

States of California, Colorado, Connecticut, Delaware, Illinois, Maine, Maryland, Michigan, Minnesota, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, Washington, Wisconsin, the Commonwealths of Massachusetts and Pennsylvania, the District of Columbia, and the City of Chicago

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U.S. Environmental Protection Agency
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RE: Comments on “Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review,” 86 Fed. Reg. 63,110 (Nov. 15, 2021)

Attention: Docket ID No. EPA-HQ-OAR-2021-0317

Dear Administrator Regan,

The States of California,¹ Colorado, Connecticut, Delaware, Illinois, Maine, Maryland, Michigan, Minnesota, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, Washington, Wisconsin, the Commonwealths of Massachusetts and Pennsylvania,² the District of Columbia, and the City of Chicago, (States and Cities) respectfully submit these comments on the Environmental Protection Agency’s (EPA) proposed rule titled “Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review,” 86 Fed. Reg. 63,110 (Nov. 15, 2021) (Proposed Rule or Rule).

The States and Cities applaud EPA on its efforts to strengthen regulation of new, modified and reconstructed facilities in the oil and natural gas sector and, for the first time, its promulgation of emission guidelines limiting methane – a potent greenhouse gas (GHG) – from existing facilities. The Proposed Rule will provide a strong national foundation to reduce

¹ The California Attorney General submits these comments pursuant to his independent power and duty to protect the environment and natural resources of the State. *See* Cal. Const., art. V, § 13; Cal. Gov. Code, §§ 12511, 12600-12612; *D’Amico. v. Bd. of Medical Examiners*, 11 Cal.3d 1, 1415 (1974).

² The Commonwealth of Pennsylvania Office of Attorney General submits these comments pursuant to its trustee’s duty to protect its people’s rights to clean air, pure water and preservation of its natural resources. *See* Pa. Const. art. I, § 27. The Pennsylvania Department of Environmental Protection is submitting its own comments on the Proposed Rule.

emissions from the oil and natural gas industry by reducing approximately 41 million tons of methane emissions, 12 million tons of smog-forming volatile organic compounds (VOCs), and 480,000 tons of air toxics between 2023 and 2035.³

Given that the sector is the largest industrial source of methane emissions in the United States,⁴ with methane emissions from oil and natural gas sources in existence before 2012 constituting the majority of the emissions in the sector,⁵ the Proposed Rule also constitutes an important component of the United States Methane Emissions Reduction Action Plan announced in November 2021.⁶ As discussed further below, reducing methane emissions from the oil and natural gas sector will help confront the growing climate emergency that is already impacting our residents. For instance, during the summer of 2021, multiple deadly heatwaves with record-breaking high temperatures ravaged the western United States while hurricanes of historic force swept across the southern and eastern United States, resulting in mass power outages and producing record-breaking rainfall and fatal flash floods. Climate change-related impacts like these are projected to worsen, underscoring the urgent need for strong limits on methane emissions from the oil and natural gas sector.

For these reasons, and as detailed below, we strongly support EPA's Proposed Rule. We further believe that certain elements of the Proposed Rule should be strengthened, including, but not limited to: (1) requiring regular monitoring and repair of leaks for all well sites regardless of their potential to emit or production level; (2) expressly prohibiting routine flaring, not just venting, from new and existing oil wells with associated gas; (3) strengthening the Rule as necessary to address the excessive environmental burdens imposed on communities located near oil and natural gas facilities; and (4) adopting guidelines that establish uniform federal requirements to minimize or eliminate emissions from abandoned wells.

I. FACTUAL BACKGROUND

A. Reducing Methane Emissions from the Oil and Natural Gas Industry Will Help Tackle the Climate Emergency

Methane is the main component of natural gas, and most of the methane emissions from the industry result from unintentional leaks or intentional releases as natural gas moves through the production, processing, transmission, and distribution system.⁷ Methane is also a potent greenhouse gas that has eighty times the warming impact of carbon dioxide for the first two

³ 86 Fed. Reg. at 63,122.

⁴ *Id.* at 63,113.

⁵ *Id.* at 63,153.

⁶ The White House Office of Domestic Climate Policy, *U.S. Methane Emissions Reduction Action Plan*, available at <https://www.whitehouse.gov/wp-content/uploads/2021/11/US-Methane-Emissions-Reduction-Action-Plan-1.pdf>

⁷ *Id.* at 63,114.

decades after release and approximately thirty times the warming impact over a one hundred-year timeframe.⁸ According to the Intergovernmental Panel on Climate Change, methane is the second leading climate-forcing agent after carbon dioxide globally.⁹

The States and Cities thus agree that reducing methane emissions from the oil and natural gas industry is an important and necessary step in addressing near term warming that is already affecting our residents.¹⁰ “The past six years, including 2020, have been the six warmest years on record,”¹¹ and as temperatures rise, threats to public health and the environment in our States and Cities continue to mount. For example, higher temperatures are linked with significant increases in “[hospital] admissions for acute renal failure, appendicitis, dehydration, ischemic stroke, mental health, noninfectious enteritis, and primary diabetes.”¹² And “[m]ortality effects are observed even for small differences from seasonal average temperatures.”¹³ These types of heat-related health and mortality risks are not equally distributed and the communities disproportionately impacted do not have equitable access to the healthcare and wealth necessary to address the inequitable health impacts.¹⁴ Socially-vulnerable populations—including children, elderly people, low-income communities, and people of color—are exposed disproportionately and experience greater impacts from higher temperatures.¹⁵

⁸ 86 Fed. Reg. at 63,114.

⁹ *Id.* at 63,127.

¹⁰ *See id.* at 63,114.

¹¹ *See* Att. 1, World Meteorological Organization, *State of the Global Climate 2020* 5 (2021).

¹² *See* Att. 2, Toki Sherbakov, et al., *Ambient temperature and added heat wave effects on hospitalizations in California from 1999 to 2009*, 160 *Envtl. Research* 83, 83 (2018); *see also* Att. 3, Louise Bedsworth et al., California Governor’s Office of Planning and Research, *Statewide Summary Report. California’s Fourth Climate Change Assessment* 38 (2018) (“High ambient temperatures have been shown to adversely affect public health via early death (mortality) and illness (morbidity).”).

¹³ *See* Att. 4, Marcus C. Sarofim et al., U.S. Global Change Research Program, *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, Ch. 2 44 (2016).

¹⁴ Nancy Lopez, et. al., *Health Inequities, Social Determinants, and Intersectionality* (December 2016), available at <https://nam.edu/health-inequities-social-determinants-and-intersectionality/>

¹⁵ *See* Att. 5, EPA, *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts* 32-36 (2021), available at www.epa.gov/cira/social-vulnerability-report; U.S. Global Change Research Program, *supra* n.7, at 45; Att. 6, Angel Hsu et al., *Disproportionate exposure to urban heat island intensity across major U.S. cities*, *Nature Communications* 8 (2021), available at <https://doi.org/10.1038/s41467-021-22799-5> (“Currently disadvantaged groups suffer more from greater heat exposure that can further exacerbate existing inequities in health outcomes and associated economic burdens, leaving them with fewer resources to adapt to increasing temperature.”).

“Warmer temperatures [also] contribute to the severity of drought conditions by leading to more precipitation falling as rain rather than snow, faster melting of winter snowpack, greater rates of evaporation, and drier soils.”¹⁶ This can result in, among other impacts, the degradation of water security¹⁷ and ecological vulnerabilities.¹⁸ Rising temperatures combined with drier conditions are also increasing the risk of wildfires.¹⁹ “[S]ince 1984, human-induced climate change is responsible for doubling the cumulative area of forest fires across the western United States.”²⁰ Consistent with this projection, the 2020 wildfire season was unprecedented – wildfires in Colorado burned more than 665,000 acres,²¹ and historic wildfires burned 10.2 million acres across California, Oregon, and Washington.²² These massive wildfires have broad impacts across our States and Cities. The 2020 wildfires—which conservatively cost an estimated \$16.5 billion²³—put 500,000 Oregonians under evacuation warnings or orders,²⁴ led to the displacement of about 100,000 people in California,²⁵ and killed 46 people in California, Oregon, and Washington.²⁶ This public health concern grows as the frequency and intensity of wildfires increase and is not limited to States where the wildfires are burning. The rising heat

¹⁶ Att. 7, Gabriel Petek, California Legislative Analyst’s Office, *What Can We Learn From How the State Responded to the Last Major Drought?* 2 (May 2021).

¹⁷ Att. 8, *Public Health*, Drought.gov, <https://www.drought.gov/sectors/public-health> (last visited Jan. 30, 2022).

¹⁸ Att. 9, Shelley D. Crausbay et al., American Meteorological Soc’y, *Defining Ecological Drought for the Twenty-First Century* 2545 (Dec. 2017).

¹⁹ U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States* 241 (D.R. Reidmiller et al. eds., 2018) (Fourth National Climate Assessment); Att. 10, Zachary A. Holden, et al., *Decreasing fire season precipitation increased recent western US forest wildfire activity*, 115 PNAS E8349, E8349 (Sept. 4, 2018) (“[D]eclines in summer precipitation and wetting rain days have likely been a primary driver of increases in wildfire area burned.”).

²⁰ Att. 11, Marcus Lowe and Rebecca Marx, Datu Research, *Climate Change-Fueled Weather Disasters & Costs to State and Local Economies* 53 (July 2020).

²¹ Att. 12, John Ingold, *Five charts that show where 2020 ranks in Colorado wildfire history*, The Colorado Sun (Oct. 20, 2020), <https://coloradosun.com/2020/10/20/colorado-largest-wildfire-history/>.

²² Att. 13, Adam B. Smith, *2020 U.S. billion-dollar weather and climate disasters in historical context*, Climate.gov (Jan. 8, 2021), <https://www.climate.gov/print/837056>.

²³ *Id.*; Att. 14, *Billion-Dollar Disasters: Calculating the Costs*, Nat’l Oceanic & Atmospheric Admin., <https://www.ncdc.noaa.gov/monitoring-references/dyk/billions-calculations> (last visited Jan. 30, 2022).

²⁴ Att. 15, Associated Press, *Oregon wildfires: 1 million acres burned; 500,000 people under some level of evacuation order*, KPTV (Sept. 11, 2020), https://www.kptv.com/news/oregon-wildfires-1-million-acres-burned-500-000-people-under-some-level-of-evacuation-order/article_e355b7ae-f3cb-11ea-a6ce-93011907052d.html.

²⁵ World Meteorological Organization, *supra* n.5, at 36.

²⁶ Smith, *supra* n.16.

from the wildfires takes particulate matter and toxic gases in the smoke into the jet stream, which can carry those hazardous substances thousands of miles and cause harmful air pollution across the country. Indeed, during the 2020 wildfire season and again in July of 2021, smoke from wildfires burning on the West Coast caused New York City to experience some of the worst air quality in the world.²⁷

Climate change is also contributing to increasingly severe weather events, such as hurricanes of greater intensity, sea-level rise, and coastal flooding.²⁸ Extreme weather events pose innumerable threats to our States and Cities—from increased health risks and death, damage to infrastructure, and water scarcity,²⁹ to economic damage and impacts to the energy system that “threaten[] more frequent and longer-lasting power outages and fuel shortages.”³⁰ Not only are the frequency and intensity of extreme weather events increasing but so too are the costs. On average, there were 7 extreme weather events per year in the United States between 1980-2020 that cost over \$1 billion, with an average annual cost of \$45.7 billion; however, over the past 5 years, the average number of events per year increased to 16, with an average annual cost of \$121 billion.³¹

For all these reasons, reducing methane emissions from the oil and natural gas sector – the largest industrial source of methane in the United States – will help tackle the climate emergency that we are all currently facing.

B. Reducing Other Air Emissions from the Oil and Natural Gas Industry Will Protect Public Health and Welfare

The oil and natural gas industry is also a source of significant emissions of VOCs and air toxics. The public health impacts of VOCs are well documented. VOCs are a main precursor to the formation of ozone, which can cause harmful respiratory symptoms such as airway inflammation and asthma.³² Long-term exposure to VOCs can also result in premature death from lung and heart disease.³³ Children and people with respiratory disease are most at risk.³⁴ EPA also projects that the Proposed Rule will result in the reduction of emissions of air toxics

²⁷ See, e.g., Oliver Milman, *New York air quality among worst in world as haze from western wildfires shrouds city*, The Guardian (Jul. 21, 2021), available at <https://www.theguardian.com/us-news/2021/jul/21/new-york-air-quality-plunges-smoke-west-coast-wildfires>

²⁸ Fourth National Climate Assessment, *supra* n.13, at Ch. 8.

²⁹ World Meteorological Organization, *supra* n.5, at 31.

³⁰ U.S. Global Change Research Program, *supra* n.7, at 176.

³¹ Smith, *supra* n.16.

³² 86 Fed. Reg. at 63,127.

³³ *Id.*

³⁴ *Id.*

associated with natural gas, such as formaldehyde and benzene.³⁵ These reductions will benefit public health and welfare, in part because toxic air pollutants cause cancer and other serious health effects.³⁶

II. LEGAL BACKGROUND

A. Statutory and Regulatory Framework

Section 111 of the Clean Air Act requires EPA to follow certain steps in regulating categories of stationary (non-vehicle) sources of air pollution.³⁷ First, EPA must establish a list of source categories and “shall include a category of sources in such list 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.”³⁸ To date, EPA has evaluated emissions from both new sources and existing sources from the source category in making this determination, “and the D.C. Circuit has upheld that industry-wide approach.”³⁹

Once it has listed a source category, EPA “shall” promulgate “standards of performance” limiting emissions of certain pollutants from new sources in that source category.⁴⁰ A “standard of performance” means “a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.”⁴¹ EPA sets performance standards for new sources by reference to emissions levels that can be achieved using the best system of emission reduction, but EPA does not mandate any specific equipment or technology.⁴² Under the Clean Air Act, an existing source that is modified or reconstructed after regulations are proposed for new sources is also considered a new source.⁴³ At least every eight years, EPA must “review and, if appropriate, revise such standards following the procedure required . . . for promulgation of such standards.”⁴⁴

³⁵ See Regulatory Impact Analysis for the Proposed Rule (RIA), § 3.6.

³⁶ *Id.*

³⁷ 42 U.S.C. § 7411(b).

