

ORAL ARGUMENT NOT SCHEDULED

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

STATE OF OKLAHOMA, et al.,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, et al.

Respondents.

No. 24-1059

(and consolidated cases)

On Petition for Review of Final Action of the
United States Environmental Protection Agency

**STATE RESPONDENT-INTERVENORS' OPPOSITION TO
PETITIONERS' MOTION TO STAY**

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PRELIMINARY STATEMENT

State Respondent-Intervenors respectfully submit this opposition to Petitioners’ Motion to Stay the final rule of the Environmental Protection Agency (EPA) entitled “Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review,” published at 89 Fed. Reg. 16,820 (Mar. 8, 2024) (the “Rule”).

The Rule updates and strengthens limits on air pollutants from new and modified sources in the oil and gas industry pursuant to section 111(b) of the Clean Air Act, 42 U.S.C. § 7411(b). And the Rule establishes nationwide emission guidelines requiring states to limit greenhouse gas emissions—specifically methane—from existing oil and gas sources pursuant to section 111(d) of the Act, *id.* § 7411(d). Methane is a climate “super pollutant” that is a far more potent contributor to climate change than carbon dioxide in the short-term, and is responsible for approximately one-third of the current climatic warming stemming from human activities. 89 Fed. Reg. at 16,823. The Rule will provide a strong national foundation to decrease emissions from the oil and natural gas industry by reducing approximately 58 million tons of methane, 16 million tons of smog-producing volatile organic compounds, and 590,000 tons of air toxics from being released into the atmosphere between 2024 and 2038. *Id.* at 16,836. Because the oil

and gas sector is the largest industrial emitter of methane in the United States, *id.* at 16,823, the Rule will help address the growing climate emergency that is already negatively affecting our states.

Petitioners incorrectly assert that the Rule’s emission guidelines requiring states to limit methane emissions from existing oil and gas sources upend Section 111(d)’s cooperative federalism framework and unlawfully deprive states of discretion in regulating emissions from existing sources. *See* Mot. 1. The Rule does not intrude on state sovereignty or require states to impose particular standards of performance on existing sources in their respective jurisdictions. Instead, following the same regulatory structure that EPA has employed for all prior Section 111(d) rulemakings, the Rule contains emission guidelines that reflect EPA’s determination of “the degree of emission limitation achievable through the application of the best system of emission reduction.” 42 U.S.C. § 7411(a)(1) & (d)(1); 40 C.F.R. § 60.21a(e). The Rule’s emission guidelines translate the agency’s determination into “presumptive standards” that states may, but are not required, to use in developing their state plans. States may instead choose to submit a plan that includes different standards of performance that achieve the degree of emission limitation that would be achieved using the presumptive standards, unless the state can justify a less stringent degree of emission limitation based on certain source-specific considerations. Or states may opt out of self-regulation entirely and

allow EPA to directly regulate existing sources. The Rule therefore promotes the Clean Air Act's cooperative federalism aims by providing the states flexibility in achieving methane reductions from existing sources.

The Rule also provides states with adequate time for states to develop and submit their plans. After considering comments received, and its own regulatory experience, EPA extended the time allowed for states to submit their plans from 18 months to 24 months. EPA also reviewed the administrative processes involved with different types of plans required by the Clean Air Act and determined that 24 months was reasonable and justified given EPA's balancing of the regulatory burden on states with the need to mitigate climate change and protect human health.

The equities also weigh heavily against a stay. State Respondent-Intervenors are experiencing climate change and public health harms firsthand, and urgently seek the reductions in methane and smog-producing volatile organic compounds provided by the Rule. Any delay in emission reductions from a stay would compound these significant harms. Denial of a stay, on the other hand, would not cause irreparable harm. Petitioners have failed to allege any cognizable harm that would justify a stay of the Rule, instead relying on the economic costs of regulatory compliance that are inherent to every EPA rulemaking.

For these reasons, Petitioners' motion should be denied.

ARGUMENT

A stay of an agency rule is “an extraordinary remedy” and it is “the movant’s obligation to justify” such relief. *Cuomo v. U.S. Nuclear Regul. Comm’n*, 772 F.2d 972, 978 (D.C. Cir. 1985). To qualify, the movant must make a strong showing that they are likely to prevail on the merits of the appeal. *Virginia Petrol. Jobbers Ass’n v. Fed. Power Comm’n*, 259 F.2d 921, 925 (D.C. Cir. 1958). In addition, the movant must demonstrate irreparable harm that is “both certain and great,” and that the balance of the equities and public interest weigh in favor of a stay. *See Wisconsin Gas Co. v. FERC*, 758 F.2d 669, 674 (D.C. Cir. 1985).
Petitioners fail to carry this high burden.

I. PETITIONERS ARE NOT LIKELY TO SUCCEED ON THE MERITS

A. The Rule Is a Lawful Exercise of EPA’s Authority Under Section 111(d)’s Cooperative Federalism Structure.

Petitioners argue that the Rule’s presumptive standards are functionally mandatory, and thereby “destroy” the cooperative federalism framework of Section 111(d) by unlawfully infringing on the states’ right to exercise their discretion in regulating emissions from existing sources in their respective jurisdictions. Mot. 1, 7-11. But petitioners fail to establish a substantial likelihood of success on the merits because those standards are *presumptive*, not mandatory, in accordance with Congress’s well-established framework of cooperative federalism that has consistently been upheld.

Under Section 111(d), when EPA sets performance standards addressing emissions of a particular pollutant from new or modified stationary sources of air pollution, the agency “must then address emissions of that same pollutant by existing sources.” *W. Virginia v. Env’t Prot. Agency*, 597 U.S. 697, 710 (2022). As the Supreme Court in *West Virginia v. EPA* made clear, although states set the actual rules governing existing stationary sources within their respective jurisdictions, EPA “retains the primary regulatory role in Section 111(d)” and “decides the amount of pollution reduction that must ultimately be achieved.” *Id.* EPA does so by setting emissions guidelines that reflect the agency’s determination of “the degree of emission limitation achievable through the application of the best system of emission reduction . . . that has been adequately demonstrated for [existing covered] facilities.” 40 CFR § 60.22a(b)(5).

Each state then must submit a plan that regulates emissions from existing sources in its jurisdiction. *See* 42 U.S.C. § 7411(d)(2)(A); 40 C.F.R. § 60.23a. While the plan generally must require each existing source to achieve a degree of pollution reduction that is at least as stringent as the limitations that would be achieved under EPA’s guidelines, states can use different approaches to reach that target. *See* 40 C.F.R. § 60.24a(b)-(c), (i). And a state plan may require a particular existing source to achieve pollution limitations that are less stringent than the limitations that would be achieved under EPA’s guidelines where the state can

demonstrate that the source cannot reasonably achieve EPA's emission guidelines based on the facility's "remaining useful life and other factors," such as considerations of cost and the physical or technical feasibility of installing the necessary control equipment. *See* 40 C.F.R. § 60.24a(e)(1). EPA has previously exercised its authority under Section 111(d) to set emission guidelines for different types of air pollution from various categories of existing sources, including fluorides from phosphate fertilizer plants and gases from municipal solid waste landfills. *See* Phosphate Fertilizer Plans, 42 Fed. Reg. 12,022 (Mar. 1, 1977); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources Municipal Waste Combustors, 60 Fed. Reg. 65,387-01 (Dec. 19, 1995).

Consistent with these previous Section 111(d) rulemakings, the Rule does not directly impose standards of performance on existing sources of methane emissions in the oil and gas sector or require that states impose particular standards of performance on existing sources. Rather, "to assist states in developing their plan submissions," 89 Fed. Reg. at 16,829, the Rule provides presumptive standards that contain EPA's determination of "the degree of emission limitation achievable through the application of the best system of emission reduction," 40 C.F.R. § 60.22a(b)(5). States with existing oil and gas sources may choose to use

the presumptive standards in their plans,¹ but also have flexibility to use other approaches in designing and implementing a state-specific plan² that ensures that existing sources within their jurisdiction achieve emission limitations at least as stringent as the limitations achievable under the presumptive standards. *See* 89 Fed. Reg. at 16,996-17,006; *see also* 40 C.F.R. § 60.24a(b)-(c), (i).

Thus, Petitioners err in claiming that the Rule undermines the Act’s principles of cooperative federalism by forcing states to adopt EPA’s presumptive standards. *See* Mot. 9. As EPA explained, its presumptive standards merely “provide requirements for states in developing their plans and criteria for assisting the EPA when judging the adequacy of such plans.” 89 Fed. Reg. at 16,995. Under this framework, states may take one of several compliance approaches in developing their plans. For example, states may—through modeling or demonstrations at a representative facility—show that state programs and standards that are different than the presumptive standards will require each designated

¹ *See e.g.*, Decl. of D. Trivedi, Commonwealth of Pennsylvania, Department of Environmental Protection, ¶17 (stating that Pennsylvania is “currently working on the development of a state plan” and “has until March 9, 2026 to develop and submit a state plan to EPA for their final approval, which at a minimum, adopts the “presumptive standards”).

² *See e.g.*, Decl. of M. Ogletree, Colorado Air Pollution Control Division (Ogletree Decl.), ¶8 (“The flexibility to develop a state plan appropriate to and effective for a state without tracking word-for-word EPA’s model rule is critical, particularly for a state like Colorado with a long history of effectively regulating oil and gas operations.”)

source to achieve emission limitations at least as stringent as the emissions limitations that would be achieved under EPA’s presumptive standards. *See id.* at 16,996. Alternatively, states can put forward a plan that aggregates emissions reductions from designated facilities within the same category to show that average emissions will be at least as stringent as EPA’s target amount of pollution reduction. *See id.* at 16,996-17,002.

Petitioners also err in claiming that the Rule specifies certain technologies and methods that states need to require existing sources to use to comply with EPA’s emission guidelines. *See* Mot. 8. The Rule makes plain that states may use alternative technologies and approaches to achieve the emission guidelines. *See, e.g.,* 89 Fed. Reg. at 17,000-17,001 (describing process for demonstrating technology equivalency). For instance, the Rule provides that states can require qualifying process-controller and pump facilities to use alternative technologies to meet EPA’s emission guidelines for those sources, *see* 89 Fed. Reg. at 17,085-17,086, and sets out multiple possible technologies that could be employed for that purpose, *id.* at 16,882, 16,884. And, with regard to the Rule’s non-numerical guidelines, such as monitoring and work practice standards under section 111(h) of the Act,³ the Rule clarifies that states can demonstrate equivalency through a

³ 42 U.S.C. 7411(h) (EPA may promulgate a “design, equipment, work practice, or operational standard” if “it is not feasible to prescribe or enforce a standard of performance”).

“qualitative” showing, *see id.* at 16,998-16,999, and specifies that EPA’s monitoring guidelines can be met through use of certain advanced methane-detection technologies, *id.* at 16,876. Indeed, Petitioners themselves acknowledge that use of EPA’s proposed control technologies is not mandatory, and that states can adopt other approaches if they follow EPA’s approval process. Mot. 8. Accordingly, the Rule promotes, rather than undermines, cooperative federalism by providing states with a blueprint (that states can choose to follow) for obtaining EPA approval of state plans and thus properly reflects the structure of Section 111(d), under which EPA “retains the primary regulatory role.” *W. Virginia*, 597 U.S. at 710.

Nor do the Rule’s presumptive standards deprive states of their authority to make source-specific determinations or to consider the remaining useful life of facilities in establishing a standard for a particular source. *See* EPA’s Response to Public Comments, EPA-HQ-OAR-2021-0317-4009, I-19-10 to 11; *see also* 40 C.F.R. § 60.24a(e). As a preliminary matter, Petitioners’ argument that EPA has effectively eliminated states’ discretion to apply remaining-useful-life considerations except where “some facilities” would need to incur “significant capital investment,” Mot. 10, is unripe for judicial review. EPA made clear that the Rule does not in any way prohibit states from attempting to make a demonstration of cost unreasonableness based on remaining-useful-life considerations. *See* 89

Fed. Reg. at 17,004 (merely observing that “the only cost factor that would *likely* be reasonable to consider in a remaining useful life determination of cost unreasonableness is whether there is a significant capital investment required”) (emphasis added). Therefore, any claim that it is impermissible for EPA to require a significant capital investment for the remaining useful life consideration to apply to certain existing oil and gas facilities must wait until (and if) EPA were to disapprove of a state plan on that basis. *See Texas v. United States*, 523 U.S. 296, 300 (1998) (“A claim is not ripe for adjudication if it rests upon contingent future events that may not occur as anticipated, or indeed may not occur at all”) (internal quotations omitted).

