



Institute for
Policy Integrity

NEW YORK UNIVERSITY SCHOOL OF LAW

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VIA ELECTRONIC SUBMISSION

Environmental Protection Agency

Attn: Ms. Amy Hambrick, Sector Policies and Programs Division (E143-05), Office of Air Quality Planning and Standards

Re: Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, 84 Fed. Reg. 50,244 (Proposed Sept. 24, 2019)

Docket ID: EPA-HQ-OAR-2017-0757

The Institute for Policy Integrity (“Policy Integrity”) at New York University School of Law¹ respectfully submits the following comments to the Environmental Protection Agency (“EPA” or the “agency”) regarding its proposed revisions to New Source Performance Standards (“NSPS”) for methane and volatile organic compound (“VOC”) emissions from the oil and gas sector (“Proposed Rule”). Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decision-making through advocacy and scholarship in the fields of administrative law, economics, and public policy.

Our comments focus on EPA’s flawed legal and economic justifications for the Proposed Rule. Specifically, we note the following:

- EPA does not provide a reasoned explanation for narrowing the scope of the Crude Oil and Natural Gas source category.
- EPA fails to consider the regulatory alternative of creating a new source category for the transmission and storage segment of the crude oil and natural gas industry.
- EPA’s proposed interpretation of Clean Air Act section 111(b) to require pollutant-specific significant contribution findings (“SCFs”) is neither statutorily required nor reasonable.
- EPA’s cost-benefit analysis for the Proposed Rule dramatically underestimates the health and environmental costs of forgone methane reductions and unreasonably fails to offer any estimate of the costs of forgone VOC reductions.
- EPA cannot reasonably interpret Section 111(d) to prohibit the regulation of methane emissions from existing sources.
- EPA does not adequately consider the Proposed Rule’s implications for emissions from existing sources in the Crude Oil and Natural Gas source category.

¹ This document does not purport to present New York University School of Law’s views, if any.

Background

EPA proposes to rescind or revise New Source Performance Standards (“NSPS”) issued in 2012 and 2016 for VOC and methane emissions from sources within the Crude Oil and Natural Gas source category.² In 2012, EPA established NSPS for VOC emissions from certain sources in the oil and natural gas sector (“2012 Rule”).³ Then, in 2016, EPA promulgated methane NSPS for the sources covered by the 2012 Rule, as well as both methane *and* VOC NSPS for additional sources in the oil and natural gas sector that were not included in the 2012 Rule (“2016 Rule”).⁴

Under its primary proposal, EPA would rescind both the methane and VOC NSPS for sources within the transmission and storage segment of the oil and natural gas sector.⁵ The primary proposal would also eliminate methane NSPS, but not VOC NSPS, for sources in the production and processing segments of the sector.⁶ Alternatively, EPA proposes to remove all methane NSPS applicable to oil and natural gas sources, but not to remove any sources from the source category.⁷ Additionally, EPA solicits comment on whether the agency should, in future rulemakings, interpret Clean Air Act (“CAA”) section 111 to require that EPA make a significant contribution finding for each new pollutant it regulates from an already listed source category.⁸

I. EPA fails to provide a reasoned explanation for narrowing the scope of the Crude Oil and Natural Gas source category

EPA argues that the 2012 and 2016 NSPS must be repealed for sources in the transmission and storage segment of the oil and gas industry because that segment is not part of the Crude Oil and Natural Gas source category,⁹ as established in the 1979 Priority Source Category List (“1979 Listing”).¹⁰ This argument is unavailing for two reasons. First, in the 2012 and 2016 rules, EPA reasonably concluded that the 1979 Listing *was* broad enough to encompass the transmission and storage segment.¹¹ Second, even if the original listing was not broad enough to encompass that

² EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, 84 Fed. Reg. 50,244 (proposed Sept. 24, 2019) (to be codified at 40 C.F.R. pt. 60) [hereinafter Proposed Rule].

³ EPA, Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants, 77 Fed. Reg. 49,490, 49,493 (Aug. 16, 2012) [hereinafter 2012 Final Rule].

⁴ See EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 81 Fed. Reg. 35,824, 35,825 (June 3, 2016) [hereinafter 2016 Final Rule].

⁵ See Proposed Rule, 84 Fed. Reg. at 50,258.

⁶ See *id.* at 50,254.

⁷ See *id.* at 50,244.

⁸ See *id.* at 50,261.

⁹ See *id.* at 50,255.

¹⁰ EPA, Priority List and Additional Categories, 44 Fed. Reg. 49,222 (Aug. 21, 1979) [hereinafter 1979 Listing]. The 1979 Priority List identified source categories and ranked the priority by which EPA should issue New Source Performance Standards.

¹¹ See 2012 Final Rule, 77 Fed. Reg. at 49,493, 49,514; 2016 Final Rule, 81 Fed. Reg. at 35,832-33; see also EPA, Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Review, 76 Fed. Reg. 52,738, 52,745 (proposed Aug. 23, 2011) [hereinafter 2011 Proposed Rule] (“We . . . believe that the currently listed Oil and Natural Gas source category covers all operations in this industry (i.e., production, processing, transmission, storage and distribution).”).

segment, EPA had statutory discretion to amend the original listing, which it properly exercised in the 2016 Rule.

A. *EPA reasonably concluded that the 1979 Crude Oil and Natural Gas source category listing was sufficiently broad to include the transmission and storage segment*

In the Proposed Rule, EPA argues that the 2012 and 2016 rules improperly interpreted the 1979 Listing as encompassing the sources in the transmission and storage segment of the oil and gas industry, because the 1979 Listing “gave no indication that a source category [that is] ostensibly focused on ‘production’ also included those sources associated with post-production operations such as transmission and storage.”¹² But the 2012 and 2016 rules’ conclusion that the 1979 Listing was sufficiently expansive to encompass the transmission and storage segment was entirely reasonable given that (1) the category’s name was deliberately expansive, and (2) EPA in 1979 considered but ultimately declined to create a separate category for certain sources in the transmission and storage segment.