³⁸ 42 U.S.C. § 7411(b)(1)(A).

³⁹ 84 Fed. Reg. at 50,269 n.85 (citing *Nat’l Lime Ass’n v. EPA*, 627 F.2d 416, 433 n.48 (D.C. Cir. 1980); *Nat’l Asphalt Pavement Ass’n v. Train*, 539 F.2d 775, 779-82 (D.C. Cir. 1976)).

⁴⁰ 42 U.S.C. § 7411(b)(1)(B).

⁴¹ 42 U.S.C. § 7411(a)(1).

⁴² 42 U.S.C. § 7411(a)(1) & (b)(5).

⁴³ 42 U.S.C. § 7411(a)(2); 40 C.F.R. § 60.15.

⁴⁴ 42 U.S.C. § 7411(b)(1)(B).

When EPA establishes performance standards for new sources in a particular source category, EPA is also required under section 111(d) of the Clean Air Act and applicable regulations to publish guidelines for controlling emissions from existing sources in that source category, subject to two narrow exceptions that are not applicable here.⁴⁵ After EPA issues final guidelines for existing sources of a designated pollutant, states must submit plans containing emission standards for control of that pollutant from designated facilities within the state.⁴⁶

B. Regulation of the Oil and Natural Gas Industry under Section 111

In 1979, EPA listed crude oil and natural gas production as a source that “contributes significantly to air pollution that may reasonably be anticipated to endanger public health or welfare.”⁴⁷ In 1985, EPA promulgated new source performance standards for the oil and natural gas source category that regulated emissions of VOCs and sulfur dioxide.⁴⁸ In 2012, EPA updated the new source performance standards to establish VOC standards for several oil and natural gas-related operations not previously covered.⁴⁹ Also in 2012, EPA evaluated methane emissions from the oil and natural gas source category, but did not take action.⁵⁰

In 2016, EPA issued new source performance standards directly regulating methane emissions from the oil and natural gas sector for the first time.⁵¹ Like other standards issued under section 111(b), EPA based the methane emission limits on the best system of emission reduction it determined had been adequately demonstrated. Specifically, the 2016 Standard targeted sources of methane and VOCs from the following segments of the oil and natural gas industry: extraction and production of crude oil and natural gas, natural gas processing, and natural gas transmission and storage.⁵² EPA’s promulgation of the 2016 Standard triggered its obligation to issue methane emission guidelines for existing sources. Although EPA did not concurrently issue such guidelines, it issued an information collection request shortly after its promulgation of the 2016 Standard⁵³ and began receiving the requested information from oil and natural gas operators in January 2017.

⁴⁵ 42 U.S.C. § 7411(d).

⁴⁶ 40 C.F.R. § 60.23a(a)(1).

⁴⁷ See Priority List and Additions to the List of Categories of Stationary Sources, 44 Fed. Reg. 49,222 (Aug. 21, 1979).

⁴⁸ 50 Fed. Reg. 26,122; 50 Fed. Reg. 40,158.

⁴⁹ 77 Fed. Reg. 49,490 (Aug. 16, 2012).

⁵⁰ *Id.* at 49,513.

⁵¹ 81 Fed. Reg. 35,824 (2016 Standard).

⁵² *Id.* at 35,832.

⁵³ 81 Fed. Reg. 35,763 (June 3, 2016).

C. For Nearly a Decade, the States and Cities Have Advocated for EPA’s Regulation of Methane Emissions from New and Existing Sources in the Oil and Natural Gas Industry

The States and Cities have a demonstrated interest in protecting our residents from harmful air pollution that contributes to climate change and endangers public health and welfare. We are already experiencing adverse impacts from climate change; these climate-related impacts will only get worse, and their costs will mount dramatically if GHG emissions continue unabated or increase.⁵⁴ For these reasons, the States and Cities have long called for the federal government to regulate methane emissions from the oil and natural gas sector under section 111 of the Clean Air Act:

- In 2012, several of the undersigned filed a notice of intent to sue EPA for failing to make a determination of whether to regulate methane emissions from the oil and natural gas industry.⁵⁵ This notice was followed by the submittal of comments arguing for the direct regulation of methane from new and existing oil and natural gas development and delivery equipment.⁵⁶
- In 2015, many of the undersigned submitted comments on the proposed 2016 Standard for new and modified sources, and further urged EPA to move forward expeditiously with regulation of existing sources.⁵⁷
- After EPA published the 2016 Standard, several states and industry groups filed petitions for review in the U.S. Court of Appeals, District of Columbia Circuit challenging the

⁵⁴ Fourth National Climate Assessment, *supra* n.13, at 26 (“With continued growth in emissions at historic rates, annual losses in some economic sectors are projected to reach hundreds of billions of dollars by the end of the century—more than the current gross domestic product (GDP) of many U.S. states.”).

⁵⁵ Att. 16, Clean Air Act Notice of Intent to Sue Letter to Lisa P. Jackson, EPA Administrator, from New York, Connecticut, Delaware, Maryland, Massachusetts, Rhode Island, and Vermont (Dec. 11, 2012).

⁵⁶ Att. 17, Letter from Eric T. Schneiderman, et al., to Gina McCarthy, “Re: Comments on EPA Methane White Papers” (June 16, 2014) (signed by attorneys general of Delaware, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont); Att. 18, Letter from Eric Schneiderman, et al., to Janet McCabe, “Re: Addressing Methane Emissions from Distribution Sector” (Sept. 12, 2014) (signed by attorneys General of Delaware, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont).

⁵⁷ Att. 19, Letter from Attorneys General of New York, Massachusetts, Oregon, Rhode Island, and Vermont to United States Environmental Protection Agency, Docket ID No. EPA-HQ-OAR-2010-0505 (Dec. 4, 2015).

2016 Standard. Many of the undersigned intervened in support of EPA to defend the rule.⁵⁸

EPA took several actions during the Trump administration to weaken the 2016 Standard and roll back and halt the regulation of methane emissions from the oil and natural gas industry. The States and Cities led several efforts challenging those actions:

- In 2017, many of the undersigned sued EPA in the U.S. District Court for the District of Columbia for unreasonable delay in meeting its obligation to issue guidelines limiting methane emissions from existing sources in the oil and natural gas sector (*State of New York, et al. v. Wheeler*, D.D.C. No. 1:18-cv-00773-RBW).
- When EPA issued its first administrative, three-month stay of the 2016 Standard, many of the undersigned intervened in litigation that successfully challenged the stay as unlawful.⁵⁹ EPA attempted to halt implementation of the 2016 Standard by proposing two additional stays of the requirements, which the States and Cities also opposed.
- In September 2020, EPA published a rule that excluded the natural gas transmission and storage segment from regulation and rescinded all methane regulations from the oil and natural gas sector.⁶⁰ EPA also published a separate rule with several technical amendments of the 2016 Standard, including the rollback of fugitive emission monitoring requirements.⁶¹ The States and Cities filed lawsuits in the U.S. Court of Appeals, District of Columbia Circuit challenging both the 2020 Policy Rule (*State of California, et al. v. Michael Regan, et al.*, No. 20-1357)⁶² and the 2020 Technical Rule (*State of California, et al. v. Andrew Wheeler, et al.* No. 20-1367).

After this decade-long effort, the States and Cities strongly support EPA's actions to restore, update, and strengthen the requirements of the 2016 Standard and to establish the first nationwide emission guidelines requiring states to limit methane emissions from existing sources.

⁵⁸ See *N. Dakota v. E.P.A.*, No. 13-1108 (D.C. Cir.).

⁵⁹ *Clean Air Council v. Pruitt*, 862 F.3d 1, 14 (D.C. Cir. 2017).

⁶⁰ See 85 Fed. Reg. 57,018 (2020 Policy Rule).

⁶¹ See 85 Fed. Reg. 57,398 (2020 Technical Rule).

⁶² In June 2021, the President signed a joint resolution of Congress disapproving the 2020 Policy Rule under the Congressional Review Act. As a result, the 2020 Policy Rule "had never taken effect," 5 U.S.C. § 801(b)(1), the portions of the 2016 Standard covered by the Policy Rule were reinstated, and the States and Cities voluntarily dismissed the lawsuit challenging the 2020 Policy Rule. The Congressional Review Act resolution did not address the 2020 Technical Rule, so the litigation challenging that rule is currently in abeyance.

III. LEGAL JUSTIFICATION FOR THE PROPOSED RULE

EPA has appropriately based the Proposed Rule on legal and factual findings that the oil and natural gas sector is the largest industrial emitter of methane in the United States; that methane is a potent GHG; that the oil and natural gas sector contributes significantly to air pollution that may reasonably be anticipated to endanger public health or welfare; and that methane emissions from the oil and natural gas sector should be directly addressed through standards reflecting the best system of emission reduction.

The States and Cities reaffirm our support of EPA’s inclusion of the natural gas transmission and storage segment in the source category. That segment comprises approximately 20 percent of GHG emissions from the natural gas sector.⁶³ EPA reasonably interpreted the original listing of the oil and natural gas source category to cover equipment in the production, processing, and transmission and storage segments of the oil and natural gas industry given the interrelated nature of the operations, equipment, and emissions.⁶⁴ Further, EPA found that increases in gas production and processing as a result of the hydraulic fracturing boom were causing concomitant emission increases in the transmission and storage segment as higher throughput upstream led to additional gas moving to market or being stored.⁶⁵ EPA also found that the production, processing, and transmission and storage segments utilize the same equipment and emit the same pollutants, which can be controlled using the same technologies.⁶⁶ Together, these factual similarities demonstrated the “good reasons” for regulating all segments in one source category that, in the Administrator’s judgment, contributes significantly to air pollution which may reasonably be anticipated to endanger public health or welfare.⁶⁷

EPA also has a rational basis for regulating methane emissions from the oil and natural gas source category based on its review of prior actions and newly available information related to climate change risks and the impact of methane. As stated above, before EPA can regulate a source category under section 111, the EPA Administrator must first find that the source category “in his judgment . . . causes, or contributes, significantly to, air pollution which may

⁶³ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2019*, at 3-91, available at <https://www.epa.gov/sites/default/files/2021-04/documents/us-ghg-inventory-2021-main-text.pdf?VersionId=uuA7i8WoMDBOc0M4ln8WVXMgn1GkujvD>. In addition to the transmission and storage segment, the other segments include: production (including exploration): 54 percent, processing: 19 percent, and distribution: 7 percent. *Id.*

⁶⁴ 80 Fed. Reg. at 56,600.

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.*; see also *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009).

reasonably be anticipated to endanger the public health or welfare.”⁶⁸ “And once [such finding] is made, the EPA is not just empowered, but obligated, to regulate.”⁶⁹

Further, under section 111 and EPA’s longstanding interpretation, once EPA lists and regulates a source category for any pollutant, EPA does not need to make an additional endangerment finding before regulating additional pollutants emitted by both new and existing sources in that source category. Instead, “[i]n exercising its discretion with respect to which pollutants are appropriate for regulation . . . the EPA has in the past provided a rational basis for its decisions.”⁷⁰ In determining whether it is appropriate to include a standard for a health-and-welfare endangering air pollutant, EPA generally considers: (i) the extent of the source category’s contribution to the emissions of the pollutant, and (ii) the availability of methods to reduce those emissions.⁷¹

In the 2016 Standard, EPA correctly determined that it had legal authority to regulate methane from the oil and natural gas source category under section 111(b)(1)(B).⁷² EPA relied on overwhelming record evidence regarding the adverse impacts of methane to public health and welfare and the high quantities of methane emissions from the oil and natural gas source category, including existing sources.⁷³ EPA also explicitly made an endangerment and significant contribution finding with respect to GHG emissions from the oil and natural gas source category. Thus, EPA properly concluded that methane emissions must be directly addressed through standards of performance under section 111(b)(1).⁷⁴ EPA compiled a robust

⁶⁸ 42 U.S.C. § 7411(b)(1)(A).

⁶⁹ *Am. Lung Ass’n v. EPA*, 985 F.3d 914, 971-72 (D.C. Cir.), *cert. granted sub nom. N. Am. Coal Corp. v. EPA*, No. 20-1531, 2021 WL 5024617 (U.S. Oct. 29, 2021), and *cert. granted sub nom. North Dakota v. EPA*, 142 S. Ct. 418 (2021), and *cert. granted in part sub nom. Westmoreland Mining Holdings LLC v. EPA*, 142 S. Ct. 418 (2021), and *cert. granted sub nom. W. Virginia v. EPA*, 142 S. Ct. 420 (2021).

⁷⁰ 81 Fed. Reg. at 35,842, citing *Nat’l. Lime Assoc. v. EPA*, 627 F. 2d at 426 & n.27.

⁷¹ *See, e.g.*, 81 Fed. Reg. at 35,842; *accord* 75 Fed. Reg. 54, 970 (Sept. 9, 2010).

⁷² 81 Fed. Reg. at 35,841; *id.* at 35,842-43 (“When considered in total, the facts presented in . . . this preamble, along with prior EPA analysis, . . . provide a rational basis for regulating GHG emissions from affected oil and gas sources by expressing GHG limitations in the form of limits on methane emissions.”).

⁷³ *See, e.g.*, 81 Fed. Reg. at 35,833-43 (citing to, among other things, EPA’s 2009 endangerment finding for GHGs, including methane, 74 Fed. Reg. 66,496 (Dec. 15, 2009), and subsequent assessments validating and lending additional credence to such finding; the fact that the oil and natural gas source category is the largest industrial emitter of methane in the United States; and the high global warming potential of methane, which is 28 to 36 times greater than that of carbon dioxide); *cf. Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 120 (D.C. Cir. 2012) (“The body of scientific evidence marshaled by EPA in support of the [2009] Endangerment Finding is substantial.”).

⁷⁴ *Id.*

administrative record demonstrating that the 2016 Standard met the requirements under section 111(b), including consideration of “the amount of the pollutant that is being emitted from the source category, the availability of technically feasible control options, and the costs of those control options.”⁷⁵ The record before the agency continues to provide ample support for EPA’s authority to issue the Proposed Rule.