Further, Petitioners’ objections to the “unreasonable cost,” “physical impossibility,” or “fundamental differences” criteria in applying the remaining-useful-life concept, Mot. 9, are not properly before the Court in this case. Although EPA discussed remaining useful life in the context of existing oil and gas facilities in the proposal, the Rule did not adopt any specific provision for those sources. *See* 89 Fed. Reg. at 17,002 (explaining that “EPA is not finalizing any substantive provisions related to [remaining useful life and other factors]” in the Rule). Instead, the Rule merely cross-referenced and summarized EPA’s recently issued implementing regulations that govern remaining-useful-life requirements in state plans under Section 111(d), which are set out in 40 C.F.R. 60.24 (subpart Ba). *See*

id.; 40 C.F.R. 60.5365c (States “may apply a standard of performance to a designated facility that is less stringent than otherwise required by the emission guidelines, provided you meet the requirements specified in § 60.24a.”). EPA clarified that this summary was provided for “informational purposes” only, and its remaining-useful-life regulations were “separate and distinct from” the present rulemaking. *See* 89 Fed. Reg. at 17,002.

Therefore, Petitioners’ objections must be litigated in the pending challenge to those separate regulations, *see West Virginia v. EPA* (D.C. Cir. No. 24-1009) (challenging EPA final rule “Adoption and Submittal of State Plans for Designated Facilities; Implementing Regulations Under Clean Air Act Section 111(d),” 88 Fed. Reg. 80,480 (Nov. 17, 2023)), not in the present case, *see, e.g., C-SPAN v. FCC*, 545 F.3d 1051, 1055-1057 (D.C. Cir. 2008) (holding that a plaintiff lacks standing where injury alleged is not traceable to specific regulation challenged). Indeed, Petitioners⁴ have already stated that they intend to raise in that separate case whether the implementing regulations unlawfully “limit[] the States’ discretion, provided by Congress, to take into consideration the remaining useful life of existing sources and other factors when regulating existing sources within the States and the plans they submit to EPA pursuant to Section 111(d).” *See*

⁴ All but one of the Petitioners here are also petitioners in *West Virginia v. EPA* (D.C. Cir. No. 24-1009).

Petitioners’ Nonbinding Statement of Issues at 3, *West Virginia v. EPA*, No. 24-1009 (D.C. Cir. Feb. 20, 2024), Doc. No. 2041368.

Even if State Petitioners’ argument on remaining useful life was properly before the Court in this case, their contention that the Rule impermissibly constrains state authority under Section 111(d) is meritless. The statute does not provide states with unfettered discretion to set standards that achieve limitations less stringent than the limitations that would be achieved under EPA’s emission guidelines. Instead, Section 111(d) instructs EPA to “permit” states to consider the remaining useful life of qualifying facilities, but requires that the resulting state plans—including state decisions on less stringent standards on remaining-useful-life grounds—still be “satisfactory” based on EPA’s evaluation. *See* 42 U.S.C. § 7411(d)(1), (2)(A); *W. Virginia*, 597 U.S. at 710. On that score, as EPA explains, *see* 89 Fed. Reg. at 17,002-05, the Rule leaves room for States to establish less stringent emission standards for particular sources, where warranted, while furthering the statute’s purpose of ensuring that dangerous pollution from existing facilities is controlled.

Finally, contrary to Petitioners’ arguments, the Rule’s Super-Emitter Program,⁵ which requires owners and operators (not states) to investigate and

⁵ The Super Emitter Program establishes a process for independent entities—certified by EPA and employing technologies approved by EPA—to inform EPA

report emissions, is also fully consistent with the Clean Air Act’s statutory framework of cooperative federalism. That program is similar to other longstanding EPA programs where “citizens and other entities can report concerns about regulatory compliance.” 89 Fed. Reg. at 16,917 (describing a similar program within EPA’s Office of Enforcement and Compliance Assurance); *see also id.* at 16,877, 16916 (discussing applicability of Section 114(a), under which EPA may require owners and operators to investigate and report sources of emissions and Section 111(a), which authorizes EPA to obtain information from any person “the EPA believes may have information necessary” for the purposes of implementing the Clean Air Act). To the extent Petitioners argue that the Super-Emitter Program leaves states out of the process of addressing super-emitter events, that argument is misplaced. The Super-Emitter Program does not modify any existing state authority to monitor and respond to super-emitter events, and the Rule provides that states will be notified of, and have access to, super-emitter reports at the time of reporting. *See* 89 Fed. Reg. at 16,876-81.

B. The Rule Provides Adequate Time for State Planning and Submittal.

Petitioners further err in arguing that EPA’s 24-month timeline for state plan submittal is arbitrary and capricious. Mot. 1. Petitioners have not shown a

of significant emissions of methane (i.e., a rate of at least 100 kilograms/hour). 89 Fed. Reg. at 16,876-81.

substantial likelihood of success on the merits because EPA “articulated a satisfactory explanation” for the chosen timeline, including “a rational connection between the facts found and the choice made.” *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (citation omitted). “[A] court is not to substitute its judgment for that of the agency” and must “uphold a decision . . . if the agency’s path may reasonably be discerned.” *Id.* (internal quotations omitted).

EPA’s path to the 24-month timeline is well supported and easy to discern from the administrative record. EPA analyzed several data points to reach the Rule’s timeline requirements. For example, EPA reviewed information relating to the time required for states to submit previous plans to regulate existing facilities pursuant to Section 111(d) and Section 129 of the Act. 89 Fed. Reg. at 17,010-12. EPA did not ignore “vital comments regarding relevant factors,” Mot. 13, but rather responded to comments raising concerns about the proposed rule’s 18-month timeframe, including Petitioners’ comments regarding the demand on staff, the large number of new covered facilities, the multi-factor tests, the stakeholder consultation, and the potential need for legislative approval. 89 Fed. Reg. at 17,009-10. Based on its review of the administrative record, EPA determined that 24 months would be sufficient to accommodate the state administrative processes necessary to regulate existing oil and gas sources. *See id.* at 17,010. EPA also

concluded that 36 months would be unnecessarily long for a process that did not require emissions inventories like state plans under Section 110 of the Act, and would be unjustified given the urgency of achieving methane reductions necessary to reduce the near-term disruption of the climate system. *See* 89 Fed. Reg. at 17,010 (“Extending the state plan submittal deadline beyond 24 months to account for any and all unique state procedures would inappropriately delay reductions in emissions that have been found under CAA Section 111 to endanger health or the environment”).

Petitioners’ argument that 24 months is an unworkable timeline—and therefore arbitrary and capricious—conflates the state planning process with the implementation and enforcement process once state regulations are effective. Petitioners claim excessive demands on staff and the need for additional hiring required by the Rule. Mot. 13-14; *see also*, Decl. of M. Kennedy, Kentucky Division for Air Quality, ¶15 (alleging a need to hire new employees that include permit writers, inspectors, and emissions inventory staff); Decl. of K. Stegmann, Oklahoma Department of Environmental Quality, ¶10 (estimating increase in “the existing permitting staff as well as the compliance and enforcement staff”). But those estimates include staff and workload—such as hiring inspectors and permitting processes—that are relevant to the implementation phase of the Rule,

not the 24-month state planning phase at issue here. *See* 89 Fed. Reg. 17,010-17,012.

Petitioners also contend that the Rule “bakes in several new elements that will further slow the States’ task,” Mot. 14, without recognizing that the Rule eliminates complex requirements like emissions inventories and allows states to leverage existing state programs, which should expedite state planning. *See* 89 Fed. Reg. at 17,002; *see also* Decl. of C. Lozo, Cal. Air Resources Bd. (Lozo Decl.) ¶19; Ogletree Decl. ¶¶7, 9-10. And, while Petitioners summarily claim that the consequences of missing the 24-month deadline are “dire,” Mot. 14, they ignore that, unlike Section 110, the Rule does not subject states to sanctions for failing to submit an approvable plan by the deadline. *Compare* 42 U.S.C. § 7410(m) *with id.* § 7411.⁶

Finally, many of the Petitioners who now request a stay of the Rule submitted comments and declarations stating that 24 months *was* a feasible timeline. *See, e.g.*, EPA-HQ-OAR-2021-0317-2330 (Comment of Kentucky Division for Air Quality stating that EPA should “extend[] the deadline for state plan submissions to a minimum of 24 months after a final emission guideline is published.”); EPA-HQ-OAR-2021-0317-2157 (“Tennessee believes that 24

⁶ The Rule also provides a range of submission options to further accommodate state planners and their schedules, including partial, conditional, and parallel processing. *See* 89 Fed. Reg. at 17,013; Lozo Decl. ¶¶21-23.

months is the minimum of time required to submit a 111(d) plan that includes RULOF”); Decl. of R. Hodanbosi, Ohio Environmental Protection Agency, ¶7 (describing a proposed schedule for Ohio to submit a state plan to EPA within 18 months).

Thus, the Rule reflects EPA’s reasoned decision-making based on the comments received, its regulatory experience, and the need to mitigate climate change and protect human health. *See United Keetoowah Band of Cherokee Indians in Oklahoma v. Fed. Comm’n Comm’n*, 933 F.3d 728, 750 (D.C. Cir. 2019) (holding that an agency did not act arbitrarily when choosing a regulatory timeline because “[i]t reasonably justified the decision as a compromise between industry requests for even shorter timelines...and Tribes’ need for adequate time to review submissions”). By giving states 24 months to submit plans, EPA did not ignore “an important aspect of the problem,” *State Farm*, 463 U.S. at 43, and its decision must be upheld.

II. PETITIONERS HAVE NOT DEMONSTRATED IRREPARABLE HARM

Petitioners claim that they will suffer irreparable harm from the unrecoverable costs expended in developing state plans and the invasion of state sovereignty. Petitioners’ claims of economic harm do not justify a stay.

First, Petitioners fail to show that their purported economic harm is “both certain and great” and “imminen[t].” *Wisconsin Gas Co.*, 758 F.2d at 674. As

stated, Petitioners conflate the resources necessary for the state planning process with resources for implementation and enforcement of state regulations once they are effective. Indeed, “[w]hen the compliance timeline of 36 months is considered...that means that sources could have up to 5 years between when the [emission guidelines] are final and when they are required to fully comply with the applicable standards of performance.” 89 Fed. Reg. at 17,012. Given that compliance with the Rule’s final limits need not be achieved until 2029, Petitioners’ costs for enforcement and permitting are far from imminent.

Second, if developing a state plan or considering other compliance options could constitute irreparable harm, any cooperative federalism rule under the Clean Air Act or other similar statutes could be stayed. This would improperly transform a stay from an “extraordinary remedy” that is not a “matter of right” into a commonplace event. *Cf. Nken v. Holder*, 556 U.S. 418, 428, 434 (2009) (quotation marks omitted); *see also Freedom Holdings, Inc. v. Spitzer*, 408 F.3d 112 (2d Cir. 2005) (“ordinary compliance costs are typically insufficient to constitute irreparable harm”).

Finally, the harm asserted by Petitioners from the Rule does not align with the relief requested. Petitioners seek a stay of the Rule in its entirety, including the standards of performance for new oil and gas sources. But Petitioners’ motion rests on the alleged economic harm of reducing methane emissions from only existing

sources, Mot. 15, and does not allege any harm from the new source performance standards. Therefore, Petitioners' allegations of irreparable harm certainly do not support a stay of the entire Rule. *See Nebraska Dep't of Health & Hum. Servs. v. Dep't of Health & Hum. Servs.*, 435 F.3d 326, 330 (D.C. Cir. 2006) ("We have long held that [a]n injunction must be narrowly tailored to remedy the specific harm shown.") (internal quotations omitted).

III. A STAY WOULD HARM STATE RESPONDENT-INTERVENORS AND IS NOT IN THE PUBLIC INTEREST

Any irreparable harm to petitioners must be weighed against "harm on other interested parties" if a stay is granted. *Ambach v. Bell*, 686 F.2d 974, 979 (D.C. Cir. 1982). The Court must consider "the interests of . . . stakeholders who supported the rule and who . . . stand to suffer harm if the rule is enjoined." *Mexichem Specialty Resins, Inc. v. EPA*, 787 F.3d 544, 557 (D.C. Cir. 2015).