First, the name of the source category in the final 1979 Listing was deliberately expansive. While a draft list in a 1978 technical document (“1978 TD”) included the source category as “Crude Oil and Natural Gas Production Plants,”¹³ the 1979 Listing named the final source category as “Crude Oil and Natural Gas Production.”¹⁴ This change was consistent with EPA’s stated intent to create category listings that encompassed entire industries rather than mere facility types. For example, when revising the final listings for the non-metallic mineral processing industry, EPA aggregated nine subcategories because EPA planned “to study [the] industry at one time, since many of the processes and control techniques are similar.”¹⁵ EPA’s choice to drop the word “plant” from the Oil and Natural Gas Production source category similarly suggests that EPA envisioned an industry-wide source category that expanded beyond any particular set of facilities.

Second, the omission in the 1979 Listing of a source in the transmission and storage segment that had been included in the 1978 TD suggests that this source was incorporated into the Crude Oil and Natural Gas Production source category. EPA studied Stationary Pipeline Compressor Engines, which are found in the transmission and storage segment, as a potential independent source category in the 1978 TD.¹⁶ However, this source was not listed as a major or minor source in the 1979 Listing.¹⁷

In the Proposed Rule, EPA agrees that the absence of the Stationary Pipeline Compressor Engines category from the 1979 Listing indicates that the source was aggregated and included

¹² Proposed Rule, 84 Fed. Reg. at 50,255.

¹³ EPA, PRIORITIES FOR NSPS UNDER CLEAN AIR ACT AMENDMENTS OF 1977, EPA-450/3-78-019, at 34 (1978), available at <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=91010FMP.PDF> [hereinafter 1978 TD].

¹⁴ 1979 Listing, 44 Fed. Reg. at 49,226.

¹⁵ *Id.* at 49,223.

¹⁶ See 1978 TD at 33.

¹⁷ See 1979 Listing, 44 Fed. Reg. at 49,222-26.

within a different listing,¹⁸ but the agency argues that the source was included in the Stationary Internal Combustion Engines listing.¹⁹ However, EPA supports this proposition only by citing to a 2008 rule, which was promulgated three decades after the initial listing and does not expressly include stationary pipeline compressor engines within the Stationary Internal Combustion Engines source category.²⁰

B. *Alternatively, EPA provided a reasoned explanation in 2016 for revising the Crude Oil and Natural Gas source category to include the transmission and storage segment*

Even if the 1979 Listing could not reasonably be read as already encompassing the transmission and storage segment, EPA has broad discretion under Section 111 to expand source category listings. In the 2016 Rule, EPA made the findings necessary to support such an expansion.

In the 2016 Rule, EPA concluded that it was reasonable to include the transmission and storage segment within the Natural Gas and Crude Oil Production source category. The 2016 Rule described the “operations at production, processing, transmission and storage facilities” as a “sequence of functions that are interrelated and necessary for getting the recovered gas ready for distribution.”²¹ EPA emphasized how growth in one segment leads to growth in subsequent segments and how increases in natural gas production can require additional storage.²² Finally, EPA identified technologies in the transmission and storage segment, including storage vessels, pneumatic pumps, and compressors, that are used throughout the industry.²³

Despite the overlap in technology, EPA now argues that the transmission and storage segment cannot be included in the Crude Oil and Natural Gas source category, because the gas composition and operations in that segment are too different from those in the production and processing segments.²⁴ But these differences are of no statutory significance—that is, nothing in the text of Section 111 precludes EPA from regulating sources in the production, processing, and 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.

EPA further argues that the 2016 Rule was not a permissible expansion of the Crude Oil and Natural Gas source category because EPA did not, in that rulemaking, make an independent

¹⁸ See Proposed Rule, 84 Fed. Reg. at 50,256 (“EPA was distinguishing between oil and natural gas production plants and natural gas processing on the one hand, and stationary pipeline compressor engines on the other, and . . . it intended to promulgate separate standards for HC and SO₂ emissions from those two source categories.”).

¹⁹ See *id.* at 50,256 n.46.

²⁰ See EPA, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 73 Fed. Reg. 3,568, 3,569 (Jan. 18, 2008). EPA cites to a page stating that “[c]ategories and entities potentially regulated by this action” include “[a]ny manufacturer that produces or any industry using a stationary internal combustion engine as defined in the final rule.” *Id.* at 3,568-69. The preamble contains a list of “[e]xamples of regulated entities” that includes “[n]atural gas transmission.” *Id.* at 3,569. However, the preamble indicates that readers should “examine the applicability criteria of the final rule” to determine whether a specific engine is regulated by the rule and contains no explicit reference to stationary pipeline compressor engines. *Id.*

²¹ 2016 Final Rule, 81 Fed. Reg. at 35,832.

²² See *id.*

²³ See *id.*

²⁴ See Proposed Rule, 84 Fed. Reg. at 50,258.