For these reasons, EPA remains statutorily obligated under section 111 to regulate methane emissions from new and existing sources in the oil and natural gas source category. The undersigned States and Cities appreciate EPA’s recognition in the Proposed Rule that it is imperative to regulate methane emissions from existing sources expeditiously.⁷⁶ Existing oil and natural gas facilities are responsible for a majority of the methane emissions from this sector in the United States.⁷⁷ Across the country, more than 9 million people live within a half mile of an oil or gas well, including approximately 600,000 children under the age of five and 1.4 million over 65.⁷⁸ Since at least 2016, when EPA began to regulate methane from new oil and natural gas sources under section 111(b) of the Clean Air Act, EPA has been required to promulgate emission guidelines to regulate methane from existing oil and natural gas sources under section 111(d) of the Act.⁷⁹ We therefore urge EPA to finalize the emission guidelines promptly as immediate action is necessary to slow climate change, protect public health, and deliver much-needed equity and justice for overburdened communities.

IV. EPA’S PROPOSED RULE IS APPROPRIATE AND REASONABLE

Given that the 2016 Standard has been in effect for several years, and several states currently have standards that are more stringent than the 2016 Standard, EPA can point to a robust administrative record showing that the Proposed Rule is both technically feasible and that there are “adequately demonstrated” systems of emission reduction. In the Proposed Rule, EPA has further exercised its authority under section 111(d) of the Clean Air Act to determine the “best system of emission reduction (BSER) . . . adequately demonstrated,” and to apply that system to determine the required level of existing source emission reductions for the states, which EPA proposes as presumptive standards in its emission guidelines.

The States and Cities support EPA’s recognition of and reliance on the nation-leading regulatory experiences of states like California, Colorado, and New Mexico in formulating the new source performance standards and proposed emission guidelines.⁸⁰ As demonstrated by

⁷⁵ See 80 Fed. Reg. at 56,593, 56,595, 56,610, 56,613-14, 56,616-45 (proposed rule); 81 Fed. Reg. at 35,826-27, 35,829, 35,842, 35,845-46, 35,852, 35,855-56, 35,862, 35,871, 35,878-79, 35,891 (final rule).

⁷⁶ 86 Fed. Reg. at 63,153.

⁷⁷ *Id.*

⁷⁸ See Environmental Defense Fund, Federal Methane Map, *available at* <https://www.edf.org/federalmethanemap>

⁷⁹ See 42 U.S.C. § 7411(b), (d).

⁸⁰ 86 Fed. Reg. at 63,137.

these states, cost-effective control technologies and practices to eliminate or substantially reduce harmful methane emissions from new and existing oil and natural gas sources are technically feasible and widely available. As noted below, the States and Cities also believe that EPA should build upon and strengthen certain elements of the Proposed Rule.

A. EPA’s Proposed BSER for Fugitive Emissions from New and Existing Well Sites and Compressor Stations Is Adequately Demonstrated

1. EPA’s Proposed Standards for New and Existing Well Sites Are Feasible and Cost-Effective and Should Be Further Strengthened

The States and Cities support EPA’s elimination of the exemption from fugitive monitoring and repair for low production or marginal wells,⁸¹ which can be a source of significant emissions. As EPA notes, “it is not necessarily the case that fugitive emissions from sites with lower production have lower emissions than sites with higher production.”⁸² Similarly, “[EPA is] not aware of any information that would support creating a subset of existing wells that are owned by individuals or small businesses based on those sites being less likely to emit methane.”⁸³ Any well site, whether owned by an individual, small business or larger business, has the potential to emit significant quantities of methane or, indeed, be a so-called “super-emitter,” depending on the equipment at the site and maintenance practices.

Based on these considerations, EPA uses in its BSER analysis for fugitive emissions from well sites a site-specific baseline emission calculation approach, rather than an approach based on a well production threshold. As noted,⁸⁴ EPA’s approach is based largely on Colorado’s leak detection and repair (LDAR) program, which requires each well site to calculate its baseline methane emissions for all of the equipment at the well site, the number of fugitive emissions components associated with each piece of equipment, and the site-specific gas composition. Colorado’s regulatory approach to leak detection and approved instrument monitoring method (AIMM) inspection of well production facilities is multi-layered. First, as of a December 2021 program update, all new well production facilities must conduct monthly AIMM inspections unless they are constructed and operated with specified design alternatives.⁸⁵ Existing well production facilities must conduct inspections at a frequency that depends on the actual, uncontrolled VOC emissions from a storage tank.⁸⁶ Frequencies range from annual, for the

⁸¹ *Id.* at 63,170.

⁸² *Id.* at 63,187.

⁸³ *Id.* at 63,173.

⁸⁴ *Id.* at 63,187-88.

⁸⁵ 5 Colo. Code Regs. § 1001-9:D.II.E.4.e-f (adopted Dec. 17, 2021).

⁸⁶ *Id.* § II.E.4.g. tbl. 4.

smallest sites, to monthly for the largest sites and many sites in disproportionately impacted communities.⁸⁷

EPA’s approach differs from Colorado’s in certain respects, however, and can be strengthened. EPA’s approach does not account for equipment failures, which means more sites will fall below the 3 tons per year (tpy) methane emission threshold and will not be required to conduct any monitoring. EPA acknowledges that its approach “assumes all equipment is operating as designed.”⁸⁸ At a minimum, facilities with certain types of leak-prone equipment or equipment that can be the source of large emission events—such as flares, storage vessels, and pneumatic devices—should be required to comply with monthly or quarterly fugitive monitoring requirements regardless of their potential to emit (PTE) calculation. Also, sites should be required to use the uncontrolled PTE calculation for their storage vessels in their site-level baseline estimate to account for times when these vessels are not operating as designed, which is a known cause of large emission events.

Further, EPA’s proposal of a one-time survey for sites with PTE of 3 tpy or less to “ensure that they are operating in a well-controlled manner and not experiencing leaks or malfunctions that would cause their emissions to exceed 3 tpy,”⁸⁹ does not address the problem of future leaks or malfunctions. Malfunctions are known to account for a large amount of methane emissions. The States and Cities urge EPA at a minimum to require a resurvey or monitoring on at least an annual basis to account for such situations.

Alternatively, based on the experience of some leading states, we recommend that EPA consider requiring regular fugitive emissions monitoring and repair for all well sites regardless of their PTE or production level. Large leaks can happen at any time, even at well sites with low PTE, and regular monitoring is necessary to detect and mitigate those fugitive emissions. EPA’s exemption of well sites with a PTE of less than 3 tpy also leaves a significant source of methane emissions on the table. According to EPA’s 2021 of Greenhouse Gas Emissions and Sinks (GHGI), fugitive methane emissions for 2019 in the oil and natural gas source category were 96,000 metric tons methane for petroleum systems and 351,500 metric tons for natural gas systems, for a total of 447,500 metric tons.⁹⁰ And scientific evidence shows that EPA inventories dramatically underestimate the amount of methane emitted by the oil and natural gas sector. A synthesis of site-level emissions studies in 2018 found that the U.S. oil and natural gas sector methane emissions are approximately 60 percent higher than EPA estimates.⁹¹ By EPA’s

⁸⁷ *Id.*

⁸⁸ 86 Fed. Reg. at 63,171.

⁸⁹ *Id.* at 63,190.

⁹⁰ 86 Fed. Reg. at 63,186.

⁹¹ See Alvarez et al., *Assessment of Methane Emissions from the U.S. Oil and Gas Supply Chain*, 361 *Sci.* 186-88 (2018); see also Omara et al., *Methane Emissions from Natural Gas Production Sites in the United States: Data Synthesis and National Estimate*, 52 *Env. Sci. Tech.* 12915 (2018), <https://pubs.acs.org/doi/10.1021/acs.est.8b03535>; Cusworth et al., *Intermittency of Large*

estimate, approximately 86 percent of fugitive emissions can be attributed to wells with site-wide baseline emissions of 3 tpy or greater.⁹² Thus, EPA’s proposed exemption for well sites with PTE of less than 3 tpy would leave approximately 14 percent of fugitive emissions—as much as 100,000 metric tons of methane by some estimates—unregulated.

EPA has previously found that LDAR—principally optical gas imaging (OGI)—“can be used to monitor a large array of components at a facility and is an effective means of detecting fugitive emissions when the technology is used properly.”⁹³ The States’ experience further supports EPA’s conclusion that periodic LDAR to address fugitive emissions, including at all well sites, is adequately demonstrated.⁹⁴ As EPA acknowledges,⁹⁵ California’s regulation requires quarterly LDAR inspections at all new and existing well sites without exemptions, and operators in California – including large and small entities – have complied with the requirements for many years now.⁹⁶ Also, New York has proposed regulations that would require semiannual LDAR at all new and existing well sites with no minimum production threshold or PTE emission level for applicability.⁹⁷ Similarly, New Mexico’s recently proposed regulations apply LDAR requirements to all wells with no exceptions, with every well in the state to receive leak inspections at least once a year, and larger, potentially higher emitting wells receiving semiannual or quarterly inspections.⁹⁸ Pennsylvania regulates fugitive emissions from these source categories through the use of general permits.⁹⁹ General Permit-5A, which regulates emissions from Unconventional Natural Gas Well Site Operations and Remote Pigging Stations, requires quarterly LDAR for sources at unconventional natural gas well sites or remote pigging stations.¹⁰⁰ General Permit-5, which regulates emissions from Natural Gas Compressor Stations,

Methane Emitters in the Permian Basin, Env. Sci. Tech. Letters (2021),
<https://pubs.acs.org/doi/pdf/10.1021/acs.estlett.1c00173>.

⁹² 86 Fed. Reg. at 63,190.

⁹³ 80 Fed. Reg. 56,593, 56,634 (Sept. 18, 2015); *see also* EPA, *Oil and Natural Gas Sector Leaks* 36-45 (Apr. 2014), available at <https://www.ourenergypolicy.org/wp-content/uploads/2014/04/epa-leaks.pdf>.

⁹⁴ *See NRDC v. EPA*, 655 F.2d 318, 331 (D.C. Cir. 1981) (citing cases establishing that a standard is “achievable because it has been achieved”).

⁹⁵ 86 Fed. Reg. at 63,192.

⁹⁶ *See* Cal. Code Regs. tit. 17, § 95669.

⁹⁷ *See* [Proposed] 6 N.Y.C.R.R. 203-7.2, *Oil and Natural Gas Sector*, available at https://www.dec.ny.gov/docs/air_pdf/prop203.pdf.

⁹⁸ *See* New Mexico Environment Department, Proposed 20.2.50 NMAC (Jan. 20, 2022 version), at 20.2.50.16 available at <https://www.env.nm.gov/opf/wp-content/uploads/sites/13/2022/01/Attachment-1-NMED-Proposed-Part-20.2.50-January-20-2022-Version.pdf>

⁹⁹ 25 Pa. Code Chapter 127, Subchapter H (General Plan Approvals and Operating Permits).

¹⁰⁰ *Id.*

Processing Plants, and Transmission Stations, requires quarterly LDAR for sources at natural gas compression, processing, and transmission facilities to minimize fugitive emissions.¹⁰¹

EPA has also proposed that a first attempt at repair must be made within 30 days of finding fugitive emissions, with final repair, including resurvey to verify repair, completed within 30 days after the first attempt.¹⁰² The States and Cities recommend that EPA require a shorter repair period if the well site is located in proximity to an already overburdened community. For instance, Colorado regulations require that a first attempt at the repair of a leaking component be made within five days if a site is located within 1,000 feet of an occupied area or within a disproportionately impacted community.¹⁰³

The undersigned also support EPA's adoption of a presumptive standard for existing well sites in the OOOOc that follows the same fugitive monitoring and repair program as for new sources. Detecting and repairing leaks does not require installation of controls on existing equipment or retrofits. Rather, as noted by EPA,¹⁰⁴ the technology to address methane leaks is the same at new and existing sites, as are the emission reductions, costs and cost-effectiveness. It is therefore reasonable for EPA to promulgate a presumptive standard for fugitive emissions at well sites that mirrors the new source performance standard.

2. EPA's Proposed Standards for New and Existing Compressor Stations Are Feasible and Cost-Effective

The States and Cities support quarterly monitoring of fugitive emissions at new and existing compressor stations. The regulatory experience of California, which requires quarterly LDAR inspections at all facilities, including compressor stations, supports a determination by EPA that quarterly LDAR is both feasible and cost-effective.¹⁰⁵ New York's proposed regulations would require bimonthly LDAR at both new and existing transmission compressor stations.¹⁰⁶

The States and Cities support EPA's adoption of a presumptive standard for compressor stations in the OOOOc emission guidelines that follows the same fugitive monitoring and repair program as for new sources.¹⁰⁷ As EPA recognizes,¹⁰⁸ the BSER analysis is the same for both new and existing sources. EPA is soliciting comment on delayed repairs by existing sources

¹⁰¹ *Id.*

¹⁰² 86 Fed. Reg. at 63,121, Tbl. 3 "Summary of Proposed Presumptive Standards for GHGs from Designated Facilities."

¹⁰³ 5 Colo. Code Regs. §§ 1001-9:D.II.E.6.f-g, II.E.7.b (adopted Dec. 17, 2021).

¹⁰⁴ 86 Fed. Reg. at 63,173.

¹⁰⁵ *See NRDC v. EPA*, 655 F.2d 318, 331 (D.C. Cir. 1981).

¹⁰⁶ *See* [Proposed] 6 N.Y.C.R.R. 203-7.2(c)(1).

¹⁰⁷ 86 Fed. Reg. at 63,174.

¹⁰⁸ *Id.* at 63,196.

when parts are not readily available and must be specially ordered.¹⁰⁹ The States and Cities recommend that EPA consider disallowing or limiting delayed repairs at facilities close to an environmental justice community.

B. Storage Vessels

The States and Cities generally support EPA's amended definition of "storage vessel." With respect to EPA's proposed 6 tpy VOC for new storage vessels and 20 tpy for methane for existing storage vessels,¹¹⁰ EPA may consider lowering the applicable threshold. For example, Colorado requires the control of all new and existing storage tanks emitting 2 tpy of VOC or more,¹¹¹ and New Mexico is proposing a threshold of 2 tpy of VOC for new tanks, 3 tpy of VOC for existing tanks in multi-tank batteries, and 4 tpy for existing tanks in single tank batteries.¹¹² The States and Cities suggest that EPA consider states' existing frameworks for a "legally and practically enforceable limit" to ensure that states are not unnecessarily required to adopt duplicative recordkeeping and reporting regulations, or are forced to utilize alternative technologies and methods in a situation where state regulations ensure better control and accuracy than the Proposed Rule.

