Oct. 2, 2020)



Oil and gas methane emissions rollback statement

In response to on-going litigation in the United States Court of Appeals for the District of Columbia Circuit, Ceres and the Interfaith Center on Corporate Responsibility (ICCR) wish to express their support for challenges to the Trump administration's rollback of the New Source Performance Standards (NSPS) regulating oil and gas methane emissions.

ICCR and Ceres believe that federal methane regulation of the oil and gas industry, for both new and existing sources, is critical to the long-term interests of our investor members' beneficiaries and to ensure the potential climate benefits of burning gas instead of coal.

In August 2019, a group of investors representing \$5.5 trillion in assets under management, coordinated by ICCR and Ceres, wrote to EPA¹ with serious concerns regarding its proposed rescission. We were then disappointed to see the Trump administration finalize its rollbacks of existing methane standards and indicate it will not regulate the existing oil and gas sector.

The rollback of the EPA's existing, strong, yet cost effective, regulatory standards will lead to policy uncertainty for industry, this year and for years to come. Ultimately, the removal of methane regulations deepens the threat from climate change, increasing economy-wide risks.

While some companies are demonstrating leadership on managing methane emissions, others remain largely inactive. The result is a fragmented market with mixed performance on emissions reductions. Methane rules are the most effective tool to ensure a level playing field and to protect both the industry and its investors.

¹ <https://www.iccr.org/investor-statement-need-continued-regulation-methane-oil-gas-industry>