Here, a stay that results in delay to the Rule's deadlines to limit methane emissions from existing oil and gas sources will harm State Respondent-Intervenors. As stated, methane is a potent climate "super pollutant" and the oil and gas sector is the largest industrial emitter of methane in the United States. 89 Fed. Reg. at 16,823. For these reasons, many of State Respondent-Intervenors have long-called for EPA to regulate methane emissions from existing oil and gas

sources, and even sued EPA for unreasonably delaying the issuance of emission guidelines.⁷

After this decade-long effort, State Respondent-Intervenors will be severely harmed by continued forgone emission reductions if the Rule is stayed. State Respondent-Intervenors are currently experiencing significant climate harms that are projected to worsen without deep reductions in anthropogenic emissions of greenhouse gases. Decl. of T. Soleau, Mass. Office of Coastal Zone Mgmt. (Soleau Decl.) ¶¶7-25; Decl. of E. Fleishman, Ore. Climate Change Research Inst. (Fleishman Decl.) ¶¶7-26; Decl. of J. Chamberlin, Cal. Dept. of Parks and Recreation (Chamberlin Decl.) ¶¶ 6-15. For example, rising temperatures caused by anthropogenic greenhouse gas emissions contribute to the frequency, severity, and duration of extreme heat events and wildfires, reduced snowpack, increased drought, and warming waters. Chamberlin Decl. ¶¶11-14; Fleishman Decl. ¶¶8-20. Human-induced climate change also leads to sea level rise that submerges sovereign territory in coastal states and increases saltwater intrusion into state waters and aquifers. Chamberlin Decl. ¶¶7-9; Soleau Decl. ¶¶8-13; Fleishman Decl. ¶¶ 23. These climate impacts cause direct injuries to State Respondent-Intervenors through loss of state coastline and coastal property; damages to state parks, public lands, and cultural resources; and increased expenditure of funds on

⁷ See *New York, et al. v. Pruitt, et al.*, No. 18-773 (D.D.C. filed Apr. 5, 2018).

drought, wildfire, storm, and flood preparation, protection of public health, and strengthening and repairing infrastructure impacted by extreme weather.

Chamberlin Decl. ¶¶9-14; Soleau Decl. ¶¶16-20; Fleishman Decl. ¶¶12-14, 24-26.

These impacts will only get worse, and their costs will mount dramatically, if greenhouse gas emissions continue unabated or increase. Chamberlin Decl. ¶15;

Soleau Decl. ¶7.

In addition to climate harm, a stay of the Rule would delay significant health and environmental benefits from a reduction in volatile organic compounds and other hazardous pollution that worsens our air quality and harms our residents' health, especially in overburdened communities. *See* 89 Fed. Reg. at 16,836-41.

Emissions of volatile organic compounds from the oil and gas sector also contribute to nonattainment of national ambient air quality standards for ozone.

RIA at 3-26 (“Recent observational and modeling studies have found that [volatile organic compound] emissions from oil and natural gas operations can impact ozone levels”). A stay of the Rule would delay reductions in smog-forming volatile organic compounds thereby impeding states' abilities to meet the obligations under Section 110 of Act.

A stay of the Rule would also create regulatory uncertainty around the process of state plan developments, making it more difficult for state planners in State Respondent-Intervenors and elsewhere to move state plans forward. Lozo

Decl. ¶¶25. For example, a stay of the Rule could push compliance planning beyond the planning period for the state-level rulemakings. *Id.* Therefore, states would have to consider moving forward with state regulatory development without the benefit of EPA regulatory decisions regarding state determinations, thereby complicating other state processes. Lozo Decl. ¶¶25-26.

Finally, a stay would cause regulatory uncertainty for designated facilities that are subject to section 136 of the Act. Beginning this calendar year, EPA will impose and collect a waste emissions charge on methane emissions that exceed statutory thresholds from owners and operators of high-emitting oil and gas facilities.⁸ Section 136(f)(6) provides exemptions to the waste emissions charge for facilities that are subject to and in compliance with emissions requirements promulgated under the Rule. But exemption determinations may be made only after all state and federal plans pursuant to Section 111(d), in all states, are approved and in effect. 89 Fed. Reg. 5318, 5337 (Jan. 26, 2024). For example, because the regulatory compliance exemption to the waste emissions charge is linked to EPA approval of Section 111(d) state or federal plans, a stay of the Rule—which could delay the adoption and approval of such plans—would result in

⁸ The waste emissions charge amounts to a fee of \$900 per metric ton of methane emissions exceeding the threshold, increasing to \$1,200 per metric ton of methane in 2025, and to \$1,500 per metric ton of methane in 2026 and each year after. 42 U.S.C. § 7436(e), (g).

uncertainty in the oil and gas industry as to whether and when the methane fee exemption will be available to applicable facilities.

CONCLUSION

For these reasons, Petitioner's motion to stay the Rule should be denied.

Dated: May 6, 2024

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I hereby certify that the opposition complies with Fed. R. App. P. 27(d)(2)(A) because it contains 5,049 words, excluding the parts of the motion exempted under Fed. R. App. P. 32(f), according to the count of Microsoft Word.

I further certify that this filing complies with the requirements of Fed. R. App. P. 27(d)(1)(E) because it has been prepared in 14-point Times New Roman, a proportionally spaced font.

Dated: May 6, 2024

/s/ Kavita Lesser
KAVITA LESSER

CERTIFICATE OF SERVICE

I hereby certify that the foregoing opposition was filed on May 6, 2024 with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit through the Court's CM/ECF system and that, therefore, service was accomplished upon counsel of record by the Court's system.

Dated: May 6, 2024

/s/ Kavita Lesser
KAVITA LESSER

ORAL ARGUMENT NOT SCHEDULED

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

STATE OF OKLAHOMA, et al.,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, et al.

Respondents.

No. 24-1059

(and consolidated cases)

On Petition for Review of Final Action of the
United States Environmental Protection Agency

**APPENDIX TO STATE RESPONDENT-INTERVENORS'
OPPOSITION TO PETITIONERS' MOTION TO STAY**

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6	Declaration of Virendra Trivedi, Pennsylvania Department of Environmental Protection

Attachment 1

Declaration of Jay Chamberlin, California Department of Parks and Recreation

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

STATE OF TEXAS, et al.,

Petitioners,

v.

UNITED STATES
ENVIRONMENTAL PROTECTION
AGENCY, et al.,

Respondents.

No. 24-1054

(and consolidated cases)

DECLARATION OF JAY CHAMBERLIN

I, Jay Chamberlin, state and declare as follows:

1. I submit this declaration in support of the State of California’s opposition to the Petitioners’ motion to stay the final rule of the United States Environmental Protection Agency (“EPA”), the “Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review,” published at 89 Fed. Reg. 16,820 (Mar. 8, 2024) (“Final Rule”). I make this declaration of my own personal knowledge, unless otherwise indicated.

2. I am the Chief of the Natural Resources Division of the California Department of Parks and Recreation (“Department”), a position I have held since

2010. I have worked in the conservation field for more than 30 years. I received a Masters of Science in Natural Resources and Environment from the University of Michigan in 1998. Prior to my current position, I served as Environmental Program Manager at the California Department of Water Resources from 2008 to 2010, and Deputy Assistant Secretary at the California Natural Resources Agency from 2005 to 2008. I have also worked as a consultant to the Ecosystem Restoration Program for the California Bay-Delta Authority, and as Policy Manager for the Pacific Forest Trust, where my work focused on climate projects and policies.

3. I regularly give presentations on climate change and its impacts to the California State Park System, and on plans, management practices, and policies for addressing those impacts. I have given such presentations to professionals, students, and other audiences, including, for example, the California State Assembly's Select Committee on Sea Level Rise and the California Economy. I have also given a series of climate change presentations and updates (in January 2018, September 2018, and May 2019) to the California State Parks and Recreation Commission, the body with authority for guiding policy and planning for the State Park System.

4. The Department manages the California State Park System, which consists of 280 park units and approximately 1.6 million acres of land. Parks are located in every bioregion of California, and the State Park System protects some of the most significant native ecosystems in California, including old growth forests, grasslands, coastal dunes and prairies, oak woodlands, alpine lakes, and roughly one-

quarter of the California coastline. Many of California's rare and endangered species have habitat on state park land. The State Park System also protects the largest assemblage of cultural resources in California, including historic adobe buildings, California Missions, and archaeological sites and much more. The State Park System receives in excess of 80,000,000 visitors per year, and it is the primary destination for shoreline recreation in California.

5. I am familiar with scientific studies and agency reports that summarize observed and modeled data related to global climate change and with evidence of the influence that climate change is having on resources in the State Park System. My knowledge is based on my ongoing review of the current scientific literature, participation in interagency climate-focused working groups, attendance and participation at professional conferences, trainings, and workshops, and my work for the Department.

6. For years, Department staff have been engaged in active management, documentation, and monitoring of resource conditions throughout the State Park System. Many of the specific threats to biological diversity and native species that have emerged in recent years are attributable to, or compounded by, the influence of climate change. Climate-influenced impacts on State Park System resources include accelerated coastal erosion, the spread of pests and pathogens (such as bark beetles), changes in phenology (the timing of seasonal natural phenomena such as blossoms on trees or flowers), changes to wildlife habitat and behavior, increases in the size,

frequency and severity of wildfires. Other predicted changes – such as changes to the winter snowpack in the Sierra Nevada range, increased temperatures (including higher low temperatures) – also appear to be happening. These changes in natural systems due to climate change damage the land, native plants, and wildlife that are the primary natural resources of the State Park System. In the course of my work, I have reviewed information and reports by the State of California, Department and other agencies concerning these phenomena, and have been involved in developing plans, programs, and restoration projects that address these impacts.

7. Scientific models of global climate change, which link the buildup of greenhouse gases to increased global temperatures, predict that by the year 2100 the average annual maximum daily temperature in California will increase by 5.6 to 8.8 degrees Fahrenheit. Scientific studies and models further predict that by 2100, as a result of increased temperatures caused by greenhouse gas emissions—and consequent thermal expansion and glacial ice melt—mean sea levels along the coast will rise between 1 and 7 feet, greatly increasing wave run up (the upper level reached by a wave on a beach) and storm surges. Due to uncertainty in the models, actual mean sea level rise could well exceed the predicted levels by considerable margins. Also, sea level rise will vary by location, and certain areas could experience sea levels that exceed the predicted mean levels.

8. Based upon my professional experience and knowledge of California's State Park System, if the predicted changes in temperature, precipitation, and sea level

continue to occur, they would continue to have significant adverse and costly impacts on the State Park System, including but not limited to those I summarize below. Additional emissions of greenhouse gases will continue to drive climate change and worsen these impacts in the future.

9. Rising sea levels will drastically reduce the amount of beach available for shorebirds, including threatened and endangered species. In fact, many of California's beaches, including many in the State Park System, such as Crystal Cove in Orange County, are narrow bands of sand backed by steep cliffs. At predicted rates of sea level rise, as many as 67% of Southern California Beaches – including the beaches at dozens of state park units – will be lost by 2100. Also, any additional rise in sea level will affect the salinity, temperature, and hydrology in California's many estuaries and lagoons, thereby impacting the aquatic life—including rare, threatened and endangered fish—that rely on estuaries for breeding or rearing. In addition, sea level rise threatens infrastructure in the more than 100 coastal units of the State Park System. Preliminary modeling indicates 5 feet of sea level rise and a 100-year storm would result in the inundation of 593 structures, 150 acres of parking lots, 93 campgrounds and day-use areas, and 65 miles of access roads at coastal state park units (and this estimate does not include underground infrastructure, bluff erosion, and archaeological losses). The reduced or destroyed beaches, coastal estuaries, lagoons, and wetlands and the destruction of other fish and wildlife habitats are material impacts to State trust resources. Moreover, damaged infrastructure will also

negatively impact the ability of visitors to access the coast, another material impact to the purpose of State Beaches to provide for recreational access to the coast. Finally, sea level rise will negatively impact the balance of payments of the State—as revenues from visitors may decline even as costs to maintain, restore, and protect park resources and facilities increase. These costs are already being incurred as winter storm damage in January 2023 impacted dozens of coastal state park units and inflicted over \$200 million in damages.

10. In addition, the California State Park System includes many important cultural resources, including archeological and historic sites, such as Native American sites, 18th century missions, historic lighthouses and piers, and buildings, including historic campgrounds and other sites constructed by the Civilian Conservation Corps. These resources are irreplaceable, and the protection or documentation of cultural resources that would be inundated by sea level rise would be very expensive. For instance, even a small rise in sea level will erode or inundate many of the State Park System’s ancient shell middens. These cultural resources, which contain remnants from California’s earliest human residents, date back thousands of years and would be permanently lost for their descendants and for visitors and researchers as well.