C. EPA's Proposed Standards for New and Existing Pneumatic Controllers Are Appropriate

The States and Cities support EPA's proposal to determine that zero-emission pneumatic controllers are the BSER for new and existing sources.¹¹³ EPA's model plant analysis, which relied in part on emission factors from a recent American Petroleum Institute study, shows that zero-emission controllers achieve significant emission reductions at a reasonable cost.¹¹⁴ In addition, as EPA recognizes,¹¹⁵ Colorado and New Mexico have demonstrated that oil and natural gas operators can utilize zero-emitting pneumatic equipment at both new and existing sources at reasonable cost and without disrupting operations.¹¹⁶

EPA has proposed in the emission guidelines that state plans must generally include a two-year compliance timeline for existing sources, but is also soliciting comment on a possible

¹⁰⁹ *Id.* at 63,174.

¹¹⁰ *See id.* at 63,201.

¹¹¹ 5 Colo. Code Regs. § 1001-9:D.II.C.1.c.

¹¹² New Mexico Environment Department, Proposed 20.2.50 NMAC (Jan. 20, 2022 version), at 20.2.50.123(A) available at <https://www.env.nm.gov/opf/wp-content/uploads/sites/13/2022/01/Attachment-1-NMED-Proposed-Part-20.2.50-January-20-2022-Version.pdf>

¹¹³ *See id.* at 63,208-09.

¹¹⁴ *Id.* at 63,204-09.

¹¹⁵ *Id.* at 63,204.

¹¹⁶ *Id.* at 63,206.

more specific phased-in approach in the context of zero-emitting pneumatic controllers.¹¹⁷ While the States and Cities are supportive of the two-year compliance timeline for these sources, both Colorado's recently adopted regulations and New Mexico's recently proposed regulations support a phased approach for existing facilities.¹¹⁸ Colorado's regulations require that new well-production facilities, those constructed after May 1, 2021, and well production facilities receiving production from a newly drilled or refracked well, must use only non-emitting pneumatic controllers.¹¹⁹ For other existing well-production facilities, Colorado requires a phased-in approach to retrofitting specified percentages of gas-driven pneumatic controllers with non-emitting pneumatic devices.¹²⁰ Colorado's program does not require that all gas-driven pneumatic controllers be removed or replaced. Its program focuses on the percentage of the facility production, based on liquids production that moves through a facility, and requires that a specified percentage of production move through facilities with non-emitting pneumatic controllers.¹²¹ Colorado, however, exempts operators from complying with many components of this program if their "total statewide oil and natural gas production average[es] 15 barrels of oil equivalent or less per day per well," *id.* § III.C.4.c.(iv)., in addition to other limited exemptions.¹²²

D. EPA Should Expressly Prohibit Routine Flaring, Not Just Venting, from New and Existing Oil Wells with Associated Gas

The States and Cities urge EPA to adopt NSPS and emission guidelines that effectively prohibit routine flaring of associated gas from new and existing oil wells, with the only exceptions related to safety and emergencies, by basing the BSER on owners or operators capturing all or a majority of the gas. Flaring is a major source of emissions of many harmful air pollutants. When functioning properly, flares emit large amounts of carbon dioxide and nitrogen oxides. When malfunctioning, which is common, they emit substantial amounts of methane, VOCs, and hazardous air pollutants directly into the atmosphere.¹²³

¹¹⁷ *Id.* at 63,209.

¹¹⁸ See 5 Colo. Code Regs. § 1001-9, Pt. D, § I.V. (2021); New Mexico Environment Department, Proposed 20.2.50 NMAC (Jan. 20, 2022 version), at 20.2.50.122 available at <https://www.env.nm.gov/opf/wp-content/uploads/sites/13/2022/01/Attachment-1-NMED-Proposed-Part-20.2.50-January-20-2022-Version.pdf>.

¹¹⁹ 5 Colo. Code Regs. §§ 1001-9:D.III.C.3.a, III.C.4.a (adopted Dec. 17, 2021).

¹²⁰ *Id.* § III.C.4.

¹²¹ *Id.* § III.C.4.c.(iii) & tbl. 1.

¹²² *Id.* § III.C.4.e.(i).

¹²³ See, e.g., Environmental Defense Fund, *Permian Methane Analysis Project*, available at <https://data.permianmap.org/pages/operators> (finding in seven random surveys of routine-flaring sites, flare malfunctions ranged from 3.3% to 11.5% and when expanded to all well sites, including lower-production wells, flare malfunctions jumped from 29% to 36%).

Operators of new and existing oil wells have many technically feasible alternatives to flaring that are also cost-effective considering the revenue they can derive from the captured gas. Operators can route the gas to a sales line, if available. But, even in the absence of a take-away pipeline for the gas, there are a number of practices available to operators that would avoid flaring, including using the gas to generate electricity onsite; compressing and transporting the gas via truck to a gas processing plant; reinjecting the gas into the underlying formation; and using the gas for enhanced oil recovery. If none of these options is available, the operator can temporarily shut in the well until take-away capacity exists.

New Mexico's regulations adopted in May 2021 further support that a prohibition on flaring is adequately demonstrated as the BSER. New Mexico's regulations prohibit routine venting or flaring and provide for a phased approach to require capture of at least 98% of gas produced by end of 2026.¹²⁴ At Phase 1, operators must collect and report data to identify the sources of emissions (from wellhead to processing and beyond) and then benchmarks are set for each operator.¹²⁵ At Phase 2, operators must show increasing progress until they reach the 98% capture threshold.¹²⁶ In addition, vented and flared gas are considered waste and subject to payment to the state of royalties and taxes.¹²⁷ Similarly, EPA could phase out flaring through a compliance schedule to address any demonstrated infrastructure (no take-away) or capacity (inadequate pipeline or processing plant capacity) issues.

EPA also should place limits on allowable exemptions. The only exemptions should be for safety or emergency reasons, not economic reasons. Some states, like Texas and North Dakota, have restrictions on flaring and venting, but allow for numerous exemptions and exceptions that have resulted in widespread flaring or venting. In 2018, Texas accounted for 51 percent of a total 1.28 billion cubic feet per day of vented and flared gas in the United States.¹²⁸ These emissions disproportionately impact environmental justice communities. According to a recent study, more than 535,000 people live within 5 km of flaring in the Permian Basin in West Texas and Eastern New Mexico, the Eagle Ford Shale Basin in Texas and the Williston Basin in North Dakota, and over 210,000 live within 5 km of 100 or more individual nightly flare events in these basins.¹²⁹ Flaring in the Williston Basin disproportionately impacts Native Americans,

¹²⁴ 19.15.28 NMAC.

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ U.S. Energy Info. Admin., *Natural gas venting and flaring increased in North Dakota and Texas in 2018* (Dec. 6, 2019), available at [https://www.eia.gov/todayinenergy/detail.php?id=42195#:~:text=In%202018%2C%20Texas%20and%20North,crude%20oil%20from%20new%20wells; see also 86 Fed. Reg. at 63,236 \(noting that over 64 percent of the methane emissions from the venting of oil well associated gas emissions occurs in Texas\).](https://www.eia.gov/todayinenergy/detail.php?id=42195#:~:text=In%202018%2C%20Texas%20and%20North,crude%20oil%20from%20new%20wells; see also 86 Fed. Reg. at 63,236 (noting that over 64 percent of the methane emissions from the venting of oil well associated gas emissions occurs in Texas).)

¹²⁹ Lara J. Cushing, et al., *Up in Smoke: Characterizing the Population Exposed to Flaring from Unconventional Oil and Gas Development in the Contiguous US*, Environmental Research,

particularly members of the Mandan, Hidatsa, and Arikara Nation.¹³⁰ In the Permian and Eagle Ford Shale Basins, the majority of the population is people of color.¹³¹ Further, data shows that majority Hispanic census blocks in the Eagle Ford Shale Basins had more flares within 5 km on average than less Hispanic census blocks.¹³²

Accordingly, EPA should follow the lead of New Mexico and prohibit routine flaring of associated gas from new and existing oil wells.

V. EPA SHOULD PROMPTLY ADDRESS ABANDONED WELLS IN A SUPPLEMENTAL PROPOSAL

EPA is soliciting comment on potential new source performance standards and emission guidelines to address emissions from abandoned or non-producing oil and natural gas wells that are not plugged or are plugged ineffectively.¹³³ EPA has requested additional information from states regarding abandoned wells that would assist the agency to evaluate BSER and possibly propose new source performance standards and emission guidelines through a supplemental proposal. The undersigned support and strongly encourage EPA to address emissions from abandoned wells at the federal level through new source performance standards and emission guidelines.

Abandoned oil and natural gas wells are a huge source of methane emissions and impose substantial burdens on states and taxpayers. EPA broadly characterizes abandoned wells as oil and natural gas wells that have been taken out of production but are not plugged. This includes “idle wells,” which are wells that are not producing, injecting, or otherwise being used for their intended purpose, and “orphan wells,” which are idle wells for which the operator is unknown or insolvent. The 2021 GHGI estimates that in 2019 the U.S. population of abandoned oil and natural gas wells was around 3.4 million.¹³⁴ The 2021 GHGI estimates that in 2019 abandoned oil wells emitted 209,000 metric tons of methane, and abandoned gas wells emitted 55,000 metric tons of methane.¹³⁵ These numbers are likely an underestimate.¹³⁶

Letters, 16 034032, at 7 (Feb. 2021), *available at* <https://iopscience.iop.org/article/10.1088/1748-9326/abd3d4>.

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² Att. 20, Jill E. Johnston, et al., *Environmental Justice Dimensions of Oil and Gas Flaring in South Texas: Disproportionate Exposure among Hispanic Communities*, *Environmental Science & Technology* 2020, *available at* <https://pubs.acs.org/doi/pdf/10.1021/acs.est.0c00410>.

¹³³ 86 Fed. Reg. at 63,240.

¹³⁴ 86 Fed. Reg. at 63,240.

¹³⁵ *Id.*

¹³⁶ Att. 29, Williams et al., *Methane Emissions from Abandoned Oil and Gas Wells in Canada and the United States*, 55 *Env. Sci. Tech.* 563 (2020), *available at*

EPA is soliciting comment on the number of abandoned wells in the U.S., and what requirements states impose with respect to closure, proper plugging, financial assurance, fugitive emissions monitoring while idled and unplugged, and record keeping and reporting.¹³⁷ Relevant to this request, the Interstate Oil and Gas Compact Commission (IOGCC) just released a report on idled and orphaned wells.¹³⁸ The report includes information submitted by thirty-two states and five Canadian provinces for calendar years 2018, 2019, and 2020 on inventories of idled and orphaned wells and the states' regulatory strategies.¹³⁹ As both EPA and the IOGCC note, states vary widely in how they regulate idled and orphaned wells.¹⁴⁰

The States and Cities support EPA's adoption of new source performance standards and emission guidelines that establish uniform federal requirements to minimize or eliminate emissions from abandoned wells, including by establishing as the BSER work practice or operational standards designed to prevent wells from becoming improperly abandoned in the first instance. The longer wells are allowed to remain idle, the greater the potential for them to deteriorate and leak or become orphan wells. Thus, the new source performance standards and emission guidelines should limit as the BSER the time that operators are allowed to idle wells and require strict management plans for idled wells to ensure that wells are properly plugged and do not become orphan wells.

To that end, well operators should be required to submit a well closure plan describing when and how the well will be closed and demonstrating their financial capacity to comply with the rules until it is closed. This demonstration should include financial assurance to provide money for plugging and restoration if the operator defaults. Allowable financial assurance instruments could include cash deposits, certificates of deposit, irrevocable letters of credit, and surety or performance bonds. Similarly, limits should be placed on the number of idle wells that an individual owner can hold, since a high percentage of idle wells may indicate an increased vulnerability of the operator becoming insolvent and leaving orphan wells. Further, the new source performance standards and emission guidelines should require prompt reporting of any transfer of well ownership.

The States and Cities also support EPA's adoption of new source performance standards and emission guidelines that require fugitive emissions monitoring of idled and unplugged wells. One complicating factor is that, according to EPA, most idled and non-producing wells would be

<https://pubs.acs.org/doi/10.1021/acs.est.0c04265> (finding that annual methane emissions from abandoned wells are underestimated by 20% in the U.S.).

¹³⁷ 86 Fed. Reg. at 63,242.

¹³⁸ Att. 21, IOGCC, *Idle and Orphan Oil and Gas Wells: State and Provincial Regulatory Strategies 2021* (IOGCC 2021 Report).

¹³⁹ *Id.*

¹⁴⁰ See 86 Fed. Reg. at 63,241; IOGCC 2021 Report at 3 and State and Provincial Summaries section.

classified as wellhead only, which EPA is proposing to exclude from LDAR requirements.¹⁴¹ However, given the risks associated with allowing wells to remain idled for long periods and to incentivize owners and operators to either produce or plug wells, any “wellhead only” well that is idled should no longer be exempt from LDAR requirements. EPA may further consider removing the “wellhead only” exemption entirely. Although “wellhead only” well sites have less ancillary equipment and therefore fewer fugitive emissions components, the wellhead itself does have emissions and should be inspected for leaks.¹⁴² California’s regulation requires quarterly monitoring of “wellhead only” well sites,¹⁴³ which demonstrates the feasibility of these requirements.

VI. EPA SHOULD STRENGTHEN ITS ENVIRONMENTAL JUSTICE ANALYSIS

In EPA’s 2014 Environmental Justice Legal Toolkit,¹⁴⁴ EPA’s Office of General Counsel explains that there are several provisions in Section 111 under which EPA retains the discretion to address a stationary source’s contribution to environmental injustice in communities of color, low-income households, and Indigenous populations. For example, section 111(b) and section 111(f)(2)(B) both require EPA to consider the extent to which any community’s, including communities with environmental justice (EJ) concerns, public health and welfare is endangered by the emissions from these stationary sources.