Significant Contribution Finding (“SCF”) for the transmission and storage segment, considered separately from the rest of the Crude Oil and Natural Gas source category.²⁵ But nothing in the text of Section 111 requires such a finding. Section 111(b)(1)(A) requires that a source category be listed if “in [the EPA Administrator’s] judgment it causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.”²⁶ It further grants the Administrator authority to “from time to time . . . revise” the listed categories.²⁷ Nothing in the statutory text or relevant case law suggests that EPA must, before revising a source category in a way that expands its scope, find that the newly regulated portion of the category, considered alone, “contributes significantly” to air pollution that may reasonably be anticipated to endanger public health and welfare. Put another way, nothing in the statute indicates that Congress intended for it to be any more difficult for EPA to *add* sources to a category than to include those sources in the category in the first instance. Thus, EPA’s obligation when revising a source category is only to conclude that the entire category, as revised, can still be deemed to contribute significantly to pollution that endangers public health or welfare. EPA reasonably reached such a conclusion in the 2016 Rule.²⁸

II. EPA fails to consider the regulatory alternative of creating an independent source category for the transmission and storage segment

Executive Order 12,866 requires agencies to “assess all costs and benefits of available regulatory alternatives” and then select the alternative that “maximize[s] net benefits.”²⁹ However, EPA failed to consider the reasonable alternative of creating a new source category for the transmission and storage segment of the oil and gas sector. Because EPA “fail[ed] to consider . . . alternatives,” much less “explain why such alternatives were not chosen,” finalizing the Proposed Rule would be arbitrary and capricious.³⁰

EPA seeks to rescind portions of the 2012 and 2016 rules on the theory that sources in the transmission and storage segment were not covered by the 1979 Listing for the Crude Oil and Natural Gas source category and that EPA did not and could not properly expand the 1979 Listing to encompass such sources. As discussed in the prior section, neither of these arguments is valid. Even if they were, however, the appropriate response would not be to leave sources in the transmission and storage segment entirely unregulated, as EPA proposes, but instead to create an independent source category for the transmission and storage segment and repromulgate the 2012 and 2016 NSPS under that new source category.

Using information from the 2012 and 2016 rules, along with analysis from the Proposed Rule, EPA could make an SCF for the transmission and storage segment to create an independent

²⁵ *See id.* at 50,257.

²⁶ Clean Air Act § 111(b)(1)(A), 42 U.S.C. § 7411(b)(1)(A).

²⁷ *Id.*

²⁸ *See* 2016 Final Rule, 81 Fed. Reg. at 35,833 (“[T]here is ample evidence that this source category as a whole (oil and natural gas production, processing, transmission, and storage) contributes significantly to air pollution that may reasonably be anticipated to endanger public health and welfare.”).

²⁹ Exec. Order No. 12,866 § 1(a), 58 Fed. Reg. 51,735, 51,735 (Oct. 4, 1993).

³⁰ *Int’l Ladies’ Garment Workers’ Union v. Donovan*, 722 F.2d 795, 815 (D.C. Cir. 1983). *See also* *Motor Vehicle Mfr. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 51 (1983) (finding it unreasonable for NHTSA to not consider an air-bag only alternative when rescinding an airbag and automatic seatbelt regulation).

source category. The Proposed Rule estimates that removing NSPS from the transmission and storage segment will increase methane emissions by 370,000 short tons, VOC emissions by 10,000 tons, and hazardous air pollutants (“HAP”) emissions by 300 tons between 2019 and 2025.³¹ The health and welfare costs of the forgone methane reductions would, according to the 2016 Rule, be worth \$690 million for the reductions forgone in 2025 alone (using a 3-percent discount rate).³² Given the volume of emissions emitted by the segment and the magnitude of the associated health and environmental costs, it is entirely reasonable to conclude that the transmission and storage segment, considered alone, significantly contributes to pollution that endangers public health and welfare. EPA states in the Proposed Rule that emissions are lower in the transmission and storage segment than in other segments of the oil and gas sector,³³ but the fact that transmission and storage emissions are smaller in relative terms does not render them insignificant in absolute terms.

III. EPA’s proposed interpretation of Section 111(b) to require pollutant-specific SCFs is neither statutorily required nor reasonable

EPA requests comment on whether it should change its interpretation of Section 111 regarding what, if any, findings the agency must make before regulating additional pollutants from a source category already subject to NSPS.³⁴ EPA asks whether requiring a pollutant-specific SCF would be a reasonable interpretation of the statute.³⁵ Because EPA’s proposed interpretation is entirely unsupported by the statutory text, EPA could not reasonably adopt it.

The plain text of CAA does not require EPA to make a new SCF prior to issuing standards for a new pollutant from an already listed source category. Section 111(b)(1)(A) directs EPA to list a source category if it “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.”³⁶ Section 111(b)(1)(B) then instructs the agency to “establish[] Federal standards of performance for new sources within such category” and to periodically “review and, if appropriate, revise such standards.”³⁷ While Section 111(b)(1)(B) provides detailed instructions for how EPA should go about setting these performance standards, it gives absolutely no indication that EPA must make an SCF for each pollutant covered by the standards. Nor does it suggest that EPA must make such a finding if it revises the standards to include an additional pollutant. In other words, the trigger for establishing performance standards under Section 111 is a finding that the category significantly

³¹ See Proposed Rule, 84 Fed. Reg. at 50,278; EPA, REGULATORY IMPACT ANALYSIS FOR THE PROPOSED OIL AND NATURAL GAS SECTOR: EMISSION STANDARDS FOR NEW, RECONSTRUCTED, AND MODIFIED SOURCES REVIEW, at 1-9 (2019) [hereinafter PROPOSED RULE RIA].

³² See 2016 Final Rule, 81 Fed. Reg. at 35,827; EPA, REGULATORY IMPACT ANALYSIS OF THE FINAL OIL AND NATURAL GAS SECTOR: EMISSION STANDARDS FOR NEW, RECONSTRUCTED, AND MODIFIED SOURCES, at 4-1 (2016), available at https://www3.epa.gov/tneacas1/docs/ria/oilgas_ria_nsps_final_2016-05.pdf [hereinafter 2016 FINAL RULE RIA].