11. Global climate change models in combination with other predictive studies also suggest that wildfires will increase in size, frequency and severity, with a 77 percent increase in average area burned by 2100. The State’s recent experiences concerning wildfires are generally consistent with these predictions. In 2021, the

highest temperature in recorded human history was recorded in California, at Death Valley National Park, exceeding the previous record set in the same location in 2020. Over the last 40 years, California's fire season has increased by an estimated 75 days—and in some places in the State the fire season is nearly year-round. Eighteen of the 20 largest wildfires in the State's recorded history have occurred since 2000, with 13 of those occurring since 2010.

12. Increases in the frequency and severity of wildfires will have a significant impact on the State Park System. The Department and its allied agencies, including the California Department of Forestry and Fire Protection, currently expend significant resources both to protect park infrastructure and natural and cultural resources from wildfires, and to prevent these fires. Growing wildfire activity also increases the risk that irreplaceable resources will be lost, including historic structures. Over the last 15 years, numerous state parks have been impacted by wildfires, and the increasing frequency of wildfires has become a more important problem for the State Park System. In 2020, the wildfires that collectively burned more acres of California than at any time since fire records have been kept burned more than 115,000 acres of the State Park System across 22 State Park units. In Big Basin Redwoods State Park – California's first state park – the entire park headquarters, including buildings that were designated national historic landmarks, were completely destroyed during the CZU complex fires in August of 2020. The old growth redwood forest is expected to recover but old growth trees and associated wildlife that are by definition irreplaceable

resources were also lost. Previously, the October 2017 Wine Country fires in Napa and Sonoma Counties burned through several state parks, including Trione-Annadel State Park, Sugarloaf Ridge State Park, and Robert Louis Stevenson State Historic Park, and threatened Jack London State Historic Park, while the 2018 Woolsey Fire burned through several state parks including Malibu Creek State Park, Leo Carrillo State Park, and parts of Point Mugu State Park.

13. Observed changes, along with global climate change models, also suggest that coastal fog declines of about 33% observed in recent decades could accelerate due to greenhouse gas-driven warming and changed ocean circulation. Diminished fog would have a severe and damaging impact on natural forest types that are dependent upon fog, including the endangered Torrey pine, and rare pines such as the native Monterey and Bishop pines, and the Coast redwood. All four of these species are protected in the State Park System. In addition to their ecological importance, these forest types draw many visitors to the State Park System, and a decline in these forests would constitute a critical impact on the natural resources of the State Park System and would result in fewer visitors and a loss of revenue to the Department.

14. The Department also manages several parks in winter snow areas, as well as the Sno-Park Program for California, which provides the public roadside access to winter sports recreation. Global climate change studies predict reductions in winter-spring snowpack, which would result in loss of recreational opportunities and

increased flooding downstream, along with operational challenges and associated costs at reservoir parks. It may also reduce snow access and revenues associated with the Sno-Park Program.

15. According to EPA, the Final Rule will result in the reduction of an estimated 58 million tons of methane, a potent greenhouse gas, by 2038. 89 Fed. Reg. at 16,864. While significant and unavoidable impacts from climate change are already impacting the resources of the State Park System as summarized above, the most extreme impacts of climate change on the State Park System likely depend on current and future greenhouse gas emissions and measures taken to reduce those emissions. A stay of the Final Rule will impair and delay state-level and national-level efforts to reduce greenhouse gas emissions. Thus, these emissions will likely accumulate in larger quantities in the atmosphere, resulting in increased climate risk and climate change impacts to the State Park System that I have described in this declaration.

I state under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge and belief.

Executed on April 25, 2024 in SACRAMENTO, California.



JAY CHAMBERLIN

Attachment 2

Declaration of Erica Fleishman, Oregon Climate Change Research Institute

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

STATE OF OKLAHOMA, *et al.*,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, *et al.*,

Respondent.

No. 24-1059 and
consolidated case

DECLARATION OF ERICA FLEISHMAN

I, Erica Fleishman, declare as follows:

1. I serve as director of the Oregon Climate Change Research Institute (OCCRI), which is housed at the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University.
2. The purpose of this declaration is to briefly describe the serious harms that climate change, caused in part by methane emissions from new and existing sources in the oil and natural gas sector, is causing and will continue to cause in Oregon. These harms include but are not limited to adverse effects on infrastructure, public health, and native vegetation, and will add to the state's expenses. The atmospheric concentration of methane has increased by more than 150% since the start of the Industrial Revolution. Net emissions of methane, of which 51–65% are produced by human activity (Canadell et al. 2021¹), account for about 16% of

¹ Canadell, J.G., et al. 2021. Global carbon and other biogeochemical cycles and feedbacks. Pages 673–816 in V. Masson-Delmotte et al., editors. Climate change 2021: the physical science basis. Contribution of Working

climate change since the Industrial Revolution (Forster et al. 2021²). The concentration of methane in the atmosphere, currently more than 1900 parts per billion (Gulev et al. 2021³), is much lower than that of carbon dioxide. However, each molecule of methane traps about 28 times more heat than each molecule of carbon dioxide over 100 years. Methane in the atmosphere persists for about 12 years (Smith et al. 2021⁴). Among human sources of methane, agriculture (for example, rice farming and digestion and excretion by livestock) is the greatest contributor, followed closely by production and transportation of oil, natural gas, coal, and bioenergy (IEA 2023⁵).

3. I am submitting this declaration in support of the States' opposition to petitioners' motion to stay in *Oklahoma et al. v. U.S. Environmental Protection Agency*, No. 24-1059, in support of the U.S. Environmental Protection Agency's (EPA) final rule, *Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*, 89 Fed. Reg. 16,820 (Mar. 8, 2024). I make this declaration on the basis of my own personal knowledge, unless otherwise indicated.

Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom, and New York.
www.ipcc.ch/report/ar6/wg1/chapter/chapter-5/.

² Forster, P.M., et al. 2021. The Earth's energy budget, climate feedbacks, and climate sensitivity. Pages 923–1054 in V. Masson-Delmotte et al., editors. *Climate change 2021: the physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom, and New York.
www.ipcc.ch/report/ar6/wg1/chapter/chapter-7/.

³ Gulev, S.K., et al. 2021. Changing state of the climate system. Pages 287–422 in V. Masson-Delmotte et al., editors. *Climate change 2021: the physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom, and New York. www.ipcc.ch/report/ar6/wg1/chapter/chapter-2/.

⁴ Smith, C., Z.R.J. Nicholls, K. Armour, W. Collins, P. Forster, M. Meinshausen, M.D. Palmer, and M. Watanabe. 2021. The Earth's energy budget, climate feedbacks and climate sensitivity supplementary material. Pages 1–35 in V. Masson-Delmotte et al., editors. *Climate change 2021: the physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom, and New York.
www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07_SM.pdf.

⁵ IEA (International Energy Agency). 2023. *Global methane tracker 2023*. International Energy Agency, Paris.
www.iea.org/reports/global-methane-tracker-2023.

PERSONAL BACKGROUND AND QUALIFICATIONS

4. I received a BS and MS in Biological Sciences from Stanford University in 1991 and 1992, respectively, and a PhD in Ecology, Evolution, and Conservation Biology from University of Nevada, Reno in 1997. I have more than 30 years of experience in assessing the effects of climate and other types of environmental variability, extremes, and change on natural and human-dominated ecosystems in the western United States. Since 2012 I have served as a co-principal investigator of the Southwest Climate Adaptation Science Center, one of eight such regional centers across the United States. These centers develop data and tools to address the climate change-related information needs of managers of species, ecosystems, and the human communities they support.
5. OCCRI was created in 2007 by the Oregon State Legislature under House Bill 3543. Among OCCRI's charges from the Legislature is "assess[ment of]... the state of climate change science, including biological, physical and social science, as it relates to Oregon and the likely effects of climate change on the state." The *Sixth Oregon Climate Assessment* (<https://doi.org/10.5399/osu/1161>), which was authored by OCCRI scientists and collaborators, was released in January 2023. OCCRI scientists also contributed to the Northwest chapter of the Fifth National Climate Assessment (<https://www.globalchange.gov/nca5>) and regularly support the Oregon Department of Land Conservation and Development in its production of state- and county-level natural hazard mitigation plans (e.g., <https://blogs.oregonstate.edu/occricri/projects/dlcd/>). These and previous Oregon Climate Assessment reports, other publications in the peer-reviewed literature, and a limited amount of personal communication from agencies of the State of Oregon form the basis for this declaration.

6. I am making this declaration in my personal capacity on the basis of my expertise, experience, and training, and not on behalf of Oregon State University.

CLIMATE CHANGE IN OREGON AND ASSOCIATED RISKS

7. Global increases in concentrations of greenhouse gases are changing the climate in Oregon.

Not only are average values of annual temperature and, in some cases, precipitation and relative humidity changing; but the incidence of extreme heat, precipitation, and other forms of extreme climate is increasing; and climate is becoming less predictable. Anthropogenic climate change also is contributing to sea-level rise. As sea level rises, coastal storms and high tides are likely to increase the frequency and severity of flooding along the Oregon coastline. For example, by the year 2050, relative sea level at Charleston, Oregon, is highly likely to rise by 0.5–1.8 feet, and by the year 2100, at least one flood is likely to exceed 4 feet above mean high tide. Many of the consequences of climate change also directly and indirectly threaten Oregon residents' physical and mental health and their economic and social well-being. As explained further below, because Oregon bears a significant share of health care costs incurred in the state, negative health outcomes for Oregonians translate to negative impacts on state programs and resources. Disasters may result not only from isolated events, but also from recurrent events that individually are not extreme, but degrade a community's infrastructure (Field et al. 2012⁶).

8. The Pacific Northwest has warmed by about 2°F since 1900. Average temperatures in

Oregon are projected to increase by another 5–8.2°F by the 2080s, depending on the global

⁶ Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Medgley, editors. 2012. Managing the risks of extreme events and disasters to advance climate change adaptation. A special report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom.

level of greenhouse gas emissions. Hot days and warm nights are becoming more frequent as a result of anthropogenic climate change. A common definition of an extremely warm day in the Pacific Northwest is a day on which the maximum temperature is 90°F or above. By this definition, the number of extremely warm days increased significantly across Oregon since 1951, and the number of such days in 2021 and 2022 was among the greatest on record in the state. Extreme heat poses risk to human health, especially among older adults, those who work or live outdoors, have underlying health conditions, and are economically disadvantaged, and can stress local emergency healthcare systems. Although dangerously warm temperatures are less common in Oregon than in many other parts of the United States, housing units in Oregon are less likely to use air conditioning than housing units in 80% of other states (USEIA 2023⁷), leaving Oregonians at greater risk of negative health outcomes from extreme heat. For example, of the 69 people in Multnomah County, Oregon, whose deaths were directly attributable to heat exposure during 2021 and who died during an extraordinary heat wave in June, a maximum of three had a functional air conditioning unit (Burlotos et al. 2023⁸). As noted below, there also is evidence that the incidence of some infectious diseases, such as Lyme disease, West Nile virus, and salmonella, increase as average temperatures increase or during heat waves.

9. Oregon's annual snowpack is decreasing as the proportion of precipitation falling as rain increases and snowmelt occurs earlier. For example, from 1982–2017, peak snow water equivalent on the east side of the central Cascade Range declined by more than 70%.

⁷ USEIA (U.S. Energy Information Administration). 2023. Highlights for air conditioning in U.S. homes by state, 2020. www.eia.gov/consumption/residential/data/2020/state/pdf/State%20Air%20Conditioning.pdf.

⁸ Burlotos, A., C. Dresser, and V. Shandas. 2023. Portland's response to the western North American heatwave: a brief report. *Disaster Medicine and Public Health Preparedness* 17(e522):1–4. doi: 10.1017/dmp.2023.184.

Snowmelt trended earlier in all mountain regions of the state, with maximum regional changes of 16 days earlier per decade. As a result, autumn and winter runoff is projected to increase across Oregon, increasing the probability of seasonal flooding and landslides that can threaten human lives, private property, and infrastructure such as roads and other transportation corridors (see below). Additionally, the runoff associated with extreme precipitation may introduce human-made or naturally occurring toxins into the domestic water supply. Spring and summer runoff are likely to decrease, and vulnerability to water shortages to increase, in western and northeastern Oregon. For example, in the Columbia River basin, snowmelt runoff accounts for about 25% of total surface water allocated to irrigation (Qin et al. 2020⁹). Decreases in water availability may decrease the quality and quantity of water available for domestic and public consumption and use, including but not limited to drinking, cooking, washing, and bathing.