Accordingly, EPA has significantly underestimated the EJ impacts associated with hazardous air pollutant (HAP) emissions from the oil and natural gas sector, including the cumulative and long-term impacts on communities and workers exposed to the emissions from a disproportionate number of facilities continuously sited in already overburdened neighborhoods. First, EPA has only considered the cancer-related risks on EJ communities;¹⁴⁵ however, according to EPA’s own data, four of the eight most significant HAP pollutants from the oil and natural gas sector are not classified by EPA as carcinogenic.¹⁴⁶ These include toluene, ethylbenzene, mixed xylenes, and n-hexane. Exposure to these pollutants has other deleterious effects on human health. For example, chronic exposure to toluene can cause irritation of the

¹⁴¹ 86 Fed. Reg. at 63,162.

¹⁴² Emissions from Oil and Gas Production Facilities, TCEQ Contract 582-7-84003, Prepared by Eastern Research Group, Inc., Aug. 31, 2007, *available at* https://www.tceq.texas.gov/assets/public/implementation/air/am/contracts/reports/ei/5820784003FY0701-20090831-ergi-ei_from_old_gas_facilities.pdf. Wellhead emissions were estimated using emission factors, wellhead counts, and production data.

¹⁴³ *See* Cal. Code Regs. tit. 17, § 95669.

¹⁴⁴ EPA, *Plan EJ 2014: Legal Tools*, pp. 16-17, *available at* <https://www.epa.gov/sites/default/files/2015-02/documents/ej-legal-tools.pdf>

¹⁴⁵ RIA at 4-25 (“To evaluate the potential EJ impacts associated with baseline HAP emissions from the oil and gas sector, the EPA has assessed the cancer risks and estimated the demographic breakdown of people living in areas with potentially elevated risk levels.”).

¹⁴⁶ *Id.* at 3-21.

upper respiratory tract, eye irritation, dizziness, headaches, and difficulty with sleep.¹⁴⁷ Similarly, long-term inhalation exposure to xylenes in humans has been associated with a number of effects in the nervous system including headaches, fatigue, tremors, and impaired motor coordination.¹⁴⁸ Chronic exposure to n-hexane causes numbness in the extremities, muscular weakness, blurred vision, headache, and fatigue.¹⁴⁹ EPA's omission of these impacts from HAP exposure in its consideration of the EJ impacts of the oil and natural gas sector results in an analysis that does not reflect the full toxic burden imposed. EPA should revise its analysis to account for and recognize these non-cancer impacts.

Additionally, EPA has underestimated HAP emissions from the oil and natural gas sector by relying on the National Emissions Inventory to estimate emissions for rulemakings generally.¹⁵⁰ The 2017 Emission Inventory is based on emissions data reported to EPA by state and local agencies. However, this emissions data is often underreported for various reasons. For example, emissions from flares are commonly reported based on an assumption that flares operate at 98% destruction efficiency. This means that operators reporting emissions from flares assume that 98% of the VOCs, methane, and HAPs being routed to the flare are combusted and converted into carbon dioxide. However, in many instances, flares are operating at much lower destruction efficiencies or are unlit and are not operating at all. Seven random studies of routine-flaring oil and natural gas sites found flare malfunctions ranged from 3.3% to 11.5%.¹⁵¹ When expanded to all well—sites including lower-production, “marginal wells” – flare malfunctions jumped from 29% to 36%.¹⁵² A repeat study covering 200 square kilometers found that many malfunctioning flares failed more than once during a week; about one quarter of malfunctioning flares had problems on all three days of the study and over half of malfunctioning flares had problems on two days of the study.¹⁵³ In those situations, assuming a 98% destruction efficiency underestimates the actual emissions. A reduced destruction efficiency from 98% to 97% results in a 50% increase in emissions. A reduced destruction efficiency from 98% to 90% results in a 500% increase in emissions. And if the flare is completely unlit, the resulting increase in emissions is 5000%. Based on the prevalence of malfunction and unlit flares, the study concludes that actual emissions from flares are 3.5 times higher than reported.¹⁵⁴

¹⁴⁷ *Id.* at 3-23 – 3-24.

¹⁴⁸ *Id.* at 3-25.

¹⁴⁹ *Id.* at 3-26.

¹⁵⁰ For this rulemaking, EPA's risk assessment is based on the 2017 National Emissions Inventory (2017 NEI). RIA, at 4-25 (“We used the most recent National Emissions Inventory (NEI) data from 2017, which indicates nationwide emissions of approximately 110,000 tons of HAP for that year from oil and natural gas sources.”)

¹⁵¹ Att. 22, Environmental Defense Fund, *Methodology for EDF's Permian Methane Analysis Project (Permian Map)*, p. 7, Table 1, p. 9, Table 5 (Nov. 17, 2021).

¹⁵² *Id.* at 9.

¹⁵³ *Id.* at 8.

¹⁵⁴ *Id.* at 10.

Another source of underestimated or unreported emissions is from pigging operations at oil and natural gas gathering systems.¹⁵⁵ In 2019, EPA issued an enforcement alert regarding the failure of oil and natural gas operators to report emissions from pigging operations.¹⁵⁶ The alert highlights an enforcement action taken against one operator (MarkWest), the problem uncovered by EPA's enforcement team, and potential solutions.¹⁵⁷ EPA's analysis suggests that MarkWest had been failing to report approximately 706 tons of VOCs each year.¹⁵⁸ Because these emissions came from natural gas gathering operations, a certain percentage of the VOCs were HAPs that also went unreported. But EPA's enforcement action involved just one operator. As EPA's enforcement alert recognizes, it is likely that the underreporting of emissions is widespread problem of the oil and natural gas industry.¹⁵⁹

The NEI emissions data does not capture these additional HAP emissions from pigging operations or from poorly operating flares. As a result, the oil and natural gas sector's cancer burden (and other health impacts noted above) on EJ communities is likely substantially higher than EPA's analysis suggests. EPA should account for these sources of underestimated emissions in the NEI and make adjustments as appropriate. For flares, this would involve identifying the emissions reported from this source in the NEI by reviewing the underlying state emission inventories and multiplying the amount reported by 3.5. EPA should develop a similar multiplier factor for emissions reported from oil and natural gas gathering systems based on its own findings from the MarkWest enforcement action, and others, and then apply that multiplier to emissions reported from oil and natural gas gathering systems. This would enable EPA to better understand the EJ impacts of the oil and natural gas sector.

¹⁵⁵ "Pigging operations" are maintenance activities that are performed on a daily, weekly or monthly basis to prevent buildup of natural gas condensates in field gas gathering and transmission pipelines. These operations require a facility to vent and blowdown any pressure in the line prior to removing the device known as a pipeline intervention gadget or "pig."

¹⁵⁶ EPA, Enforcement Alert – EPA Observes Air Emissions from Natural Gas Gathering Operations in Violation of the Clean Air Act (EPA 325-F-19-001) (Sept. 2019)

¹⁵⁷ *Id.*

¹⁵⁸ EPA, MarkWest Clean Air Act Settlement Information Sheet, *available at* <https://www.epa.gov/enforcement/markwest-clean-air-act-settlement-information-sheet>.

¹⁵⁹ EPA, Enforcement Alert – EPA Observes Air Emissions from Natural Gas Gathering Operations in Violation of the Clean Air Act (EPA 325-F-19-001) (Sept. 2019) ("EPA and state inspectors have observed numerous instances where depressurizing pig launchers and receivers in natural gas gathering operations emit unauthorized or excess VOC emissions, due to the company's failure to obtain an air permit for the pigging equipment, to address deficiencies in the design of the pigging equipment, or to operate the pigging equipment in accordance with an air permit, air permit application or air permit registration.")

VII. COMMENTS ON EPA'S PROPOSED STATE PLAN REQUIREMENTS

This section provides the undersigned's comments on state plan issues, including equivalency, consideration of site-specific factors, community engagement, timing, and compliance.

A. State Equivalency

As EPA recognizes (and as described earlier in these comments), several states have already put in place regulations to limit methane emissions from existing oil and natural gas facilities. If those states were to submit plans that include existing state programs, EPA should consider the scope and stringency of those programs in determining whether those programs satisfy the requirements of section 111(d).

1. Form of standards

To translate the degree of emission limitation achievable through application of the BSER, EPA has proposed presumptive numerical and non-numerical standards for different types of oil and natural gas facility equipment.¹⁶⁰

As to numerical standards, state plans would “generally be expected to establish standards of performance that reflect these numerical presumptive standards.”¹⁶¹ EPA proposes to require that the standards of performance in state plans be expressed in the same form as EPA's presumptive standards (e.g., for storage vessels, 95% degree of control).¹⁶² According to EPA, such an approach will help streamline the development of state plans, and EPA's review of such plans, because there will be fewer variables to evaluate in the standards of performance.¹⁶³ The agency also seeks comment on “whether EPA should additionally allow States to include a different form of numerical standards . . . so long as States demonstrate the equivalency of such standards to the level of stringency required under the final [rule].”¹⁶⁴ Although the States and Cities understand the desirability of streamlining the preparation of state plans and simplifying EPA's review of those plans, allowing states to adopt a different form of the presumptive numerical standard is more consistent with the structure of section 111(d), under which states have wide latitude in developing their plans provided that the required level of emission reduction is achieved.

For presumptive non-numerical standards (e.g., for compressor stations: quarterly OGI monitoring in accordance with appendix K), EPA proposes that each state adopt the same

¹⁶⁰ See 86 Fed. Reg. at 63,250 (tbl. 20 and tbl. 21).

¹⁶¹ *Id.* at 63,250.

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.*

presumptive standards as EPA's or otherwise demonstrate that the state's alternative approach will achieve reduction in methane emissions at least equivalent to that of the presumptive standards.¹⁶⁵ The States and Cities concur with this approach.

2. State emission inventories

EPA's section 111(d) implementing regulations require that state plans contain emissions data on a source-specific or unit-specific level.¹⁶⁶ Recognizing the potential burden of requiring states to collect this information on the large number of sources that will be newly regulated under section 111(d), EPA is soliciting comment on whether to supersede this requirement in the final rule and "replace that requirement with a different emissions inventory requirement that seeks to represent the same general type of information but allows States to utilize existing inventories and emissions data," such as EPA's Greenhouse Gas Reporting Program (GHGRP).¹⁶⁷

EPA should allow states to utilize existing inventories and emissions data, even if that data might not fully align with the designated facilities in the emissions guidelines and may exclude some facilities that are subject to the emissions guidelines. Allowing states to leverage existing data will obviate the need to duplicate work developing emissions inventories, as long as the data submitted by states is rigorous and comprehensive enough to accurately capture emissions from the oil and natural gas industry.

3. EPA coordination with States implementing equivalent programs

For states whose programs are deemed equivalent, we encourage EPA to create a technology hub that allows states to more quickly review and approve alternative and innovative technologies and methodologies. Further, in considering equivalency, EPA should have a streamlined process for the adoption of states existing rules. For example, New Mexico just completed a multi-year comprehensive rulemaking process and has proposed a nation-leading regulation covering both new and existing oil and natural gas sources. We recommend that EPA provide a streamlined demonstration of equivalency if the state rules already require meaningful, cost-effective GHG and VOC emission reductions.

B. Site-Specific Factors

In establishing performance standards, states are permitted to consider a particular source's remaining useful life and other site-specific factors that may warrant deviation from the

¹⁶⁵ *Id.* at 63,251.

¹⁶⁶ *See* 40 C.F.R. § 60.25a(a).

¹⁶⁷ 86 Fed. Reg. at 63,253.

emission reduction level prescribed in the emission guidelines.¹⁶⁸ The primary reason Congress directed EPA to permit states to consider a source's remaining useful life (and other site-specific factors) was to acknowledge that it is generally more difficult (and costly) for existing sources to retrofit pollution controls than it is for new sources to install them. As EPA explained in a prior rulemaking, "Congress intended the remaining useful life provision to provide a mechanism for states to avoid the imposition of unreasonable retrofit costs on existing sources with relatively short remaining useful lives, a scenario that could result in stranded assets."¹⁶⁹ Therefore, states (or EPA, in the context of a federal plan) have flexibility to tailor standards for particular facilities to account for such circumstances. Absent a demonstration that such a deviation is justified, however, the state's standards of performance may not be less stringent than the guidelines.¹⁷⁰

In the Proposed Rule, EPA observed regarding oil and natural gas facilities that, "the general approach to considering remaining useful life and other factors . . . may not be an ideal fit."¹⁷¹ EPA cites the "sheer number and variety of designated facilities," which "could make a source-specific (or even a class-specific) evaluation of remaining useful life and other factors extremely difficult and burdensome for States."¹⁷² EPA further noted several facts that have led it to believe that it "would likely be difficult for States to demonstrate that the presumptive standards are not reasonable for the vast number of designated facilities," including:

- these presumptive standards generally entail fewer major capital expenses compared with other industries for which EPA has previously issued emission guidelines under section 111(d);
- many of the presumptive standards are in the form of design or work practice standards, as opposed to numerical standards; and
- EPA has deliberately included flexibilities to make the presumptive standards achievable and cost effective for a wide variety of facilities across the source category.¹⁷³

EPA is seeking comment on these observations, any other facts that are unique to the oil and natural gas industry that could impact the remaining useful life and other factors demonstration, and whether the agency should include specific provisions regarding consideration of site-

¹⁶⁸ See 42 U.S.C. § 7411(d)(1) and 40 C.F.R. § 60.24a(e) (listing site-specific factors, including unreasonable cost of control resulting from plant age, location, or basic process design; physical impossibility of installing pollution control equipment; and other factors related to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable).

¹⁶⁹ 80 Fed. Reg. at 64,872.

¹⁷⁰ 86 Fed. Reg. at 63,251 (citing 40 C.F.R. § 60.24a(c)).

¹⁷¹ *Id.* at 63,251.

¹⁷² *Id.*

¹⁷³ *Id.*

specific factors that would supplement or supersede those listed in EPA's implementing regulations.

The States and Cities generally agree with EPA's observation that the design of the presumptive standards likely lessens the instances in which a performance standard in a state plan would need to be relaxed compared to the guideline to account for a facility's remaining useful life or other site-specific factors. The control of fugitive emissions from well sites and compressor stations through use of leak detection and repair, for example, could be done throughout the remaining useful life of these sources without the need to install any retrofit technology. In light of the fact that section 111(d)(1) requires that states be allowed to consider remaining useful life and other site-specific factors, however, the agency's observation is more relevant to the subsequent state plan process (specifically, EPA's evaluation of whether a state has demonstrated a variance for particular sources is warranted) as opposed to whether states can depart at all from EPA presumptive standards.