³³ See Proposed Rule, 84 Fed. Reg. at 50,258. EPA claims that VOC emissions are lower in the transmission and storage segment than in other segments.

³⁴ See *id.* at 50,262-63.

³⁵ See *id.*

³⁶ Clean Air Act § 111(b)(1)(A), 42 U.S.C. § 7411(b)(1)(A).

³⁷ § 7411(b)(1)(B).

contributes to *some* type of dangerous air pollution, not a series of findings that the category significantly contributes to *every* type of pollution addressed by the performance standards.

EPA cites legislative history that it claims supports a reading of Section 111(b) as requiring a pollutant-specific SCF.³⁸ But the cited documents are ambiguous at best,³⁹ and, in any event, while legislative history can explain an undefined term or reveal a drafting error, it cannot justify the enforcement of “a principle . . . that has no statutory reference point.”⁴⁰ Accordingly, EPA cannot reasonably read Section 111(b)(1)(B) to require a pollutant-specific SCF.

IV. EPA’s cost-benefit analysis for the Proposed Rule is seriously flawed

For the reasons discussed above, EPA cannot reasonably claim that it is legally *obligated* to repeal any of the NSPS from the 2012 and 2016 rules. As a result, finalizing the Proposed Rule would be a purely discretionary action. But repealing NSPS for the oil and natural gas sector would not be a reasonable exercise of the agency’s discretion, because, among other reasons, the repeal’s costs (in the form of health and environmental harms associated with forgone pollution reductions) outweigh its benefits (in the form of avoided compliance expenditures).

Indeed, EPA’s own cost-benefit analysis shows that the Proposed Rule is net costly with respect to reciprocating compressors and pneumatic controllers.⁴¹ Furthermore, the Proposed Rule as a whole would appear net costly were it not for serious errors and omissions in EPA’s calculations. Finalizing the Proposed Rule in reliance on that misleading analysis would be arbitrary and capricious.

Executive Order 12,866 requires agencies to assess the costs and benefits of any significant regulatory action.⁴² This assessment must be based “on the best reasonably obtainable scientific, technical, economic, and other information,” and should include quantifiable measures “to the fullest extent that [they] can be usefully estimated.”⁴³ Long-standing guidance on regulatory analysis from the Office of Management and Budget (“OMB”) similarly advises that “[s]ound quantitative estimates of benefits and costs, where feasible, are preferable to qualitative descriptions.”⁴⁴ Because some effects are “too difficult to quantify or monetize given current data and methods,” however, agencies must also “carry out a careful evaluation of non-quantified benefits and costs.”⁴⁵

³⁸ See Proposed Rule, 84 Fed. Reg. at 50,264-65.

³⁹ For example, the Conference Report from the 1977 CAA Amendments states that, pursuant to Section 111(b), the Administrator “could regulate any air pollutant from those sources, the emissions of which ‘in his judgment cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.’” H.R. Rep. No. 95-564, at 183 (1977). This summary can easily be read to suggest that EPA may regulate any air pollutant from a source category so long as the agency has already concluded that the category “cause[s] or contribute[s]” to *some* type of air pollution that endangers public health or welfare.

⁴⁰ Shannon v. United States, 512 U.S. 573, 583 (1994).

⁴¹ See PROPOSED RULE RIA, at 2-15 to 2-19.

⁴² See Exec. Order No. 12,866 § 6(a)(3)(B). EPA has concluded that the Proposed Rule is a significant regulatory action for the purposes of Executive Order 12,866. See Proposed Rule, 84 Fed. Reg. at 50,279.

⁴³ Exec. Order No. 12,866 §§ 1(a), (b)(7).

⁴⁴ OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, CIRCULAR A-4, at 26 (2003), *available at* <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf> [hereinafter CIRCULAR A-4].

⁴⁵ *Id.* at 26-27.

Separate from the requirements of Executive Order 12,866, courts have held that “when an agency decides to rely on a cost-benefit analysis as part of its rulemaking, a serious flaw undermining that analysis can render the rule unreasonable”⁴⁶ and sustain the regulation as arbitrary and capricious under the statutory requirements of the APA.⁴⁷ The Supreme Court has interpreted the APA to require agency decisions to be “based on consideration of the relevant factors,”⁴⁸ and costs have long been considered “a centrally relevant factor” in regulatory decision-making.⁴⁹ Such costs have been defined to comprise “more than the expense of complying with regulations[,] any disadvantage could be termed a cost,” and include “harms that regulation might do to human health or the environment.”⁵⁰

Here, EPA fails to adequately consider several significant costs of the Proposed Rule. First, EPA significantly underestimates the cost of forgone methane reductions by using what it calls a domestic estimate for the social cost of methane instead of a global estimate. Second, EPA unreasonably fails to monetize the health and environmental impacts of VOC emissions, even though it has presented such information in the past. Third, EPA fails to properly classify the Proposed Rule as an “economically significant” regulatory action and to conduct the detailed cost-benefit analysis required as a result of such designation.

A. EPA’s interim estimate of the social cost of methane is economically unsound

EPA significantly understates the cost of forgone methane reductions by excluding damage from climate impacts occurring outside U.S. borders. For further discussion of this issue, see Policy Integrity’s separate comments on the social cost of methane, filed jointly with several other organizations.⁵¹

B. EPA unreasonably fails to monetize the health and environmental impacts of VOC emission increases

As discussed above, Circular A-4 advises agencies to monetize negative effects on health and welfare “[t]o the extent possible.”⁵² Even when there is uncertainty about the magnitude of a regulatory effect, such uncertainty does not justify assigning no weight to that effect in the agency’s cost-benefit analysis.⁵³ In the Proposed Rule, however, EPA does just that with respect to the health and welfare impacts of VOC emission reductions projected to occur under the 2012

⁴⁶ Nat’l Ass’n of Home Builders v. EPA, 682 F.3d 1032, 1040 (D.C. Cir. 2012); *see also* Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983) (arbitrary and capricious standard requires agency to “examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made”) (internal quotation marks omitted).