10. Projected changes in climate in both the short term and the long term contribute to changes in fire dynamics in Oregon and beyond. Across the United States, changes in fire dynamics are leading to losses of human life and property, and to substantial financial costs.

Nationwide, the direct damages associated with wildfires in 2017 and 2018 were greater than \$40 billion (Smith 2019¹⁰). Shifts in fire dynamics often reflect interactions among historic fire suppression; changes in vegetation structure and composition, including the introduction of non-native invasive grasses that are highly flammable (Brooks et al. 2004¹¹,

⁹ Qin, Y., J.T. Abatzoglou, S. Siebert, L.S. Huning, A. AghaKouchak, J.S. Makin, C. Hong, D. Tong, S.J. Davis, and N.D. Mueller. 2020. Agricultural risks from changing snowmelt. *Nature Climate Change* 10:459–465.

¹⁰ Smith, A.B. 2019. 2018's billion dollar disasters in context. www.climate.gov/news-features/blogs/beyond-data/2018s-billion-dollar-disasters-context, accessed December 2019.

¹¹ Brooks, M.L., C.M. D'Antonio, D.M. Richardson, J.B. Grace, J.E. Keeley, J.M. DiTomaso, R.J. Hobbs, M. Pellant, and D. Pyke. 2004. Effects of invasive alien plants on fire regimes. *BioScience* 54:677–688.

Fusco et al. 2019¹²), the increasing role of humans in igniting wildfires (Balch et al. 2017¹³), and changes in climate and fire weather.

11. In the Pacific Northwest, the duration of the fire season more than quadrupled, from an average of 23 days to an average of 116 days, from the 1970s to the 2000s. Across the western United States, roughly half of the observed increase in fuel aridity and more than 16,000 square miles of burned area from 1984–2015 were attributed to human-caused climate change.
12. As climate, fuel loads, and associated fire dynamics change, the cost of fire suppression in Oregon is increasing. The average number of acres that burned in Oregon increased from 11,600 from 1990–1999 to 41,700 from 2010–2019 (GCWR 2019¹⁴). Prior to 2013, the Oregon Department of Forestry rarely required state General Fund dollars for fire suppression on lands under its jurisdiction. Since 2013, however, the Department has required General Fund support annually; the annual cost to the General Fund for suppressing large fires has been approximately \$20 million.
13. The State of Oregon owns forests in which the frequency and size of wildfires is likely to increase. The Oregon Department of Forestry noted that wildfires in the Santiam State Forest during September 2020, which burned over 16,000 acres, not only had ecological effects but also damaged recreation sites and roads¹⁵. The area burned in Oregon during 2020 (approximately 1.2 million acres) was among the largest in the reliable historic record.

¹² Fusco, E.J., J.T. Finn, J.K. Balch, R.C. Nagy, and B.A. Bradley. 2019. Invasive grasses increase fire occurrence and frequency across US ecoregions. *Proceedings of the National Academy of Sciences of the United States* 116:23594–23599.

¹³ Balch, J.K., B.A. Bradley, J.T. Abatzoglou, R.C. Nagy, E.J. Fusco, and A.L. Mahood. 2017. Human-started wildfires expand the fire niche across the United States. *Proceedings of the National Academy of Sciences of the United States* 114:2946–2951.

¹⁴ [Oregon] Governor’s Council on Wildfire Response (GCWR), Report and Recommendations, November 2019. www.oregon.gov/gov/policy/Documents/FullWFCReport_2019.pdf.

¹⁵ www.oregon.gov/odf/recreation/Pages/santiam-state-forest.aspx

14. Oregon incurs diverse costs from wildfires. The estimated cost to the state of completed and projected cleanup efforts in the wake of the September 2020 fires, including removal of ash, debris, hazardous materials, and trees that threatened to impede the roadway, is \$75.63 million from the State Highway Fund and \$75.75 million from the State General Fund¹⁶. These direct costs to the State will not be reimbursed by the Federal Emergency Management Agency.
15. The human costs of wildfires are considerable, and also result in costs to the state. For example, high levels of fine particulate matter are associated with respiratory and cardiovascular illness in humans, especially in individuals with pre-existing medical conditions, and with reductions in outdoor exercise (Evans 2019¹⁷, Chen et al. 2021¹⁸). To illustrate, on a peak smoke day during the 2017 Eagle Creek fire, the Oregon Health Authority reported a 20% increase in emergency room visits for respiratory symptoms in the Portland metropolitan region (OHA 2017¹⁹). Short-term exposure to fine particulate matter from smoke also has been linked to increases in violent crime, especially assaults (Burkhardt et al. 2019²⁰). The number of days on which the air quality index (AQI) was poor for all groups (AQI categories unhealthy, very unhealthy, or hazardous) in many Oregon municipalities as a result of wildfire smoke increased considerably in recent years

¹⁶ F. Reading, Oregon Debris Management Task Force, Oregon Department of Transportation, personal communication, 16 December 2021.

¹⁷ Evans, G.W. 2019. Projected behavioral impacts of global climate change. *Annual Review of Psychology* 70:449–474.

¹⁸ Chen, H., J.M. Samet, P.A. Bromberg, and H. Tong. 2021. Cardiovascular health impacts of wildfire smoke exposure. *Particle and Fibre Toxicology* 18:2. doi: 10.1186/s12989-020-00394-8.

¹⁹ OHA (Oregon Health Authority). 2017. Statewide fire activation surveillance report (090517-090617).

²⁰ Burkhardt, J., J. Bayham, A. Wilson, J. Berman, K. O'Dell, B. Ford, E.V. Fischer, and J.R. Pierce. 2019. The relationship between air pollution and violent crime across the United States. *Journal of Environmental Economics and Policy*. doi: 10.1080/21606544.2019.1630014.

(DEQ 2018²¹). For example, the AQI in Medford was poor due to wildfire smoke for a total of 28 days from 1985–2014, primarily in 1987 (16 days). By contrast, from 2015–2018, Medford’s AQI was poor due to wildfire smoke for a total of 46 days: 7 in 2015, 14 in 2017, and 25 in 2018. Portland’s AQI was not affected by wildfire smoke from 1985–2014, but smoke resulted in a poor AQI in the city on five days from 2015–2018. Similarly, during extreme wildfires in September 2020, the AQI in Portland, Oregon, reached levels higher (indicating high risks to human health) than those in any other major city worldwide (IQAir 2020²²). The AQI in Portland was considered hazardous for three consecutive days, and unhealthy for seven consecutive days (IQAIR 2020). During that period, levels of fine particulate matter in smaller cities in Oregon, such as Applegate Valley and Cave Junction, sometimes exceeded those in Portland (AirNow 2020²³). Moreover, smoke-driven reductions in air quality in Oregon are affecting regional economies. For example, *The New York Times* reported that in 2018, the Oregon Shakespeare Festival in Ashland estimated losses of \$2 million as a result of cancelled performances and reduced attendance due to wildfire smoke²⁴. During the 2020 wildfire season, 62% of Oregon wineries reported not only unhealthy air that delayed harvest, but impacts such as ash on grape skins and reduced sunlight that affected the size of grape clusters. Eighteen percent of Oregon wineries reported smoke damage to their wines, with the majority of red wine grape varieties

²¹ State of Oregon Department of Environmental Quality (DEQ). 2018. Wildfire smoke trends and associated health risks, Bend, Klamath Falls, Medford and Portland – 1985 to 2018.

<https://www.oregon.gov/deq/FilterDocs/smoketrends.pdf>, accessed March 2019.

²² <https://www.iqair.com/us/blog/wildfires/washington-oregon-fires-choke-northwest>.

²³ <https://www.airnow.gov/state/?name=oregon>.

²⁴ The New York Times. 24 August 2018. Wildfire smoke disrupts Oregon Shakespeare Festival. www.nytimes.com/2018/08/24/theater/oregon-shakespeare-festival-wildfire-smoke.html.

discarded by producers or not harvested (IPRE 2021²⁵).

16. Social vulnerability, as defined by the Centers for Disease Control and Prevention on the basis of social and economic status, household composition and disability, minority status and language, and housing type and transportation (ATSDR 2020²⁶), affects the ability of individuals and communities to mitigate and adapt to wildfire. In Oregon from 2000 through 2021, 45.4% of the population within wildfire perimeters was considered highly socially vulnerable, as compared with 23.5% of Oregon's overall population (Rad et al. 2023²⁷).
17. The Oregon Health Authority (OHA), drawing on data on air quality, emergency department visits, and hospitalizations in areas affected by wildfire smoke, can estimate certain health care costs for diseases and conditions known to be caused or exacerbated by exposure to particulate matter. Wildfires were estimated to account for up to 50 percent of emissions of fine particulate matter in the western United States during the 2010s (Burke et al. 2021²⁸).
18. The OHA estimates that smoke from the Chetco Bar Fire and other wildfires that affected central and southwestern Oregon (1.1 million residents) during two months in late summer 2017 resulted in 207 excess emergency department visits and 18 excess hospitalizations for asthma, at a cost of \$556,000.

²⁵ IPRE (Institute for Policy Research and Engagement). 2021. Impacts to Oregon's wine industry: Covid-19 and the 2020 wildfires. University of Oregon, Eugene, Oregon. <https://industry.oregonwine.org/wp-content/uploads/sites/2/2020-Vineyard-and-Winery-Report-COVID-and-Wildfire-Impacts-09-07-21.pdf>.

²⁶ ATSDR (Agency for Toxic Substances and Disease Registry). 2020. CDC / ATSDR Social Vulnerability Index. www.atsdr.cdc.gov/placeandhealth/svi/index.html.

²⁷ Rad, A.M., J.T. Abatzoglou, E. Fleishman, M.H. Mockrin, V.C. Radeloff, Y. Pourmohamad, M. Cattau, J.M. Johnson, P. Higuera, N.J. Nauslar, and M. Sadegh. 2023. Social vulnerability of the people exposed to wildfires in U.S. West Coast states. *Science Advances* 9:eadh4615. doi: 10.1126/sciadv.adh4615.

²⁸ Burke, M., A. Driscoll, S. Heft-Neal, J. Xue, J. Burney, and M. Wara. 2021. The changing risk and burden of wildfire in the United States. *Proceedings of the National Academy of Sciences* 118:e2011048118. doi: 10.1073/pnas.2011048118.

19. The OHA estimates that smoke from the 2017 Eagle Creek Fire in the Columbia River Gorge (2 million residents in seven counties) resulted in 96 excess emergency department visits and 9 excess hospitalizations for asthma, at a cost of \$529,000.
20. Climate change, including the effects of wildfires that are driven in part by climate change, is expected to have continuing negative effects on the health of Oregonians. The cost of those negative effects, in turn, will increase burdens on the state's budget, with negative consequences for state programs. The OHA, relying primarily on the Oregon All Payer Claims Database, estimates that at least 13% of all Oregon health care costs are borne by the state (including, but not limited to, Oregon's state share of Medicaid costs and costs of health care for State employees). In addition to the health effects of wildfire smoke and extreme heat, climate change may increase Oregonians' exposure to vector-borne diseases. For example, above-average temperatures were associated with expansion of West Nile virus from the eastern to the western United States (Reisen et al. 2006²⁹). As summer becomes longer and warmer, the incidence of West Nile virus, and other viral infections that cause brain inflammation, may increase (Bethel et al. 2013³⁰). Additionally, as water temperatures in oceans and estuaries in the Northwest increase, so may the incidence of *Vibrio parahaemolyticus* infections, which are caused by consuming raw oysters or other shellfish that are infected with the bacterium (Bethel et al. 2013). Exposure to and incidence of other water-borne diseases, especially cryptosporidiosis, may increase as precipitation and flooding in Oregon increase (Bethel et al. 2013). High flows can carry cattle feces into

²⁹ Reisen, W.K., Y. Fang, and V.M. Martinez. 2006. Effects of temperature on the transmission of West Nile virus by *Culex tarsalis* (Diptera: Culicidae). *Journal of Medical Entomology* 43:309–317.