In the final emission guidelines, the States and Cities suggest that EPA provide guidance on how the remaining useful life criterion should be applied to the different types of designated facilities. The agency could include information on the anticipated design life of oil and natural gas wells, storage vessels, compressors, pneumatic controllers, etc. based on industry experience. States could then use that information in evaluating whether the remaining useful life of particular sources would justify a different numerical or non-numerical standard.

Finally, related to the discussion above of abandoned wells, *see* Section V, *supra*, EPA should address how states should evaluate requests by owners/operators of idled and unplugged wells for variances from leak detection and repair requirements based on remaining useful life. EPA could explain, for example, that in reviewing whether a state plan is satisfactory, the agency will take into account whether any variances for these types of wells are conditioned on an enforceable shut down based on the source's projected remaining useful life.

C. Mandatory Approval of More Stringent State Plans

EPA recognizes that under section 116 of the Clean Air Act, states have the ability to submit more stringent emission reduction requirements than the agency's emission guidelines require.¹⁷⁴ The Supreme Court has held that as applied to EPA's review of state implementation plans under section 110 of the Act, section 116 requires EPA to approve such plans, making them federally enforceable provided that all applicable requirements are met.¹⁷⁵ As a logical extension of *Union Electric*, EPA states in the Proposed Rule that it must approve section 111(d) state plans that are more stringent than the emissions guideline if the plan is otherwise in compliance with all applicable requirements.¹⁷⁶ EPA correctly notes that the Court's reasoning in

¹⁷⁴ 86 Fed. Reg. at 63,251.

¹⁷⁵ *Union Elec. Co. v. EPA*, 427 U.S. 246 (1976).

¹⁷⁶ 86 Fed. Reg. at 63,251-52.

Union Electric concerning section 110 plans applies to EPA review of section 111(d) plans as well:

[W]hile the BSER and the NAAQS are distinct from one another in that the former is technology-based and the latter is based on ambient air quality, both CAA sections 111(d) and 110 are structurally similar in that States must adopt and submit to the EPA plans which include requirements to meet the objectives of each respective section. Requiring states to enact and enforce two sets of standards, one that is a federally approved CAA section 111(d) plan and one that is a stricter State plan, runs directly afoul of the court’s holding that there is no basis for interpreting section 116 in such manner.¹⁷⁷

The States and Cities agree with EPA’s view of these statutory sections and its conclusion that EPA must approve a more stringent state plan that meets the criteria set forth in the emissions guidelines. As EPA notes in the preamble to the proposal, there is no logical reason to treat more stringent section 111(d) plans differently from section 110 in this regard. Indeed, section 111(d) expresses Congress’s intent that such plans would be treated similarly.¹⁷⁸ Such an interpretation also promotes section 111’s focus on emissions “performance,” not on whether states have adopted identical methods set forth in EPA’s guidelines.

D. Community Engagement

The States and Cities concur with EPA that “a key consideration in the State’s development of a State plan pursuant to an [emission guideline] . . . is the potential impact of the proposed plan requirements on public health and welfare,” so that state plan development should include a “robust and meaningful public participation process.”¹⁷⁹ EPA proposes that states demonstrate “meaningful engagement” as part of their state plans.¹⁸⁰ The agency reasons that “meaningful engagement” must go beyond simply holding a public hearing, and should include sharing information with and soliciting input from stakeholders at critical junctures during plan development.¹⁸¹

Because oil and natural gas facilities are often sited near underserved or overburdened communities, EPA expects states to identify any such communities potentially impacted by the

¹⁷⁷ *Id.* at 63,252.

¹⁷⁸ *See* 42 U.S.C. § 7411(d)(1) (EPA “shall promulgate regulations which shall establish a procedure similar to that provided by section 7410 of this title under which each State shall submit to the Administrator a plan”).

¹⁷⁹ 86 Fed. Reg. at 63,253.

¹⁸⁰ *See id.* at 63,253.

¹⁸¹ *Id.*

state plan.¹⁸² States would be required to engage with these communities and develop public participation strategies to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation and ensure meaningful community representation in the process. The Biden Administration instructs its executive agencies and cabinets, including EPA, to consider the following communities as “underserved communities:”¹⁸³

[P]opulations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life . . . [including] Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

Strategies that states should consider include, but are not limited to, (1) targeting special notice by mail of public participation opportunities to residents and schools within a certain radius from regulated oil and natural gas facilities, (2) hosting a series of public meetings or workshops to provide background on the purpose of the state plans, the process for developing the plans, and the public comment and hearing process, (3) assuring that public meetings, workshops, and hearings are held at times that are convenient for members of the affected community, that translation services are available at such events, and that there are options for participating via phone or videoconference, (4) ensuring that any public meeting, workshop, hearing, or other format for gathering input are safe spaces and that participation does not endanger community members because of immigration or employment status, and (5) providing information on a public website and in hardcopy at an accessible location within the community, such as a public library or school. In their plan submissions, states would have to describe the engagement they had with their stakeholders, including their overburdened and underserved communities. Additionally, EPA would evaluate the states’ demonstrations regarding meaningful public engagement as part of its completeness evaluation of a state plan submittal.

The States and Cities agree on the importance of meaningful engagement of all stakeholders in the development of state plans, and support EPA’s efforts to ensure that overburdened and underserved communities play an important role in the process, including

¹⁸² “EPA uses the term ‘underserved’ to mean populations sharing a particular characteristic, as well as geographic communities, that have been systemically denied a full opportunity to participate in aspects of economic, social, and civil life.” 86 Fed. Reg. at 63,254. The agency uses the term “overburdened” as “referring to minority, low-income, Tribal, and indigenous populations or communities in the U.S. that potentially experience disproportionate environmental harms and risks as a result of greater vulnerability to environmental hazards.” *Id.*

¹⁸³ *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, Exec. Order No. 13,985, 86 Fed. Reg. 7009 (Jan. 25, 2021).

through setting forth in the final rule some minimum criteria. In light of the fact that some states have developed more robust environmental justice programs than others—including with respect to public participation—EPA should take existing state practices into account.

With respect to some of the meaningful engagement criteria that EPA has identified, it would be helpful if the agency provided some additional information in the final rule. For example, EPA could offer thoughts on how states could go about making public meetings or workshops safe spaces for undocumented members of overburdened or underserved communities. Similarly, EPA could specify that information about the rulemaking to be shared at a public meeting or workshop be translated in communities with linguistic barriers by EPA's duties under Title VI the Civil Rights Act.

E. Timeline for Submission of State Plans and EPA Review

The Proposed Rule does not set forth deadlines for state plan submission or EPA review (including, as necessary, imposition of a federal plan). Instead, the agency takes the position that there is currently a regulatory gap because the D.C. Circuit's decision in *American Lung Assoc. v. EPA*, 985 F.3d 991 (D.C. Cir. 2021), vacated the provisions in the 2019 implementing regulations for state plan submission, EPA review, and federal plans.¹⁸⁴ EPA therefore is soliciting comment “on any facts and circumstances that are unique to the oil and natural gas industry that the EPA should consider when proposing a timeline for plan submission applicable to a final [emission guideline] for this source category.”¹⁸⁵

The States and Cities suggest that EPA use a framework in the current rulemaking that is similar to the long-extant timing provisions in its implementing regulations, which provided nine months for states to submit plans and four months for EPA review. To account for states with a large number of designated facilities, we propose a slightly longer period for state plan submission, with state plans due within twelve months after EPA's promulgation of the final guideline (with the ability to seek additional time depending on a state's specific statutory requirements for creation and adoption of state plans). EPA's review would then have to be completed within four months of a state plan submission,¹⁸⁶ and federal plans would be due within six months of the state's failure to submit a satisfactory plan.¹⁸⁷ In light of the design of the Proposed Rule—including its use of work practices and presumptive emission limits—states should be able to meet a twelve-month submittal deadline. This time frame for state plan submission and for EPA review (and imposition, as necessary, of a federal plan) is also

¹⁸⁴ See 86 Fed. Reg. at 63,255.

¹⁸⁵ EPA also states that it intends to undertake a new rulemaking in the near future concerning the timing of state plans and EPA review, 86 Fed. Reg. at 63,255, but is unclear whether that rulemaking will be completed prior to promulgation of the final section 111(d) rule for oil and natural gas facilities.

¹⁸⁶ 40 C.F.R. § 60.27(b).

¹⁸⁷ *Id.* at § 60.27(d).

appropriate given that “strong, rapid, and sustained methane reductions are critical to reducing near-term disruption of the climate system.”¹⁸⁸

F. Compliance Issues

Operator compliance is critical for regulatory programs to achieve intended emission reductions. Thus, EPA should give due consideration to how compliance will be verified throughout implementation of the Proposed Rule.

1. EPA’s proposed two-year compliance schedule for all facilities

Under EPA’s regulations, each state plan must include compliance schedules that, subject to certain exceptions, require compliance as expeditiously as practicable but no later than the compliance times contained in the emissions guidelines.¹⁸⁹ EPA proposes that state plans include schedules requiring compliance with the standards of performance as expeditiously as practicable, but no later than two years following the state plan submittal deadline.¹⁹⁰ EPA recognizes that “it may be appropriate to require different compliance times for different designated facilities” and accordingly seeks comment on whether it should require a shorter or longer compliance schedule.¹⁹¹ Relatedly, EPA solicits comment on “whether it would be appropriate to establish different compliance schedules for different designated facilities, and if so, what are the appropriate timelines.”¹⁹²

The States and Cities support earlier compliance deadlines for designated facilities for which EPA has proposed leak detection and repair as the presumptive non-numerical standard (*e.g.*, well sites, compressor stations, gas plants).¹⁹³ Compliance with these standards likely will not require the installation of any pollution control equipment. Furthermore, leak detection and repair using optical gas imaging is a well-established practice in the industry. When EPA finalized the 2016 Standard, it required oil and natural gas sources to complete their initial leak detection surveys within one year.¹⁹⁴ Therefore, EPA should require in its final rule that the compliance deadline for presumptive standards based on leak detection and repair be no longer than one year.

2. States’ experience with compliance enforcement

The States and Cities strongly urge EPA to authorize the use of next generation monitoring tools to determine compliance with the requirements of the Proposed Rule. There are

¹⁸⁸ 86 Fed. Reg. at 63,113.

¹⁸⁹ 40 C.F.R. § 60.24a(a) and (c).

¹⁹⁰ 86 Fed. Reg. at 63,256.

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *See* 86 Fed. Reg. at 63,250, tbl. 21.

¹⁹⁴ *See, e.g.*, 40 C.F.R. § 60.5397a(f)(1).

several innovative compliance approaches that can be used to effectively and efficiently monitor sources for compliance, while balancing the already strained resources of state agencies. Given the magnitude of affected sources that will be brought under the Proposed Rule, EPA should consider allowing technologies that provide quantifiable, verifiable, and consistent monitoring and compliance data at a scale that can accommodate large remote regional areas consisting of hundreds or even thousands of facilities. As noted in the Proposed Rule, remote sensing technologies may allow owners and operators to more effectively comply with the monitoring requirements at well pads, without impacting the accuracy of the compliance determination. As further noted, other innovative remote sensing technologies to monitor fugitive and large emission events could include aerial, truck-based, satellite, and continuous monitoring. The States and Cities support these innovative approaches and states like New Mexico have provided such a mechanism for their use in its proposed regulations. Alternative monitoring strategies must be effective, enforceable, and equivalent, and will be a critical option for ensuring that emission leaks are identified and repaired as required.

California's regulations require that operators submit reports annually containing information on LDAR inspections, tank emissions, compressor emission rates, pneumatic device emission rates, liquids unloading vented gas volumes, well casing vent emission rates, and data from underground natural gas storage ambient monitoring. Operators are also required to update their equipment inventories each year if any equipment is added or removed. CARB then uses the reported data to verify compliance, evaluate implementation of the regulation, and estimate emission reductions.

In Pennsylvania, general permits set forth standardized terms and conditions related to best available technology, compliance certification, notification, recordkeeping, reporting, and source testing requirements. While the terms and conditions of the general permits applicable to oil and natural gas operations incorporate both federal and state requirements, it is the duty of the responsible official to ensure that the facility is in compliance with all applicable federal, state, and local laws and regulations. The responsible official must sign and submit a certification of compliance with the annual report. The annual report serves as the basis for the compliance certification. Any records generated as part of the terms and conditions of the general permits are required to be maintained on site or at the nearest local field office for a minimum of 5 years and may be maintained in electronic format. The key records generated and maintained by the owner or operator of a facility authorized under the general permit are those that show the facility is in compliance with the facility-wide emission limits on a 12-month rolling basis. All records, reports, or other information obtained by the Pennsylvania Department of Environmental Protection under the general permit are publicly available unless the owner or operator of the facility shows cause that the information is confidential. Under no circumstance are records of emission data eligible for confidentiality.¹⁹⁵

¹⁹⁵ Pennsylvania Air Pollution Control Act, 35 P.S. § 4013.2.

3. Use of community monitoring to assure compliance

The States and Cities support EPA's proposal to implement a program that requires owners and operators of oil and natural gas facilities to take action to mitigate emissions, maintain records, and report if emissions are detected above a defined threshold by a community, a Federal or State agency, or any other third party.¹⁹⁶

We encourage EPA to empower communities to help stem large emission events by providing a mechanism for communities to detect and report emissions to operators. When designing a community monitoring program, EPA should incorporate community experiences regarding odors, health effects, and other impacts.

EPA should also consider how innovative emission monitoring technology can be utilized to empower communities and ensure operators take appropriate actions. California has deployed new remote sensing technologies on planes and is working on deploying them on satellites in the coming years to better understand methane emissions in California. In addition, private entities have already launched or are actively developing satellites capable of detecting large methane emission events. As this technology becomes more available, EPA should leverage publicly available satellite data in community monitoring programs.

4. State Attorneys' General interest in partnering with EPA on compliance enforcement

Robust enforcement of the final rule will be critical to achieving the rule's significant emission reductions of methane, VOCs, and hazardous air pollutants. The undersigned State Attorneys' General are interested in using our enforcement authority in collaboration with EPA and the Department of Justice to see those pollution reductions realized.