⁴⁷ *See* Administrative Procedure Act § 706(2)(A), 5 U.S.C. § 706(2)(A) (2018).

⁴⁸ *State Farm*, 463 U.S. at 42.

⁴⁹ *Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015).

⁵⁰ *Id.*

⁵¹ Policy Integrity et al., *Flawed Monetization of Forgone Benefits in the Proposed Rule, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review* (Nov. 25, 2019).

⁵² CIRCULAR A-4, at 19.

⁵³ *See* Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin., 538 F.3d 1172, 1192, 1200 (9th Cir. 2008) (finding agency reasoning arbitrary and capricious where agency argued that benefits of carbon dioxide reductions were “too uncertain to support their explicit valuation and inclusion” in a regulatory cost-benefit analysis).

and 2016 rules but forgone under the Proposed Rule. While there may be “a range of values” for these forgone benefits, the value “is certainly not zero.”⁵⁴

In the Proposed Rule, EPA recognizes the existence of forgone benefits of VOC emission reductions and expects that VOC emissions resulting from the Proposed Rule “will degrade air quality and are likely to adversely affect health and welfare associated with exposure to ozone, PM_{2.5}, and HAP.”⁵⁵ However, EPA claims that the agency is “unable to quantify these effects at this time,” citing “difficulties in modeling” and lack of available data.⁵⁶ Consequently, EPA does not monetize the forgone benefits of VOC emission reductions. Instead, EPA provides a qualitative analysis of the effects of the anticipated increased VOC emissions as precursors to both ozone and PM_{2.5}.⁵⁷

But EPA *has* provided information on how to monetize the value of VOC reductions in its past regulations of the oil and gas sector. In the 2016 RIA, EPA stated that the VOC benefit-per-ton estimates were not appropriate for calculating that rule’s monetized benefits,⁵⁸ and EPA repeats this conclusion in the Proposed Rule’s RIA.⁵⁹ However, the RIA for the 2016 Rule still presented a range of epidemiology studies estimating the value of reducing a ton of VOC in 2012 dollars: \$300 to \$7,500.⁶⁰ EPA also provided an illustrative breakeven analysis to determine that a proposed regulatory option for the 2016 Rule would be cost-benefit justified if the agency valued VOC emission reductions at \$460 per ton in 2020 and \$160 per ton in 2025, well within the range of the studies presented.⁶¹ EPA provides none of this information in the present rulemaking. In the Proposed Rule’s RIA, EPA explains only that the agency will release a project “by the end of 2019” that reviews the suitability of modeling techniques like benefit-per-ton approaches for estimating air quality benefits.⁶² EPA provides no initial findings from this review on appropriate methods for estimating VOC emission reduction benefits nor does the agency explain why it released the Proposed Rule before completing its analysis of appropriate modeling techniques.

Circular A-4 directs agencies to “present any relevant quantitative information” for unquantified effects.⁶³ Because EPA has heeded this requirement in past rulemakings, the agency’s refusal to present any quantitative value for VOC emission reductions that will be forgone as a result of the Proposed Rule is arbitrary and capricious.⁶⁴

⁵⁴ *Id.* at 1200.

⁵⁵ Proposed Rule, 84 Fed. Reg. at 50,279.

⁵⁶ PROPOSED RULE RIA, at 3-2 to 3-3.

⁵⁷ *See id.* at 3-15 to 3-19.

⁵⁸ *See* 2016 FINAL RULE RIA, at 4-22.

⁵⁹ *See* PROPOSED RULE RIA, at 3-2 to 3-3.

⁶⁰ *See* 2016 FINAL RULE RIA, at 4-22.

⁶¹ *See id.* at 5-3 to 5-4.

⁶² *See* PROPOSED RULE RIA, at 3-2 to 3-3.

⁶³ CIRCULAR A-4, at 27.

⁶⁴ *See* *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011) (vacating rule where agency “failed adequately to quantify the certain costs or to explain why those costs could not be quantified”).

C. EPA fails to properly classify the Proposed Rule as an “economically significant” regulatory action

According to EPA, the Proposed Rule is a “significant” action, but not an “economically significant” action.⁶⁵ EPA’s unreasonable use of a domestic social cost of methane figure and failure to quantify the forgone benefits of VOC reductions underestimates the Proposed Rule’s economic impact. With correct analysis, the Proposed Rule should be classified as an economically significant action and, as such, be accompanied by a more rigorous cost-benefit analysis.

Under Executive Order 12,866, a regulation is “economically significant” if it is expected to “have an annual effect on the economy of \$100 million or more.”⁶⁶ As OMB has explained, this “\$100 million threshold applies to the impact of the proposed or final regulation in any one year, and it includes benefits, costs, or transfers.”⁶⁷ In 2025, the Proposed Rule estimates that methane emissions will increase by 69,000 short tons per year and that VOC emissions will increase between 860 and 1,900 short tons per year.⁶⁸ Using the Interagency Working Group’s 2016 estimate for the social cost of methane and a 3% discount rate, the methane emissions in 2025 will result in costs of \$106 million in 2018 dollars.⁶⁹ On that basis alone, the Proposed Rule qualifies as economically significant.