³⁰ Bethel, J., S. Ranzoni, and S.M. Capalbo. 2013. Human health: impacts and adaptation. Pages 181–206 in Dalton, M., P.W. Mote, and A.K. Snover. 2013. *Climate change in the Northwest: implications for our landscapes, waters, and communities*. Island Press, Washington, D.C.

recreational waters and sources of drinking water, resulting in cryptosporidiosis and other gastrointestinal illnesses in humans.

21. Climate change is likely to reduce many populations' access to sufficient and nutritious food (Bethel et al. 2013), which in turn poses risks to physical and mental health, maternal health, and child development (Schnitter and Berry 2019³¹). Mechanisms by which food security may be affected include droughts and floods within or beyond the region; both can affect agricultural production, and floods and landslides can affect the infrastructure used to transport food. Individuals, populations, and communities that have low incomes, are relatively isolated, or are in poor health may be especially vulnerable to climate change-induced food insecurity. Given the role that certain foods play in tribal communities, not only health but cultural values and identity are threatened by some elements of climate change and related food access (Quaempts et al. 2018³²).

22. Mental health also is likely to be adversely affected by climate change. For example, extreme events that are caused in part by climate change, such as wildfires or floods, can displace people from their homes either temporarily or permanently and degrade social and economic infrastructure (Bethel et al. 2013). Similar effects on social and economic systems may result from recurrent events even if the individual events are not extreme (Field et al. 2012³³). Heat waves have been associated with increases in violent criminal activity during

³¹ Schnitter, R., and P. Berry. 2019. The climate change, food security, and human health nexus in Canada: a framework to protect population health. *International Journal of Environmental Research and Public Health* 16:2531. doi:10.3390/ijerph16142531.

³² Quaempts, E.J., K.L. Jones, S.J. O'Daniel, T.J. Beechie, and G.C. Poole. 2018. Aligning environmental management with ecosystem resilience: a First Foods example from the Confederated Tribes of the Umatilla Indian Reservation, Oregon, USA. *Ecology and Society* 23(2):29. doi:10.5751/ES-10080-23029.

³³ Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Medgley, editors. 2012. *Managing the risks of extreme events and disasters to advance climate change adaptation. A special report of Working Groups I and II of the Intergovernmental Panel on Climate Change.* Cambridge University Press, Cambridge, United Kingdom.

the following week in jurisdictions across the United States (Jacob et al. 2007³⁴), and increases in larceny and violent crime are projected to increase as maximum monthly temperatures increase (Ranson 2014³⁵).

23. Rising sea levels, increases in ocean temperature, coastal erosion, ocean acidification, and an increase in the frequency of harmful algal blooms will continue to threaten private property and subsistence, recreational, and commercial fisheries, including but not limited to shellfish fisheries, along the Pacific Coast of the United States. For example, because warm water holds less oxygen than cold water, increases in water temperature directly reduce the concentration of dissolved oxygen. The number of Dungeness crabs (*Metacarcinus magister*) caught per person-hour of fishing, and the general condition of those crabs, decreases as oxygen concentrations off the coast of west-central Oregon decrease (Keller et al. 2010³⁶). Additionally, in 2016, high concentrations of domoic acid from a regional harmful algal bloom led to a prolonged delay in the opening of the West Coast Dungeness crab fishery. Sea level rise could drive saltwater intrusion into coastal aquifers from which water for domestic and agricultural uses is derived. Additionally, extreme winter storms increase storm surge, erosion, and the likelihood of flooding in coastal communities.
24. Transportation systems in Oregon are threatened by extreme precipitation and temperatures, sea level rise, and wildfires, all of which can damage roads to the point that closures are

³⁴ Jacob, B., L. Lefgren, and E. Moretti. 2007. The dynamics of criminal behavior: evidence from weather shocks. *Journal of Human Resources* 42:489–527.

³⁵ Ranson, M. 2014. Crime, weather, and climate change. *Journal of Environmental Economics and Management* 67:274–302.

³⁶ Keller, A, V. Simon, F. Chan, W.W. Wakefield, M.E. Clarke, D. Kamikawa, E.L. Frush, and J.A. Barth. 2010. Demersal fish and invertebrate biomass in relation to an offshore hypoxic zone along the U.S. West Coast. *Fisheries Oceanography* 19:76–87.

necessary (OLIS 2019³⁷). Current levels of funding are not sufficient for the Oregon Department of Transportation to proactively clear drainages (reducing the risk of flood), reshape slopes (reducing the risk of landslides), and maintain roadside vegetation (reducing the risk of flood and ignition or expansion of wildfire) (OLIS 2019).

25. Climate change is likely to have negative effects on transportation infrastructure absent substantial new investments. An assessment conducted by the Oregon Department of Transportation, Federal Highway Administration, and local government authorities in 2014 (ODOT 2014³⁸) identified vulnerabilities to climate change and extreme weather on highways in the Coast Range, roads in low-elevation areas that increasingly are prone to flooding, and the transportation infrastructure in coastal areas that are exposed to storm surges and inundation, both of which are becoming more frequent as anthropogenic climate change continues. Seismic Lifeline Routes in Oregon, intended to facilitate emergency response and recovery after an earthquake, also were found to be vulnerable. Furthermore, incremental increases in relative sea-level rise can produce exponential increases in flood frequency (Taherkhani et al. 2020³⁹). For example, on the west coast of the United States, a rise in sea level of about 2.1 inches doubles the likelihood of exceeding the contemporary 50-year flood (a flood that has a 2% probability of occurring in a given year) (Taherkhani et al. 2020). Global mean sea level rose by nearly 8 inches from 1900 through 2018, and rates of

³⁷ Oregon State Legislature, Oregon Legislative Information (OLIS). 2019. An adaptation menu of investment options: potential transportation investments to adapt to climate change impacts. Committee meeting document. <https://olis.leg.state.or.us/liz/2019R1/Downloads/CommitteeMeetingDocument/165202>.

³⁸ ODOT (Oregon Department of Transportation). 2014. Climate change vulnerability assessment and adaptation options study. www.oregon.gov/ODOT/Programs/TDD%20Documents/Climate-Change-Vulnerability-Assessment-Adaptation-Options-Study.pdf.

³⁹ Taherkhani, M., S. Vitousek, P.L. Barnard, N. Frazer, T.R. Anderson, and C.H. Fletcher. 2020. Sea-level rise exponentially increases coastal flood frequency. *Scientific Reports* 10:6466. doi: 10.1038/s41598-020-62188-4.

sea level rise accelerated during that time (IPCC 2021⁴⁰). Global mean sea level is likely to continue to rise by about 1–4 feet, relative to the year 2000, by the year 2100 (Sweet et al. 2017⁴¹). Sea level rise projections vary along the Oregon coast, primarily due to local differences in vertical land motions. To illustrate, median local sea level projections for Astoria, near Fort Stevens State Park, range from 0.1–2.4 feet above a 1992 baseline by 2050, depending on the emissions scenario. By contrast, median local sea level projections for Newport, near South Beach State Park and Lost Creek State Recreation Site, range from 0.6–2.9 feet above a 1992 baseline by 2050.

26. Native American tribes both on and off reservations generally are among the communities most strongly and adversely affected by climate change. Climate change affects the lands, identity, economies, physical and mental health, and culture of Native American tribes in addition to tribal fisheries and other sources of traditional foods, including but not limited to salmon, shellfish, and berries. In 2015, 15 tribes in the Columbia River Basin and three intertribal organizations identified protection of water quality and quantity; fishes, their habitats, and connectivity among them; preparation for wildfires in forests; and wildlife and their habitat among their highest priorities for climate action plans (Sampson 2015⁴²).

I state under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge and belief.

⁴⁰ IPCC (Intergovernmental Panel on Climate Change). 2021. Summary for policymakers. Pages 3–32 in V. Masson-Delmotte et al., editors. *Climate change 2021: the physical science basis*. Contribution of Working Group I to the sixth assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, USA. doi: 10.1017/9781009157896.001.

⁴¹ Sweet, W.V., R. Horton, R.E. Kopp, A.N. LeGrande, and A. Romanou, 2017. Sea level rise. Pages 333–363 in D.J. Wuebbles, D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock, editors. *Climate science special report: fourth National Climate Assessment, volume I*. U.S. Global Change Research Program, Washington, D.C. <https://science2017.globalchange.gov/>.

⁴² Sampson, D. 2015. Columbia River Basin tribes climate change capacity assessment. Portland State University, Portland, Oregon. www.tribalclimatecamp.org/sites/default/files/ColBasinTribes_CCCassessment.pdf

Executed in Corvallis, Oregon on 2 May, 2024

Erica Fleishman

Erica Fleishman

Director, Oregon Climate Change Research Institute

Attachment 3

Declaration of Carolyn Lozo, California Air Resources Board

ORAL ARGUMENT NOT YET SCHEDULED

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

STATE OF OKLAHOMA, *et al.*,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, *et al.*,

Respondent.

No. 24-1059 and
consolidated case

DECLARATION OF CAROLYN LOZO

I, Carolyn Lozo, declare as follows:

Experience

1. I am currently employed by the California Air Resources Board (CARB) as the Branch Chief of the Oil and Gas and Greenhouse Gas Mitigation Branch, a position I have held since May 2019. CARB is the expert agency charged with overseeing all air pollution control efforts in California to attain and maintain health-based air quality standards. CARB's mission is to promote and protect public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering effects on the economy. CARB's major goals include ensuring all Californians have safe, clean air, reducing California's emission of greenhouse gases, and providing leadership and innovative approaches for implementing air pollution controls.

CARB is part of the California Environmental Protection Agency, an organization that reports directly to the Governor's Office in the Executive Branch of California State Government. In addition to developing statewide rules, CARB works with local California air districts, many of which regulate oil and gas pollution at the regional or county level.

2. I have more than twenty-five years of experience working for CARB and extensive professional knowledge regarding the air impacts of the oil and natural gas industry. I manage a team working with California's local air districts to regulate emissions from California's oil and gas industry. I oversee implementation of and amendments for CARB's methane regulation for the oil and gas sector, coordinate with the California Public Utilities Commission on a methane emission proceeding for natural gas transmission and distribution utilities, develop State Implementation Plan elements and related documents, and develop programs evaluating well stimulation and other oil and natural gas-related issues. I have also designed and implemented elements of California's Low Carbon Fuel Standard. I supervise a team of over 20 scientists and engineers. Many of the staff I oversee have significant professional experience with the air pollution impacts from the oil and natural gas industry.

3. I make this declaration based upon my extensive knowledge and expertise in the matters discussed herein, and upon my review of various publicly available administrative records and scientific literature. I submit this declaration in support of the Movant-Intervenor State of California's Response to Petitioners' Motion to Stay the United States Environmental Protection Agency's ("U.S. EPA") final rule entitled, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil & Natural Gas Sector Climate Review," published as amendments sections 60.5360a-c, et seq. of Title 40 in the Code of Federal Regulations ("Final Rule").

The Final Rule

4. The Final Rule updates and strengthens limits on air pollutants from new and modified sources in the oil and natural gas sector under section 111(b) of the Clean Air Act, 42 U.S.C. § 7411(b), and establishes the first nationwide emission guidelines requiring states to limit greenhouse gas emissions—specifically methane—from existing oil and gas sources (“existing source emission guidelines”) under section 111(d) of the Act, *id.* § 7411(d).

5. The Final Rule will provide significant health and environmental benefits from a reduction in volatile organic compounds (VOCs) and other hazardous pollution that worsen our air quality and harm our residents’ health, especially in overburdened communities.¹

6. The Final Rule will also achieve significant reductions in climate-damaging methane emissions from the oil and natural gas sector. Methane is a potent greenhouse gas that has eighty-three times the warming impact of carbon dioxide for the first two decades after release, approximately thirty times the warming impact over a one hundred-year timeframe, and responsible for about 30% of current climate forcing².

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf; 89 Fed. Reg. at 16,843. The oil and natural gas sector is the largest industrial emitter of methane in the United States. *Id.* at 16,823.

7. Methane emissions controls represent one of the most important ways of slowing the pace of global climate change because they can be readily and cost-

¹ EPA projects the Final Rule to reduce 16 million tons of volatile organic compounds, and 590,000 tons of air toxics (such as benzene) from 2024 to 2038. 89 Fed. Reg. at 16,836. Volatile organic compounds are a main precursor to the formation of ground-level ozone. *Id.* at 16,841. Exposure to elevated levels of ozone can cause coughing, throat irritation, lung tissue damage, and aggravation of existing conditions, such as asthma, bronchitis, heart disease, and emphysema. 80 Fed. Reg. 65,292, 65,302–11 (Oct. 26, 2015). Exposure to benzene is known to cause cancer and other adverse health effects. 89 Fed. Reg. at 16,841.