VIII. EPA'S COST-BENEFIT ANALYSIS SUPPORTS THE PROPOSED RULE

EPA expects that the net economic benefits of the Proposed Rule will outweigh the costs, taking into consideration the avoided social costs imposed by GHG emissions and the industry's ability to sell the natural gas that will be captured by the new controls. The undersigned support EPA's use of the interim Social Cost of Methane (SCM) established in the Interagency Working Group on Social Cost of Greenhouse Gases' (IWG) recently published Technical Support Document (2021 TSD)¹⁹⁷ in evaluating the costs and benefits of the Proposed Rule.¹⁹⁸ Although the IWG is currently in the process of reviewing comments on how to improve and update the

¹⁹⁶ 86 Fed. Reg. at 63,177.

¹⁹⁷ Interagency Working Group on Social Cost of Greenhouse Gases, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimate Under Executive Order 13,990* (Feb. 2021).

¹⁹⁸ See 86 Fed. Reg. at 63,122-23.

SCM,¹⁹⁹ for now the interim value for SCM established in the 2021 TSD represents the best available estimate of the long-term cost to society of increasing methane emissions now.²⁰⁰ The use of the social cost of greenhouse gases (SC-GHG) in evaluating the costs and benefits of a proposed rule has been upheld by courts and does not violate the major questions or any other legal doctrine. EPA also appropriately recognizes some of the limitations of the interim SC-GHG values that tend to underestimate the cost of climate change impacts, although it should improve its disclosure and evaluation of those limitations.

A. EPA’s Cost-Benefit Analysis Appropriately Relies on the Interim Value for the Social Cost of Methane Established by the Interagency Working Group, which Represents the Best Available Science for Assigning a Monetary Value to the Impact of Greenhouse Gases

As EPA appropriately describes,²⁰¹ the interim value for the SCM in the 2021 TSD is based on the SCM established in a 2016 TSD, which was reached following a comprehensive, multi-year process of peer review and public comment. The IWG comprises economic and scientific experts from across the federal government.²⁰² Estimates of the SC-GHG are based on the best available, peer-reviewed literature and economic models.²⁰³ These estimates were developed using the three leading climate models that link greenhouse gas emissions to physical changes and economic damages; each model has been published and extensively reviewed in the scientific literature.²⁰⁴ The IWG has thoroughly and transparently discussed the models, inputs, and assumptions used, and has acknowledged the uncertainties of climate science.²⁰⁵ The U.S. Government Accountability Office reviewed the IWG’s process and concluded that the IWG:

- (1) Used consensus-based decision making;
- (2) relied largely on existing academic literature and models, including technical assistance from outside resources; and
- (3) took steps to disclose limitations and incorporate new information by considering public comments and revising the estimates as updated research became available.²⁰⁶

¹⁹⁹ See Notice of Availability and Request for Comment on “Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates Under Executive Order 13,990,” 86 Fed. Reg. 24,669, 24,670 (May 7, 2021).

²⁰⁰ See RIA at 3-5 to 3-6.

²⁰¹ RIA at 3-7 to 3-8.

²⁰² 2021 TSD at 1, 10-12.

²⁰³ *Id.* at 10-12.

²⁰⁴ *Id.*

²⁰⁵ *Id.* at 26-32.

²⁰⁶ U.S. Gov’t Accountability Off., *Regulatory Impact Analysis: Development of Social Cost of Carbon Estimates*, at 8 (July 2014), available at <https://www.gao.gov/assets/gao-14-663.pdf>.

Courts have also accepted, and at times required, the use of the SC-GHG in valuing climate-change related impacts. The Seventh Circuit upheld the Department of Energy's (DOE) use of the SC-GHG in evaluating the benefits of its refrigeration efficiency standards.²⁰⁷ The Court concluded that DOE's use of the SC-GHG to conduct an assessment of the rule's environmental benefits was authorized by the Energy Policy and Conservation Act (EPCA),²⁰⁸ which provided for consideration of "the need for national energy . . . conservation."²⁰⁹ The Court also turned aside a variety of objections to the development and reliability of the SC-GHG, concluding that DOE had appropriately responded to those objections and determined that the SC-GHG could be used to assess environmental benefits.²¹⁰

Moreover, courts have rejected agency action for failure to consider the SC-GHG. For example, in *Center for Biological Diversity v. National Highway Traffic Safety Administration*, the Ninth Circuit held that the National Highway Traffic Safety Administration (NHTSA) had acted arbitrarily and capriciously when it established vehicle efficiency standards under EPCA, without monetizing the benefits of greenhouse gas emissions reductions.²¹¹ The Court rejected NHTSA's argument that the value of reducing greenhouse gas emissions was "too uncertain" to quantify.²¹² The Court stressed that "while the record shows that there is a range of values, the value of carbon emissions reduction is certainly not zero."²¹³ Moreover, the Court observed that NHTSA had monetized the value of *other* uncertain benefits, including the reduction of criteria pollutants, crashes, and increases in energy security.²¹⁴

Other courts have held that, if an agency quantifies the economic benefits of an action that could increase greenhouse gases, it must also employ the SC-GHG to quantify the costs of the increased emissions.²¹⁵ These court decisions recognize that the SC-GHG is a reliable and scientifically validated approach to monetizing climate change impacts that should be incorporated into federal decision-making. It is therefore appropriate for EPA to employ the SCM in evaluating the benefits of the proposed rule.

²⁰⁷ *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 678-80 (7th Cir. 2016).

²⁰⁸ 49 U.S.C. §§ 32901-32919

²⁰⁹ *Zero Zone, Inc.*, 832 F.3d at 677.

²¹⁰ *Id.*

²¹¹ 538 F.3d 1172, 1198-1203 (9th Cir. 2008).

²¹² *Id.* at 1200.

²¹³ *Id.*

²¹⁴ *Id.* at 1202.

²¹⁵ See *Montana Env'tl Info. Ctr. v. U.S. Office of Surface Mining*, 274 F.Supp.3d 1074, 1095-99 (D. Mt. 2017); *High County Conservation Advocates v. U.S. Forest Serv.*, 52 F.Supp.3d 1174, 1189-92 (D. Col. 2014).

B. EPA’s Cost-Benefit Analysis Appropriately Relies on a Social Cost of Methane that Takes Into Account a Global Perspective on Climate Change Impacts

The undersigned agree with EPA’s recognition that the SCM must take into account global, not just domestic, emissions.²¹⁶ As far back as 2008, under the Administration of President George W. Bush, EPA recognized that:

GHGs are global pollutants. Economic principles suggest that the full costs to society of emissions should be considered in order to identify the policy that maximizes the net benefits to society, i.e., achieves an efficient outcome. Estimates of global benefits capture more of the full value to society than domestic estimates and can therefore help guide policies towards higher global net benefits for GHG reductions. Furthermore, international effects of climate change may also affect domestic benefits directly and indirectly to the extent U.S. citizens value international impacts (e.g., for tourism reasons, concerns for the existence of ecosystems, and/or concern for others); U.S. international interests are affected (e.g., risks to U.S. national security, or the U.S. economy from potential disruptions in other nations); and/or domestic mitigation decisions affect the level of mitigation and emissions changes in general in other countries (i.e, the benefits realized in the U.S. will depend on emissions changes in the U.S. and internationally). The economics literature also suggests that policies based on direct domestic benefits will result in little appreciable reduction in global GHGs.²¹⁷

The consideration of global impacts is also fully within the authority of federal agencies. In *Zero Zone*, the Seventh Circuit specifically upheld DOE’s consideration of global – not just national – benefits, accepting DOE’s explanation that “climate change involves a global externality, meaning that carbon released in the United States affects the climate of the entire world.”²¹⁸

In fact, ignoring global climate change impacts would be arbitrary and capricious. In *California v. Bernhardt*, the Northern District of California held that the Bureau of Land Management (BLM) had erred in evaluating only the domestic costs of increases in greenhouse

²¹⁶ RIA at 3-9.

²¹⁷ *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. 44,354, 44,415-16 (July 30, 2018) (internal citations and footnotes omitted).

²¹⁸ *Zero Zone*, 832 F.3d at 679.

gas emissions from BLM’s repeal of regulations to reduce waste at natural gas wells.²¹⁹ The Court noted that “focusing solely on domestic effects has been soundly rejected by economists as improper and unsupported by science.”²²⁰ The Court concluded that BLM could not “construct a model that confirms a preordained outcome while ignoring a model that reflects the best science available.”²²¹

Consistent with longstanding EPA policy, the decisions in *ZeroZone* and *California v. Bernhardt*, and common sense, EPA here has appropriately relied on an SCM value that takes into account global impacts.

C. EPA Is Not Precluded from Considering the Interim Value for the Social Cost of Methane Established by the IWG by the Major Questions Doctrine or Any Other Legal Doctrine

Opponents of the SC-GHG have raised a number of misplaced complaints regarding its use. Several states have attempted to preemptively preclude federal agencies from using the SC-GHG, arguing (among other things) that use of the SC-GHG violates separation-of-powers principles.²²² Those same states have also submitted comments to the Federal Energy Regulatory Commission (FERC) arguing that the use of SC-GHG implicates matters of “vast economic and political significance” requiring a clear statement from Congress to implement.²²³ However framed, the concern that any SC-GHG will upend the economy or exceed the bounds of executive authority is without legal or factual basis.

EPA’s use of the SCM to assess the benefits and impacts of the Rule is well within the scope of EPA’s authority to consider the costs and benefits of its actions. On a handful of occasions, the Supreme Court has invalidated agency regulations on the ground that they, in the Court’s view, far exceeded the agency’s statutory authority, and thus crossed into the realm of legislative policy-making.²²⁴ In those cases, the Supreme Court found that the agency had committed a category error in deeming itself to have authority to regulate in a particular area at

²¹⁹ 472 F.Supp.3d 574, 608-14 (N.D. Cal. 2020), *appeal pending* Docket Nos. 20-16794, 20-16801 (9th Cir.).

²²⁰ *Id.* at 613.

²²¹ *Id.* at 614.

²²² See First Amended Complaint, *State of Missouri v. Biden*, E.D. Mo., Case No. 4:21-cv-00287-AGF, Doc. #6 (Mar. 26, 2021), *dismissed* 2021 WL 3885590 (Aug. 31, 2021), *appeal pending* No. 21-3013 (8th Cir.); Complaint, *State of Louisiana v. Biden*, W.D. La. Case No. 2:21-cv-01074-JDC-KK, Doc. #1 (April 22, 2021).

²²³ See Comment on the Use of the Social Cost of Carbon, FERC Docket No. PL-18-1-000, Accession No. 20210427-5027 (filed Apr. 27, 2021).

²²⁴ See, e.g., *Utility Air Regulatory Group v. EPA*, 573 U.S. 302, 324 (2014); *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 159-60 (2000); *MCI Telecommunications Corp. v. AT&T*, 512 U.S. 218, 231 (1994).

all—such as the Food and Drug Administration’s assertion of jurisdiction over tobacco, a substance that it had never sought to regulate before;²²⁵ the Center for Disease Control and Prevention’s recent attempt to directly regulate “the landlord-tenant relationship,” a domain well beyond its traditional authority to “prevent[] the interstate spread of disease by identifying, isolating, and destroying the disease itself”;²²⁶ or the recent attempt by the Occupational Safety and Health Administration to promulgate “a broad public health regulation . . . untethered, in any causal sense, from the workplace” by mandating vaccinations or testing for tens of millions of private employees.²²⁷ In these cases, the Court determined that the agencies had made an error of kind, not just degree, by crossing specific statutory lines Congress had drawn.²²⁸ But nothing in those cases prohibits an agency, when acting within a clear delegation of statutory authority,²²⁹ to consider the costs and benefits of its action using a well-established, scientifically sound analytical tool such as the SC-GHG.²³⁰

The SCM is an important analytical tool that is used by agencies to translate certain impacts of greenhouse gas-emitting actions that they may consider into dollars. This dollar figure can then be compared to other projected costs or benefits to better inform agency decision-making. This cost-benefit analysis is consistent with section 111, which instructs EPA to consider “cost” as well as “non air quality health and environmental impact[s]” when evaluating the BSER.²³¹ This approach is also consistent with longstanding administrative practice: Executive Orders and White House guidance documents have, for decades and across Presidential administrations, instructed agencies to “use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible.”²³² The Supreme

²²⁵ See *Brown & Williamson*, 529 U.S. at 160.

²²⁶ *Alabama Ass’n of Realtors v. Dep’t of Health & Human Servs.*, 141 S. Ct. 2485, 2488-89 (2021).

²²⁷ *National Federation of Independent Business v. Dep’t of Labor, Occupational Safety and Health Admin.*, Case Nos. 21A244 & 21A247, Slip Op. at 8 (Jan. 13, 2022) (per curiam).

²²⁸ See *UARG*, 573 U.S. at 325 (rejecting EPA’s decision to “rewrite[e] unambiguous statutory terms”); *Brown & Williamson*, 529 U.S. at 141 (FDA’s regulation of tobacco would be “incompatible with” other statutory provisions).

²²⁹ See 42 U.S.C. § 7411.

²³⁰ See *Biden v. Missouri*, Case Nos. 21A240 & 21A241, Slip Op. at 6 (Jan. 13, 2022) (per curiam) (upholding vaccine mandate for healthcare workers promulgated by the Department of Health and Human Services because it was consistent with “longstanding practice” of agency to impose conditions necessary to “address the safe and effective provision of healthcare”).

²³¹ 42 U.S.C. § 7411(a)(1).