Under Executive Order 12,866, agencies have a higher burden with respect to cost-benefit analysis of economically significant rules. An agency proposing an economically significant action must provide “[a]n assessment, including the underlying analysis, of costs anticipated from the regulatory action . . . together with, to the extent feasible, a quantification of those costs.”⁷⁰ The agency must also prepare “[a]n assessment, including the underlying analysis, of benefits anticipated from the regulatory action . . . together with, to the extent feasible, a quantification of those benefits.”⁷¹ Finally, the agency must include “[a]n assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives . . . and an explanation why the planned regulatory action is preferable to the identified potential alternatives.”⁷² As discussed above, the analysis accompanying the Proposed Rule does not satisfy these requirements.

⁶⁵ See Proposed Rule, 84 Fed. Reg. at 50,279.

⁶⁶ Exec. Order No. 12,866 § 3(f).

⁶⁷ OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, REGULATORY IMPACT ANALYSIS: FREQUENTLY ASKED QUESTIONS 1 (2011), *available at* https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/assets/OMB/circulars/a004/a-4_FAQ.pdf.

⁶⁸ See PROPOSED RULE RIA, at 1-9.

⁶⁹ See Interagency Working Group on the Social Cost of Greenhouse Gases, Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis (2016). President Trump disbanded the Interagency Working Group (IWG) in 2017, *see* Exec. Order No. 13,783 § 5(b), 82 Fed. Reg. 16,093 (Mar. 28, 2017), but the IWG figure still represents the best available estimate of the social cost of methane.

⁷⁰ Exec. Order No. 12,866 § 6(C)(ii).

⁷¹ § 6(C)(i).

⁷² § 6(C)(iii).

With that said, EPA’s responsibility to correct the aforementioned flaws in its RIA is not contingent on the Proposed Rule’s classification as economically significant. The analysis provided by the agency is below the standards required even for a significant rule.

V. EPA cannot reasonably interpret Section 111(d) to prohibit the regulation of methane from existing sources

EPA solicits comment on whether methane’s status as an ozone precursor prohibits the application of Section 111(d) to regulate existing sources.⁷³ Because methane is not regulated as a precursor to ozone under Section 108 and EPA regulations exclude methane from the definition of volatile organic compounds, EPA cannot reasonably interpret Section 111(d) to prohibit the regulation of methane from existing sources.

Pursuant to Section 111(d), EPA must regulate existing sources’ emissions of any “air pollutant” for which the agency has established *new* source performance standards under Section 111(b) *and* which is not already regulated as a criteria pollutant under CAA Section 108 or hazardous air pollutant under CAA Section 112.⁷⁴ In turn, Section 302(g) of the Clean Air Act defines “air pollutant” as including “any precursors to the formation of any air pollutant, to the extent the Administrator has identified such precursor . . . for the particular purpose for which the term ‘air pollutant’ is used.”⁷⁵ Under a reasonable construction of this text, EPA has “identified” a precursor “for the particular purpose” of the criteria or hazardous air pollutant programs only if the agency’s regulations under those programs actually encompass emissions of the relevant precursor. In other words, if EPA has not taken any steps under the criteria-pollutant program to limit emissions of a given criteria-pollutant particular precursor, it cannot reasonably argue that it is barred from regulating that precursor under Section 111(d).

Although ozone is an air pollutant for which air quality criteria have been issued under Section 108(a), EPA has not “identified” methane as a precursor that must be controlled under that section. Although the agency regulates volatile organic compounds as ozone precursors, its regulations governing implementation plans expressly exclude methane from the regulatory definition of “volatile organic compounds” due to methane’s “negligible photochemical reactivity.”⁷⁶ As a result, state implementation plans for achieving ambient ozone standards are not expected to address methane emissions.⁷⁷ In sum, EPA does not regulate methane as a

⁷³ See Proposed Rule, 84 Fed. Reg. at 50,269.

⁷⁴ See Clean Air Act § 111(d)(1)(A), 42 U.S.C. § 7411(d)(1)(A); see also EPA, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,701 (Oct. 23, 2015) (explaining that Section 111(d) applies to “certain existing sources of air pollutants that were not otherwise regulated as criteria pollutants or hazardous air pollutants”).

⁷⁵ § 7602(g).

⁷⁶ 40 C.F.R. § 51.100(s)(1); see also EPA, Air Quality: Revision to Definition of Volatile Organic Compounds—Exclusion of 16 Compounds, 62 Fed. Reg. 44,900 (Aug. 25, 1997) (final rule revising definition of VOC for purposes of preparing implementation plans to exclude methane and other compounds); Proposed Rule, 84 Fed. Reg. at 50,269 n.86 (stating that “EPA has excluded methane and some related pollutants from the definition of VOC”).

⁷⁷ See 40 C.F.R. § 51.100(s)(1).

precursor to ozone under Section 108 and disclaims its authority to do so pursuant to existing VOC regulations.

Because EPA does not regulate methane as a precursor to a criteria-pollutant under the criteria-pollutant program, it would be unreasonable for EPA to classify methane as a criteria-pollutant precursor that cannot be regulated in existing sources under Section 111(d). EPA characterizes Section 111(d) as serving a “gap-filling” role.⁷⁸ Regulating emissions in existing sources of precursors left unregulated by Section 108 and 112 properly fulfills this gap-filling purpose.

VI. EPA does not adequately consider the Proposed Rule’s implications for emissions from existing sources in the oil and gas category

In the Proposed Rule, EPA argues that, unlike methane, VOCs do not qualify as the type of air pollutant that, if subject to a standard of performance for new sources, would trigger the application of Section 111(d), which would also require the regulation of emissions from existing sources.⁷⁹ But if methane standards for new sources are repealed, EPA recognizes that the agency would lose authority to establish emission guidelines for methane for existing sources in any segment of the Crude Oil and Natural Gas source category under Section 111(d).⁸⁰ This loss of authority is an important consequence of the Proposed Rule to which EPA gives inadequate consideration.