² <https://ww2.arb.ca.gov/news/california-launches-methane-cutting-effort-subnational-governments-cop28>

effectively implemented. From November 30 to December 13, 2023, more than 85,000 participants, including more than 150 heads of State, met in Dubai for the annual United Nations Climate Change Conference, COP28, to discuss the world's efforts to address climate change under the Paris Agreement.³ A call was made at COP28 for all governments to speed up the transition away from fossil fuels to reduce greenhouse gas emissions. This is in large part due to research conducted by NASA which connects the global rise in methane emissions to the oil and natural gas industry.⁴ The new standards and existing source emission guidelines set by U.S. EPA in the amendments to sections 60.5360, et seq. are designed to feasibly reduce methane emissions from oil and natural gas production while meeting climate change greenhouse gas reduction goals.

8. The Final Rule will help prevent or mitigate climate-change-related harms to California. Although all states face serious risks from climate change, California faces particularly acute climate vulnerabilities. The state is already experiencing the adverse effects of climate change, including increased wildfire risk, a decline in the average annual snowpack that provides approximately 35 percent of the State's water supply,⁵ and increased erosion of beaches and low-lying coastal properties from rising sea levels. California's vibrant agricultural economy is sensitive to rising temperatures and increased risk of drought and heavy rainfall events. Greenhouse gas emissions and climate impacts also cause

³ <https://unfccc.int/cop28>

⁴ <https://unfccc.int/news/nasa-confirms-methane-spike-is-tied-to-oil-and-gas>

⁵ Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (2018). Indicators of Climate Change in California, p. 110, available at <https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf>.

serious harm to human health, including increased heat-related hospitalizations⁶ and deaths⁷ and extreme weather events.

California’s Regulation of Methane Emissions

9. California has acted via legislation and regulations to reduce methane emissions, including from oil and gas, in the state. For decades, the individual air districts have controlled leaks of VOC emissions, and consequently to control methane leaks indirectly, from the oil and natural gas industry. In 2017, CARB adopted a statewide regulation for the control of methane emissions from oil and gas to work hand in hand with the existing district regulations. This regulation was amended in 2023 to include requirements to locate and mitigate leaks detected through satellite monitoring.

10. California’s action to reduce methane emissions has demonstrated both environmental and economic benefits. California’s methane reduction efforts are guided by California legislation (Senate Bill 1383) that established the goal of reducing methane emissions by 40 percent below 2013 levels by 2030, as well as California’s Short-Lived Climate Pollutant Reduction Strategy (developed pursuant to Senate Bill 605), which targeted reductions in fugitive methane emissions from oil and gas sources of 40 percent below 2013 levels by 2025 and 45 percent by 2030. California’s rules and regulations collectively require periodic leak detection and repair; investigation and mitigation of satellite-detected methane plumes (per recent amendments which went into effect in April 2024); control of vented emissions from separators, storage tanks, compressors, and pneumatic devices; and measurement and reporting of emissions from other sources. While

⁶ Knowlton, K., M. Rotkin-Ellman, G. King, H.G. Margolis, D. Smith, G. Solomon, R. Trent, and P. English (2008). “The 2006 California heat wave: impacts on hospitalizations and emergency department visits.” *Environmental health perspectives* 117(1): 61-67.

⁷ Poumadere, M., C. Mays, S. Le Mer and R. Blong (2005). “The 2003 heat wave in France: dangerous climate change here and now.” *Risk Analysis: an International Journal* 25(6): 1483-1494.

CARB's Oil and Gas Methane regulation (17 Cal. Code Regs. §§ 95665-77) focuses on methane emissions, the regulation also has VOC co-benefits due to its leak detection and repair requirements and emissions standards.

11. These directives have made California an international leader in oil and gas methane mitigation and methane monitoring. In addition, CARB has enacted comprehensive oil and gas methane emissions reporting requirements and is deploying innovative remote sensing technologies on planes and satellites. Due to this combination of reporting and remote sensing, California regulators and industries can quickly and effectively identify and address methane emissions from oil and gas infrastructure. To meet methane emission reduction targets across sectors, California created financial incentives to reduce emissions and adopted targeted regulations when appropriate. Each of these mechanisms has their role in California's portfolio approach, but it is the regulations that help ensure oil and gas methane reductions.

12. Additionally, the California Public Utilities Commission, in consultation with CARB, approved a decision in 2017 that requires gas corporations to implement 26 best practices for methane leak detection, quantification, and mitigation to reduce methane emissions from commission-regulated facilities. These mitigation approaches are well known at this point; California's local air districts have been controlling volatile organic compounds and other pollutants from the industry with these methods for decades. Industry is highly familiar with these approaches to mitigate emissions and can implement cost-effective controls. California's oil and gas industry, including over 300 operators ranging from very small independent entities to large global companies, representing over 500 individual facilities and almost 89,000 wells (more than 950 facilities and almost 99,000 wells once district rules are included), have complied

with CARB's Oil and Gas Methane Regulation without experiencing substantial implementation issues or supply disruptions.

Importance of Federal Regulation

13. Over 90% of the natural gas consumed in California is imported.^{8 9} The majority of that natural gas is produced in other U.S. states and carried to California through a network of transmission pipelines. The U.S. EPA Greenhouse Gas Emissions Inventory indicates that 60% of vented and fugitive methane emissions from the natural gas life cycle are from exploration, production, and processing, all of which occur outside of the State for imported gas. Thus, while CARB programs and regulations target reductions of in-state vented and fugitive emissions, the majority of potentially abatable emissions associated with natural gas consumed in California occur in other states where California has no jurisdiction. CARB recently calculated the out-of-state emissions associated with imported gas, including flaring emissions, and found them to be approximately 8.7 million metric tons CO₂-equivalent using a 100-year global warming potential.¹⁰ Because California does not directly limit emissions from imported natural gas, strong national standards are necessary to decrease methane emissions associated with natural gas consumed in the State and reduce the harm caused to California residents by climate change.

14. Federal regulations also provide important additional enforcement oversight within California. Federal rules provide needed federal oversight of national and international corporations operating in California. Federal rules

⁸ Energy Information Administration (2022) Natural Gas Consumption by End Use. https://www.eia.gov/dnav/ng/ng_cons_sum_dcua_sca_a.htm

⁹ Energy Information Administration (2022) Natural Gas Gross Withdrawals and Production. https://eia.gov/dnav/ng/ng_prod_sum_a_EPG0_FGW_mmcf_a.htm

¹⁰ California Air Resources Board (2023). Out-of-State Greenhouse Gas Emissions from Loss, Release, and Flaring of Natural Gas Imported to California: 2018-2021, available at: https://ww2.arb.ca.gov/sites/default/files/2023-12/AB%202195%20Out-of-State%20Natural%20Gas%20Emissions%20Report_2018-2021.pdf

impose reporting requirements that provide valuable emissions inventory data – data not easily replicated by California’s efforts alone. Federal rules provide important additional oversight by creating obligations under the federal Clean Air Act that may be enforced by U.S. EPA or citizen suit. And federal rules, provided they are at least as stringent as California’s regulation, ensure that imported natural gas has similar rates of methane emissions to that of natural gas produced in California.

The Final Rule’s State Planning and Timeline Requirements

15. As stated, the existing source emission guidelines in the Final Rule help support reductions in-state and across the country.

16. One of the strengths of the Final Rule is that it relies on the Clean Air Act’s successful state/federal planning model, which has helped California and states across the country reduce air pollution for more than forty years. Based on my experience developing California’s State Implementation Plans under the Clean Air Act, and on my current responsibilities, I believe that the state planning and compliance process in the Final Rule is fundamentally similar to the Clean Air Act planning processes that most, if not all, states have long undertaken, and thus imposes no unique or special burdens on those states that wish to submit their own plans. Instead, it uses highly similar procedures to those that the states successfully employ as a matter of course.

17. Specifically, section 111(d) planning, as envisioned by the Final Rule, is similar to the planning processes states regularly undertake under Section 110 of the Clean Air Act to meet federal ambient air quality standards for criteria pollutants. That cooperative federalism approach has allowed states to achieve large air pollution reductions while tailoring programs to meet their particular circumstances. State and local clean air agencies employ expert staffs to develop

and implement state plans, and planning is an ongoing and regular part of our duties. California state and local agencies, for instance, have developed nearly fifty Clean Air Act implementation plans under Section 110 of the Clean Air Act since the year 2000 alone. California has also successfully implemented U.S. EPA's past section 111(d) emissions guidelines.

18. I have reviewed the state planning requirements of the Final Rule. For states that choose to develop their own state plans (which are not required), the Final Rule's requirements are no more demanding than those which the states have already met in previous Section 110 and Section 111(d) plans. Both processes require careful analysis of pollution sources and the effects of proposed regulatory regimes on those sources. Thus, the task of plan development under Section 111 will be familiar to agencies experienced in Section 110 planning.

19. In some ways, section 111 plans are somewhat more straightforward substantively. Notably, section 110 plans, which are focused on attaining ambient air quality levels for particular pollutants typically involve measures that affect many source categories – both stationary and mobile – as well as atmospheric modeling to understand the effect of sources on pollutant levels in the atmosphere. Hence, considerable effort is needed to consider measures and impacts across economic sectors. Section 111 planning, by contrast, focuses on pollutants from a single source category, and does not require atmospheric modeling.

20. Further, in some regards, the Final Rule also affords states procedural flexibility as they develop their plans that is not always available in the Section 110 process. Although the Final Rule includes “presumptive standards” in the form of a model rule, states have the flexibility to depart from the model rule using trading and averaging within source types or by demonstrating a need for variance based on “remaining useful life and other factors” (RULOF). Specifically, states may use the RULOF provision to apply a less stringent standard when there are

fundamental differences between the information specific to a facility (or class of facilities) in the state and the information that U.S. EPA used to establish the standard in the existing source emissions guidelines. This provides important flexibility to states in the development of 111(d) plans.

21. The Final Rule also affords states adequate time. U.S. EPA requires a submission within two years from publication of the Final Rule. U.S. EPA has also proposed a range of additional submission options – including partial, conditional, and parallel processing and approval options – that will further accommodate state planners and their schedules. The fact that state plans need not begin to meet compliance period requirements until March 9, 2029 further provides administrative flexibility.

22. CARB’s rulemaking process must follow the requirements of the California Administrative Procedure Act and other laws. CARB anticipates amendments required for its state plan pursuant to section 111(d) may require a Standardized Regulatory Impact Assessment (SRIA) fully analyzing cost impact on the industry and feasibility of alternatives and possibly an environmental analysis as well. Paragraph (g)(2) of title 40 of the Code of Federal Regulations, Part 60.27a clarifies the requirements for a state plan to be deemed complete and paragraph (h) of Part 60.27a provides for parallel processing, an alternative process designed to expedite U.S. EPA approval. Parallel processing allows CARB to submit its state plan prior to the amended rules entering the public comment phase so U.S. EPA may comment and provide guidance on the rule development.

23. Based on previous rulemakings, CARB anticipates it will take roughly 24 months to get the amended regulations through the public comment and adoption phases given the potential need for the SRIA and other analyses. Therefore, while California does not necessarily anticipate its amended rules would be published in final form by the March 9, 2026 due date, it is comfortable it will

either be able to meet the requirements of paragraph (g)(2) by that date with amended rules that have already gone through public comment and adoption or comply with the required deadlines through parallel processing.

Harms to California Resulting from a Stay of the Final Rule

24. California would be harmed by any judicial decision staying the Final Rule. California is moving ahead to implement the Final Rule in accordance with other planning activities. I believe that expeditious, integrated planning in California, and across the country, provides significant benefits.

25. In order to develop a unified regulatory plan for the oil and natural gas sector, it is important that the state and federal planning processes move forward together. A stay of the Final Rule could push compliance planning beyond the planning period for the state-level rulemakings – such as by delaying U.S. EPA’s ability to reach a decision on California’s compliance plan, and by creating regulatory uncertainty around the process of plan development. The result would be that CARB would have to consider moving forward with state regulatory development, but without the benefit of U.S. EPA regulatory decisions on CARB’s determinations for a portion of that period. If a stay generated delays beyond the timeline of the state regulatory process, CARB would likely have to reopen closed state regulatory and planning processes to incorporate the delayed federal requirements.