²³² *Improving Regulation and Regulatory Review*, Exec. Order No. 13,563 § 1(c), 76 Fed. Reg. 3,821 (Jan. 18, 2011); *accord Regulatory Planning and Review*, Exec. Order No. 12,866 §§ 1, 6(a)(3)(C), 58 Fed. Reg. 51,735 (Oct. 4, 1993) (requiring agencies to assess “all costs and benefits” of regulatory actions and alternatives, including “quantifiable measures []to the fullest extent that [they] can be usefully estimated”); OMB, *Circular A-4: Regulatory Analysis* at 2, 18 (2003) (OMB Circular A-4) (instructing agencies that expression of “potential real incremental

Court has stated that “[c]onsideration of cost reflects the understanding that reasonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions.”²³³ And agencies across the federal government, as well as state agencies and local governments, have incorporated some form of SC-GHG for years now, resulting in an increase in the rationality of agency decision-making, not the imposition of any unwarranted economic harm.²³⁴ Indeed, an evaluation of the cost and benefits of an agency action that will impact methane emissions that does not use the SCM would be woefully incomplete.²³⁵

Moreover, the SC-GHG does not dictate the outcome of any specific agency rulemaking, including this one. Here, EPA considers the SCM in evaluating the costs and benefits of the Proposed Rule (as it must),²³⁶ but nowhere suggests that those values were used to determine the BSER for the oil and natural gas sector, or that they will be determinative of its ultimate decision to promulgate the Rule.²³⁷ That approach is consistent with Section 111, which directs EPA to take costs “into account,”²³⁸ but does not require EPA to precisely balance costs against benefits before promulgating a section 111 regulation.²³⁹ Indeed, the RIA also evaluates a number of “non-monetized benefits.”²⁴⁰ The SC-GHG is simply one additional tool for monetizing some of the benefits of a regulation that would otherwise be non-monetized, not a thumb on the scale of agency cost-benefit analyses.

Nor do any of the cases upholding federal environmental reviews that declined to use the SC-GHG demonstrate that the SC-GHG *cannot* be employed by federal agencies. For example, in *EarthReports, Inc. v. FERC*, the D.C. Circuit held only that FERC was not *required* to use the SC-GHG, based on the specific record before it. It did not suggest FERC was barred from using

benefits and costs” of their actions “in monetary units” provides “useful information for decision makers and the public”).

²³³ *Michigan v. U.S. Env’t Prot. Agency*, 576 U.S. 743, 753 (2015).

²³⁴ 2021 TSD at 2.

²³⁵ *See Michigan*, 576 U.S. at 752 (“‘cost’ includes more than the expense of complying with regulations; any disadvantage could be termed a cost.”); *Center for Biological Diversity*, 538 F.3d at 1200-1201.

²³⁶ RIA, at 1-6 to 1-8.

²³⁷ 86 Fed. Reg. at 63,118-123.

²³⁸ 42 U.S.C. § 7411(a)(1).

²³⁹ *See Portland Cement Ass’n v. Train*, 513 F.2d 506, 508 (D.C. Cir. 1975) (although EPA conceded that relating costs of section 111 standard to benefits was “practical impossibility,” industry failed to show it could not “adjust itself in a healthy economic fashion” to the rule).

²⁴⁰ RIA at 1-11 to 1-13.

the SC-GHG.²⁴¹ FERC itself, for its part, has more recently requested comment on whether and how to use the SC-GHG.²⁴²

D. EPA Appropriately Recognizes Some of the Limitations of the Interim Value for the Social Cost of Methane that Underestimate the Costs of Climate Change, But It Should Engage in a Fuller Discussion of Those Limitations

EPA is correct to recognize that the interim value for SCM established in the 2021 TSD likely underestimates the true cost of climate change impacts, both in its use of discount rates and in the assumptions made by the underlying climate models.²⁴³ The undersigned States urge EPA to more fully evaluate these uncertainties by running additional evaluations with lower discount rates and by expanding its discussion of non-quantified impacts from climate change.

The States urge EPA to use lower discount rates (below 3%) in order to account for the long-term, intergenerational impacts of climate change. As the IWG now recognizes, “the 3 percent discount rate used by the IWG to develop its range of discount rates is likely an overestimate of the appropriate discount rate.”²⁴⁴ Since 2008, federal agencies have recognized that:

There are reasons to consider even lower discount rates in discounting the costs of benefits of policy that affect climate change. First, changes in GHG emissions—both increases and reductions—are essentially long-run investments in changes in climate and the potential impacts from climate change. When considering climate change investments, they should be compared to similar alternative investments (via the discount rate). Investments in climate change are investments in infrastructure and technologies associated with mitigation; however, they yield returns in terms of avoided impacts over a period of one hundred years and longer. Furthermore, there is a potential for significant impacts from climate change, where the exact timing and magnitude of these impacts are unknown. These factors imply a highly uncertain investment environment that spans multiple generations.

When there are important benefits or costs that affect multiple generations of the population, EPA and OMB allow for low but

²⁴¹ 828 F.3d 949, 956 (D.C Cir. 2017).

²⁴² *Certification of New Interstate Natural Gas Facilities*, 86 Fed. Reg. 11,268, 11,272 (Feb. 24, 2021).

²⁴³ RIA at 3-12 to 3-13.

²⁴⁴ 2021 TSD at 17.

positive discount rates (e.g., 0.5-3% noted by U.S. EPA, 1-3% by OMB).²⁴⁵

Indeed, recent studies show support for a long-term discount rate of “no higher than 2 percent.”²⁴⁶

Although EPA acknowledges that “a consideration of climate benefits calculated using discount rates below 3 percent, including 2 percent and lower, [is] also warranted when discounting intergenerational impacts,”²⁴⁷ it fails to present any valuation of the climate benefits using such lower discount rates. Conducting such evaluations should not be overly burdensome for the agency, and will provide useful additional information on the benefits of the rule.

Disclosure and consideration of costs or benefits that have not been monetized in a particular cost-benefit analysis is consistent with OMB Circular A-4, which provides that “[i]f monetization is impossible,” any agency should “explain why and present all available quantitative information.”²⁴⁸ Moreover, if an agency is “not able to quantify the effects” of an action, it should “present any relevant quantitative information along with a description of the unquantified effects[.]”²⁴⁹ In other words, the States are advocating only that existing regulatory guidance be applied to the unique challenges presented by global climate change: quantification of significant known costs and benefits, coupled with discussion and disclosure of significant impacts that are known but not amenable to quantification.

EPA also appropriately recognizes that the climate models used to produce the SCM “do not include all of the important physical, ecological, and economic impacts of climate change

²⁴⁵ 73 Fed. Reg. at 44,354.

²⁴⁶ See Att. 23, Tamma Carleton, et al., *Updating the United States Government’s Social Cost of Carbon*, Energy Policy Institute at the University of Chicago, Working Paper No. 2021-04, at 23 (Jan. 2021), available at https://epic.uchicago.edu/wp-content/uploads/2021/01/BFI_WP_202104_Final.pdf; accord Expert Report, *The Use of the Social Cost of Carbon in the Federal Proposal “Safer Affordable Fuel-Efficiency (SAFE) Vehicles Rule,”* (attached to comments of California Air Resources Board on EPA Docket No. EPA-HQ-OAR-2017-0355), Maximilian Auffhammer, Oct. 24, 2018, at 12; Council of Economic Advisers, *Discounting for Public Policy: Theory and Recent Evidence on the Merits of Updating the Discount Rate*, Issue Brief, at 3 (Jan. 2017), available at https://obamawhitehouse.archives.gov/sites/default/files/page/files/201701_cea_discounting_issue_brief.pdf.

²⁴⁷ RIA at 1-11 to 1-13, 3-12.

²⁴⁸ OMB Circular A-4, at 27.

²⁴⁹ *Id.*

recognized in the climate change literature.”²⁵⁰ EPA describes some of the limitations of the interim SC-GHG values, including

incomplete treatment of catastrophic and non-catastrophic impacts in the integrated assessment models, their incomplete treatment of adaptation and technological change, the incomplete way in which inter-regional and intersectoral linkages are modeled, uncertainty in the extrapolation of damages to high temperatures, and inadequate representation of the relationship between the discount rate and uncertainty in economic growth over long time horizons.²⁵¹

EPA further recognizes that although these “modeling limitations do not all work in the same direction,” overall “the limitations suggest that the interim SC-GHG estimates used in this proposed rule likely underestimate the damages from GHG emissions.”²⁵² And EPA does a laudable job of describing certain limitations that are specific to the SCM value.²⁵³ However, EPA could do more to disclose and discuss the various climate change impacts that are not accounted for by the SCM value.

Economists reviewing the SC-GHG models have extensively analyzed areas of damages that are not quantified or are otherwise underestimated.²⁵⁴ As New York’s evaluation of appropriate SC-GHG values observed, “[t]he [climate models] only partially account for, or omit, many significant impacts of climate change that are difficult to quantify or monetize, including ecosystems, increased fire risk, the spread of pests and pathogens, mass extinctions, large-scale migration, increased conflict, slower economic growth, and potential catastrophic impacts.”²⁵⁵ We highlight here several areas of unquantified damages that are particularly

²⁵⁰ RIA at 3-12 to 3-13.

²⁵¹ RIA at 3-13.

²⁵² RIA at 3-13.

²⁵³ RIA at 3-14.

²⁵⁴ See, e.g., Att. 24, Ruth DeFries, et al., *The missing economic risks in assessments of climate change impacts* (Sept. 2019), available at <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2019/09/The-missing-economic-risks-in-assessments-of-climate-change-impacts-2.pdf>; Att. 25, Institute for Policy Integrity, *A Lower Bound: Why the Social Cost of Carbon Does Not Capture Critical Climate Damages and What that Means for Policymakers* (Feb. 2019), available at https://policyintegrity.org/files/publications/Lower_Bound_Issue_Brief.pdf; Att. 26, Peter Howard, *Omitted Damages: What’s Missing from the Social Cost of Carbon*, at 30 (Mar. 13, 2014).

²⁵⁵ Resources for the Future, *Estimating the Value of Carbon: Two Approaches*, at 3 (Oct. 2020, revised April 2021), available at https://media.rff.org/documents/RFF_NYSERDA_Valuing_Carbon_Synthesis_Memo.pdf

important to the States: (1) combined effects of storm surges and rising sea levels, (2) health impacts from wildfires, and (3) loss of culturally and historically significant assets.

The combined effects of storm surges and rising sea levels are not accounted for in the climate models underlying the SC-GHG.²⁵⁶ But this is an area of tremendous concern to the undersigned States, many of which are coastal: the 2018 National Climate Assessment noted that, “[a]lthough storms, floods, and erosion have always been hazards, in combination with rising sea levels they now threaten approximately \$1 trillion in national wealth held in coastal real estate.”²⁵⁷ Under a high-end model of climate impacts, “coastal communities will be transformed by the latter part of this century, and even under lower scenarios, many individuals and communities will suffer financial impacts as chronic high tide flooding leads to higher costs and lower property values.”²⁵⁸ Indeed, a recent study concluded that higher sea levels caused by anthropogenic climate change increased the damage caused to the eastern seaboard by Superstorm Sandy in 2012 by more than \$8 billion.²⁵⁹ EPA should disclose and consider that the combined effects of sea level rise and storm surges have not been quantified.

The climate models underlying the SC-GHG values also do not account for impacts from wildfires, which include both health and economic effects.²⁶⁰ Each year, millions of Americans suffer through lengthy episodes of extremely unhealthy air due to wildfires, as the wildfire season becomes lengthier and more destructive due to climate change. Indeed, the *Fourth National Climate Assessment* highlighted health risks from wildfires as a major consequence of climate change, stating that “[e]xposure to wildfire smoke increases the risk of respiratory disease and mortality ... Wildfires are projected to become the principal driver of summertime PM_{2.5} concentrations, offsetting even large reductions in emissions of PM_{2.5} precursors.”²⁶¹ In December 2021, wildfires destroyed approximately one thousand homes and businesses in Boulder County, Colorado—where the usual wildfire season is May to September—because of a combination of changed climate conditions including a summer drought, a historic lack of December snowfall, and extreme winds.²⁶² Most Americans would reasonably assume that any

²⁵⁶ See *Lower Bound*, *supra* n.229, at 4.

²⁵⁷ *Fourth National Climate Assessment*, *supra* n.13 at 324.

²⁵⁸ *Id.*

²⁵⁹ Att. 27, Benjamin H. Strauss, et al., *Economic damages from Hurricane Sandy attributable to sea level rise caused by anthropogenic climate change* (May 18, 2021), available at <https://www.nature.com/articles/s41467-021-22838-1>.

²⁶⁰ See *Lower Bound*, *supra* n.229, at 5; *Omitted Damages*, *supra* n.229, at 20, 30.

²⁶¹ *Fourth National Climate Assessment*, *supra* n.13, at 521-22.

²⁶² Jason Samenow, Jacob Feuerstein, and Becky Bolinger, *How Extreme Climate Conditions Fueled Unprecedented Colorado Fire*, Wash. Post (Dec. 31, 2021), <https://www.washingtonpost.com/weather/2021/12/31/colorado-fires-climate-weather-drought/>; see also Tynin Fries, *List of homes and businesses destroyed in the Marshall fire*, The Denver Post (Jan. 1, 2022), <https://www.denverpost.com/2022/01/01/marshall-fire-homes-destroyed-list-addresses-businesses/>

effort to account for the social cost of greenhouse gases would include such a high-profile effect of climate change. EPA should disclose that these impacts from climate change are not included in the SCM, and include those impacts in its evaluation of the benefits of the rule.

Another area of unquantified damages identified by the National Academy of Sciences is the “loss of goods and services that are not traded in markets and so cannot be valued using market prices,” such as “loss of cultural heritage, historical monuments, and favored landscapes.”²⁶³ The Union of Concerned Scientists has identified many historic sites and landmarks at risk from climate change:

- Boston historic districts and Faneuil Hall, MA
- The Statue of Liberty and Ellis Island, NY
- Harriet Tubman National Monument, MD
- Historic Annapolis, MD
- Historic Jamestown, VA
- Fort Monroe National Monument, VA
- NASA’s Coastal Facilities, FL and TX
- Cape Hatteras Lighthouse, NC
- Historic Charleston, SC
- Historic St. Augustine, FL
- Mesa Verde National Park, CO
- Bandelier National Monument, NM
- Cesar Chavez National Monument, CA.²⁶⁴

The loss of these unique sites would exceed the monetary value of the land upon which they are located. EPA should disclose that the SCM does not take into account impacts to these historically significant locations and should consider those impacts in its evaluation of the benefits of the Proposed Rule.

²⁶³ National Academy of Sciences, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*, at 152 (2017).

²⁶⁴ Att. 28, Union of Concerned Scientists, *National Landmarks at Risk: How Rising Seas, Floods, and Wildfires Are Threatening the United States’ Most Cherished Historic Sites*, at 4-32, 36-40, 44 (2014).

IX. CONCLUSION

In sum, the States and Cities strongly support EPA's Proposed Rule and as detailed in these comments, request that certain elements of the Proposed Rule be strengthened before finalization.

Sincerely,

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