Instead of addressing the consequences of its proposal, EPA falsely claims that “lack of regulation of existing sources under CAA section 111(d) will not mean a substantial amount of lost emission reductions.”⁸¹ EPA argues that market forces already provide sufficient incentive for existing sources to reduce their emissions; that many existing sources will retire or become subject to regulation under Section 111(b) after modification or reconstruction; and that state regulatory programs will fill in the gaps left between federal standards.⁸² EPA states that these forces will, collectively, achieve comparable methane emission reductions to performance standards, but this assertion is unsupported by the evidence before the agency.

A. Contrary to EPA’s claims, market forces alone do not provide a sufficient incentive for methane capture at existing sources

EPA claims that operators have market incentives to reduce emissions of methane because rational actors in the economic system will collect the natural gas and sell it.⁸³ Specifically, the Proposed Rule states that because methane is an “important commodity,” operators have an incentive to “maximize the capture of natural gas” to prevent the “loss of valuable product to the

⁷⁸ Proposed Rule, 84 Fed. Reg. at 50,272.

⁷⁹ *See id.*

⁸⁰ *See id.* at 50,271 (“The EPA recognizes that by rescinding the applicability of the NSPS, issued under CAA section 111(b), to methane emissions for the sources in the Crude Oil and Natural Gas Production source category that are currently covered by the NSPS, existing sources of the same type in the source category will not be subject to regulation under CAA section 111(d).”).

⁸¹ *Id.*

⁸² *See id.*

⁸³ *See id.* at 50,274.

atmosphere.”⁸⁴ However, EPA fails to account for the negative externalities of methane emissions that the market fails to adequately internalize.

A negative externality occurs when the manufacture or consumption of a good imposes uncompensated costs on a third party to the transaction. Because neither the buyer nor seller of the good is forced to take this cost into account, the good will be consumed at a higher-than-optimal level.⁸⁵ OMB has long recognized that environmental harms like air pollution are a “classic case of externality”—and a justification for promulgating regulation.⁸⁶ Executive Order 12,866 similarly recognizes that regulation is necessary to correct “material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people.”⁸⁷

In the case of methane and VOCs, leaks from oil and gas operations generate both private costs (in the form of forgone sales revenue from the loss of gas to the atmosphere) and external costs (in the form of methane’s contribution to climate change, and the health and environmental harms associated with VOC emissions). Private operators have an incentive to take the private cost into account, but not the external costs. Thus, they will not invest in leak prevention at an optimal level.

EPA promulgated the 2016 Rule, which the Proposed Rule seeks to rescind, to decrease the negative externalities of methane emissions from *new* sources in the oil and gas sector. EPA recognized that “all else held equal, the quantity of oil and natural gas produced in a competitive market will not be at the socially optimal level” without proper regulation of emissions.⁸⁸ This is just as true for existing sources as for the new sources covered by the 2016 Rule. Thus, in the absence of regulation, neither methane nor VOC emissions from existing sources will be adequately controlled.

B. EPA’s argument that many existing sources will be folded into the NSPS for new and modified sources fails to account for the perverse incentives created by grandfathering

EPA believes that many existing sources will be folded into the NSPS for new and modified sources as they can be reasonably expected to go through “modifications.”⁸⁹ However, the Proposed Rule fails to consider how divergent standards for modified versus existing facilities create perverse incentives for current operators.

Legal and economic scholars have long recognized that stringently regulating new sources of pollution while exempting existing sources—a regulatory practice commonly known as “grandfathering”—can perversely encourage those existing sources to stay in operation longer than they otherwise would and lead to adverse environmental consequences.⁹⁰ Indeed, EPA’s

⁸⁴ *Id.*

⁸⁵ See EPA, GUIDELINES FOR PREPARING ECONOMIC ANALYSES, at A-5 to A-6 (2010), available at <https://www.epa.gov/sites/production/files/2017-08/documents/ee-0568-50.pdf>.

⁸⁶ CIRCULAR A-4, at 4.

⁸⁷ Exec. Order No. 12,866 § 1(a).

⁸⁸ 2016 FINAL RULE RIA, at 1-3.

⁸⁹ Proposed Rule, 84 Fed. Reg. at 50,271, 50,273.

⁹⁰ See Richard L. Revesz & Jack Lienke, STRUGGLING FOR AIR: POWER PLANTS AND THE “WAR ON COAL” 30-35 (2016); see also Richard L. Revesz & Allison L. Westfahl Kong, *Regulatory Change and Optimal Transition Relief*,

own Guidelines for Preparing Economic Analyses warn that “grandfathering” existing sources by exempting them from more stringent regulatory requirements creates “a bias against constructing new facilities and investing in new pollution control technology or production processes.”⁹¹ Consequently, grandfathered older facilities, which have higher emission rates and larger negative impacts on public health and the environment, “tend to remain active longer than they would if the same emissions standard applied to all polluters.”⁹²

Under the Proposed Rule, EPA leaves NSPS for VOCs in place for new and modified sources in the production and processing segments but denies itself the ability to set equivalent standards for existing sources. Therefore, existing sources will have an incentive to remain operational longer than they otherwise would have, leading to prolonged adverse environmental consequences. EPA’s argument that existing sources will inevitably become subject to NSPS ignores this pernicious effect.

C. EPA’s conclusion that state regulatory programs will regulate existing sources is unreasonable given that current state programs are not comparably stringent

EPA concludes that state regulatory programs will regulate methane emissions from existing sources and minimize the environmental impact of EPA removing its authority to regulate methane emissions under Section 111(d).⁹³ However, state programs do not cover the same sources as the NSPS, are not present in all states, and are unlikely to regulate at an optimal level.

EPA admits that “not all of these states [with oil and natural gas regulations] cover all emission sources covered by the NSPS OOOO and OOOOa.”⁹⁴ The following chart shows the sources covered by regulations of oil and natural gas sector methane emissions:

105 NW. U. L. REV. 1581 (2011); Jonathan Remy Nash & Richard L. Revesz, *Grandfathering and Environmental Regulation: The Law and Economics of New Source Review*, 101 NW. U. L. REV. 1677 (2007).

⁹¹ EPA, GUIDELINES FOR PREPARING ECONOMIC ANALYSES, at 4-3 (2010), available at <https://www.epa.gov/sites/production/files/2017-08/documents/ee-0568-50.pdf>.

⁹² *Id.* See also Victor B. Flatt & Kim Diana Connolly, ‘Grandfathered’ Air Pollution Sources and Pollution Control: *New Source Review Under the Clean Air Act 3* (Ctr. for Progressive Regulation, White Paper No. 504, Mar. 2005), available at http://www.progressivereform.org/articles/NSR_504.pdf (“[M]any of these “grandfathered” plants are operating far beyond the lifetimes originally envisioned... [and] continue to contribute to dangerous pollution levels in all regions, and they put a high burden on health and clean economic growth years after they were expected to close.”). For more information, see RICHARD L. REVESZ & JACK LIENKE, STRUGGLING FOR AIR: POWER PLANTS AND THE “WAR ON COAL” 30-35 (2016); Richard L. Revesz & Allison L. Westfahl Kong, *Regulatory Change and Optimal Transition Relief*, 105 NW. U. L. REV. 1581 (2011); Jonathan Remy Nash & Richard L. Revesz, *Grandfathering and Environmental Regulation: The Law and Economics of New Source Review*, 101 NW. U. L. REV. 1677 (2007).

⁹³ See Proposed Rule, 84 Fed. Reg. at 50,274.

⁹⁴ *Id.* at 50,277.

*Comparison of State Oil and Natural Gas Regulations*⁹⁵

Source	CA	CO	MT	ND	NM	OH	PA	TX	UT	WY
Storage Vessels	X	X	X	X	X	X	X	X	X	X
Reciprocating Compressors	X	X				X	X			
Centrifugal Compressors	X	X				X	X			
Pneumatic Controllars	X	X				X	X		X	X
Pneumatic Pumps	X	X				X	X			X
Equipment Leaks at Natural Gas Processing Plants	X	X					X	X		
Fugitive Emissions at Well Sites	X	X	X	X	X	X	X	X	X	X
Fugitive Emissions at Compressor Stations	X	X				X	X			X
Methane Standards	X	X					X			
Transmission and Storage Segment	X	X				X	X			X

EPA does not differentiate between which states' regulations cover existing versus new source categories, merely noting that states may define existing and new sources differently.⁹⁶ EPA also does not explicitly state whether its chart includes all state regulations of methane emissions, but, if so, two of the top-five states for gas production⁹⁷ and one of the five leading states for crude oil production⁹⁸ lack state-level regulations for methane emissions in the oil and natural gas

⁹⁵ Table adapted from the Proposed Rule, 84 Fed. Reg. at 50,277.

⁹⁶ See Proposed Rule, 84 Fed. Reg. at 50,277 n.102.

⁹⁷ See *Which States Consume and Produce the Most Natural Gas?*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/tools/faqs/faq.php?id=46&t=8> (last visited Nov. 11, 2019). The chart summarizes regulations in Ohio, Pennsylvania, and Texas, but it does not include regulations for Louisiana or Oklahoma. The Proposed Rule explains that Oklahoma merely incorporates NSPS OOOO and OOOOa by reference into state rules. See Proposed Rule, 84 Fed. Reg. at 50,277.

⁹⁸ See *Crude Oil Production*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbbldp_a.htm (last visited Nov. 11, 2019). The chart summarizes regulations in Colorado, New Mexico, North Dakota, and Texas, but it does not include regulations for Oklahoma. The Proposed Rule explains that Oklahoma merely incorporates NSPS OOOO and OOOOa by reference into state rules. See Proposed Rule, 84 Fed. Reg. at 50,277.

sector. EPA seeks comment on other state-level practices. However, given these significant gaps in EPA's information regarding state-level regulations and the limited scope of the state regulations that EPA has identified, it is unreasonable for EPA to conclude that they would adequately fill the role of federal regulations for existing sources.

Economic logic also cautions against an assumption that states will regulate methane emissions at the same level of stringency as the federal government. Because greenhouse gases are global pollutants, states can enjoy the benefits of having oil and natural gas industry within their borders, such as jobs and tax revenue, without bearing the full environmental cost of that activity.⁹⁹ Because the negative effects are not wholly felt within the emitting jurisdiction, "the state has a significant incentive to under-regulate methane-producing activities."¹⁰⁰ Therefore, it is unreasonable for EPA to conclude that states have adequate incentives to regulate emissions to the socially optimal level.

Overall, given (1) EPA's own findings in 2016 that market incentives are not sufficient to reduce methane emissions to the socially optimal level, (2) the perverse incentives created by grandfathering, and (3) the insufficiency of state regulations, EPA cannot reasonably conclude that federal regulation of existing sources in the oil and gas sector is unnecessary.

Respectfully,

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⁹⁹ See *Constitutional Considerations: States vs. Federal Environmental Policy Implementation: Hearing Before the Subcomm. on Env't and the Econ.*, 113th Cong. 3 (2014) (statement of Richard Revesz, Lawrence King Professor of Law, New York University School of Law).

¹⁰⁰ *Id.* at 5.