26. Moreover, staying the Final Rule will make it more difficult for state planners to develop durable plans that will deliver the requisite greenhouse gas emissions reductions. During the pendency of a stay, the uncertainty created, along with potential limits on U.S. EPA’s implementation abilities, will make it more difficult to move state plans forward with full federal and state involvement in the process. Delays could also create a less certain planning timeline, making it more

difficult to coordinate with other state processes. Because thoughtful coordination of this sort is important to effective planning, a stay would make it more difficult to integrate the Final Rule's requirements into ongoing state processes.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my ability.

Executed this 3rd day of May, 2024, at Sacramento, California.



Carolyn Lozo
Chief, Oil and Gas and Greenhouse Gas Mitigation Branch
California Air Resources Board

Attachment 4

Declaration of Michael Ogletree, Colorado Air Pollution Control Division

ORAL ARGUMENT NOT YET SCHEDULED

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

STATE OF OKLAHOMA, *et al.*,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, *et al.*,

Respondent.

Case No. 24-1059
and consolidated
case

DECLARATION OF MICHAEL OGLETREE

I, Michael Ogletree, declare as follows:

1. I am the Director of the Air Pollution Control Division (Air Division), a Colorado State Agency. The Air Division is charged with implementing the federal Clean Air Act (CAA) and the Colorado Air Pollution Prevention and Control Act, including taking steps to prevent and mitigate the impacts of climate change. In my capacity, among other responsibilities, I oversee projects to address climate change and improve air quality including expanding air monitoring across Colorado, modernizing data processes and public access to information, enhancing

community engagement, and developing new rule proposals for consideration by the Colorado Air Quality Control Commission (Air Commission).

2. I submit this declaration in support of State Intervenors' opposition to the motion to stay the U. S. Environmental Protection Agency's (EPA) final rule entitled "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review," 89 Fed. Reg. 16,820 (Mar. 8, 2024) (Rule).

PERSONAL BACKGROUND AND QUALIFICATIONS

3. I have a Bachelor's of Science in Natural Science from Loyola Marymount University and a Master's of Applied Science in Environmental Policy and Management from the University of Denver. I have also worked as a chemist and laboratory manager in the private sector.

4. Prior to my position as Director of the Air Division, I served as an air quality program manager with the City and County of Denver where I led Denver's overall efforts to improve air quality, with a special focus on the disproportionate impacts of air pollution and poor air quality

on communities of color. I also served on the state's Air Quality Control Commission and the Air Quality Enterprise Board.

5. The Air Division implements the Air Quality Control Commission's regulations to promote clean air in Colorado. Colorado has been a leader in the development and implementation of emission control regulations for the oil and gas industry, addressing emissions of both volatile organic compounds (VOC) and greenhouse gases such as methane. In 2014, Colorado was the first state to adopt methane-focused regulations for this industry and pioneered the use of infrared cameras as part of a leak detection and repair (LDAR) program. Since 2014 and as recently as July 2023, Colorado has continued to develop its regulatory framework and still paves the way as a national leader in the regulation of methane emissions from oil and gas operations. Colorado has successfully implemented these requirements for the oil and gas sector and is confident that implementation of EPA's Rule will also be feasible in the timeframe provided in the Rule.

CLEAN AIR ACT FRAMEWORK AND STATE IMPLEMENTATION

6. Under Section 111(d) of the CAA, states are mandated to develop implementation plans to regulate emissions from existing sources that endanger public health or the environment. 42 U.S.C. § 7411(d).

7. As discussed in EPA's final rule, EPA recognizes that states may already have existing programs they want to leverage for purposes of satisfying their CAA 111(d) state plan obligations. 89 Fed. Reg. at 16,996, 16,999-17,000. EPA has identified specific criteria for states and EPA to follow in determining whether a state plan meets the level of stringency required under the final Emission Guideline. EPA stated that it is EPA's intention in providing these criteria to offer states flexibility while establishing guideposts to ensure the state plan would meet the degree of emission limitation required under the Emission Guideline. In its implementation, Colorado will rely on EPA's intention and work towards resolution with EPA.

8. EPA further clarified that it did not finalize a framework that demanded or required that a state plan be identical to the Emission Guideline; specifically noting that "... consistent with the cooperative

federalism framework of CAA section 111(d), states have the prerogative to develop state plans and have flexibility to adopt standards that diverge from the presumptive standards....” 89 Fed. Reg. at 16,999-17,000. The flexibility to develop a state plan appropriate to and effective for a state without tracking word-for-word EPA’s model rule is critical, particularly for a state like Colorado with a long history of effectively regulating oil and gas operations.

9. While the 2-year timeline to develop a robust implementation plan that meets EPA’s approval for achieving similar or greater emission reductions compared to the reductions EPA estimated as a result of the Emissions Guideline is bold it is feasible to accomplish with a collaborative process with EPA. Colorado has a well-established set of regulatory requirements similar to the Emissions Guidelines that the Division has been implementing and the regulated community has been complying with for many years. To maintain compliance assurance for our state, it is imperative that the EPA work collaboratively with Colorado to ensure expectations on both sides are understood in assessing the equivalency determination. Colorado anticipates that

EPA's expectations will be clearly and timely communicated during the equivalency process.

CONCLUSION

10. As described in EPA's final rule, the rule will create emissions reductions across the country. 89 Fed. Reg. at 16,836. The existing regulatory scheme in Colorado, including many similar requirements in the Air Commission's Regulation 7, 5 Colo. Code. Reg. § 1001-9, already achieves the same or better emissions reductions, and Colorado looks forward to working with EPA to secure approval of Colorado's program during the 2-year period set forth in the Rule.

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Denver, Colorado on May 6, 2024.



Michael Ogletree
Director, Air Pollution Control Division
Colorado Department of Public
Health and Environment

Attachment 5

Declaration of Tyler Soleau, Massachusetts Executive Office of Energy and Environmental Affairs

ORAL ARGUMENT NOT YET SCHEDULED

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

STATE OF OKLAHOMA, *et al.*,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, *et al.*,

Respondent.

No. 24-1059 and
consolidated case

DECLARATION OF TYLER SOLEAU

I, Tyler Soleau, declare of my personal knowledge as follows:

1. I am currently employed by the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) as Acting Director and Assistant Director of the Office of Coastal Zone Management (CZM). CZM is the lead policy, technical assistance, and planning agency on coastal and ocean issues in Massachusetts. I have held this position for over four years. I have been employed by CZM since 2019. Prior to joining CZM, I held positions at Sungage Financial, the Acadia Center, and the Massachusetts Legislature.

2. I have extensive professional knowledge and experience regarding the impacts of climate change on coastal resources and communities in Massachusetts,

as well as Massachusetts' efforts to plan and prepare for such impacts. My job duties include providing oversight and administration for CZM and directing policy development, planning efforts, and technical approaches for CZM program areas. I supervise a team of 30 plus multidisciplinary professionals working in a range of program areas, including climate change adaptation and coastal resilience administered as CZM's StormSmart Coasts Program. Many of the staff I oversee have significant professional experience in coastal and environmental management, planning, science, policy, and other related fields. I routinely engage and partner with scientific and technical subject matter experts in federal agencies and academia. As part of my management responsibilities, I oversee CZM's work to provide information, strategies, tools, and financial resources to support communities and people working and living on the Massachusetts coast to address the challenges of erosion, flooding, storms, sea level rise, and other climate-change impacts. For instance, I oversee the development of sea level rise decision-support tools and services including inundation maps and guidance documents. I also direct CZM's work to provide policy and planning support and technical assistance to other state agencies, local communities, and private entities regarding adapting and increasing resilience to current and future impacts of climate change on our coast. For example, I oversee CZM's StormSmart Coasts Program that offers competitive grants, hands-on technical and planning assistance, and decision-support tools to

Massachusetts cities and towns and non-profit organizations for the purposes of planning for and adapting to sea level rise and other climate-change-related coastal hazards.

3. In my role with CZM, I chair and participate in various legislative and executive branch groups, including the Massachusetts Ocean Advisory Commission and Science Advisory Council and associated work groups and the Seaport Economic Council. I also represent the Commonwealth of Massachusetts (Commonwealth) on several multi-state organizations, including the Coastal States Organization, Northeast Regional Ocean Council, the Gulf of Maine Council on the Marine Environment and Bureau of Ocean Energy Management's Gulf of Maine Intergovernmental Renewable Energy Task Force .

4. I have a bachelor's degree in Government from Hamilton College and a Juris Doctor degree from Vermont Law School.

5. I am aware of and familiar with the science related to global and local climate change. My knowledge comes from my review of scientific peer-reviewed literature and consensus assessment reports, attendance at professional conferences and workshops, and professional exposure to other research and material. As a result of my professional experience and my knowledge of the peer-reviewed literature and reports, as well as my knowledge of the Massachusetts coastal resources and policies and planning related thereto, I can attest to the following.

6. The purposes of this declaration are to: (i) briefly describe the serious harms that climate change, caused in part by methane emissions from new and existing sources in the oil and natural gas sector, is causing and will continue to cause to Massachusetts' coastal resources, infrastructure, and communities; and (ii) briefly summarize extensive state and local initiatives, programs, and plans to respond to and prepare for such impacts. I am submitting this declaration in support of the States' opposition to petitioners' motion to stay in *Oklahoma et al. v. U.S. Environmental Protection Agency*, No. 24-1059, in support of the U.S. Environmental Protection Agency's (EPA) final rule entitled *Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*,⁸⁹ Fed. Reg. 16,820 (Mar. 8, 2024).

Climate Change Threatens Massachusetts' Coastal Resources and Communities

7. The accelerated rate of global sea level rise and the severity and timing of coastal impacts due to this rise in sea level are largely dependent on current and future global greenhouse gas emissions, including methane emissions, and reduction measures. Climate scientists have high confidence that anthropogenic drivers have been the dominant cause of global mean sea level rise since 1970.¹ Continued emissions of greenhouse gases, including methane emissions from new and existing sources in the oil and gas sector, will result in increases in global temperature, yielding additional contributions to global sea level rise (*i.e.*, increased contributions from thermal expansion of warmer waters and melting of land-based ice sheets).²

8. According to the U.S. Global Change Research Program, human-caused climate change has led to a rise in average sea level along the continental U.S. coastline of about 11 inches, which is higher than the rise in global mean sea levels of 7 inches since 1900, and a rate of rise (1.8 inches per decade) greater than global rates of rise (1.3 inches per decade) over the period of 1993-2020. Over this

¹ Oppenheimer, M., B.C. Glavovic et al., *Chapter 4: Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities*, in IPCC SPECIAL REPORT ON THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE (H.-O. Pörtner et al. eds., 2019).

² See generally U.S. GLOBAL CHANGE RESEARCH PROGRAM, FIFTH NATIONAL CLIMATE ASSESSMENT (Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Steward, and T.K. Maycock, Eds., 2023), <https://doi.org/10.7930/NCA5.2023>.

same time period, both the global and continental U.S. rates of sea level rise have accelerated.³ Global average sea levels will continue to rise by 1 to 6.5 feet by 2100 (compared to the baseline year 2000).⁴ Due to the relationship of the East Coast to the Gulf Stream and melting Antarctic ice sheets, sea level rise will be higher than the global average on the East Coast of the United States.⁵

9. A March 2018 report entitled *Massachusetts Climate Change Projections* (2018 Projections Report), informed by a team of scientists from the U.S. Department of the Interior's Northeast Climate Adaptation Science Center at the University of Massachusetts Amherst, presents the best available, peer-reviewed science on climate change downscaled, or localized, for Massachusetts through the end of this century.⁶ A key component of the 2018 Projections Report is sea level rise projections for the state's coastline. The analysis for Massachusetts consisted of a probabilistic assessment of future relative mean sea level rise at tide gauge stations with long-term records at Boston Harbor, MA, Nantucket, MA, Woods Hole, MA, and Newport, RI.⁷ The sea level projections are based on a

³ *Id.* at 10.

⁴ *Id.*

⁵ *Id.*

⁶ MASSACHUSETTS CLIMATE CHANGE PROJECTIONS (2018), https://eea-nescaum-dataservices-assets-prd.s3.us-east-1.amazonaws.com/resources/production/MA%20Statewide%20and%20MajorBasins%20Climate%20Projections_Guidebook%20Supplement_March2018.pdf.

⁷ *See id.* at 11 (citing Robert M. DeConto & Robert E. Kopp, *Massachusetts Sea Level Assessment and Projections*, Technical Memorandum (2017)).

methodology that provides complete probability distributions for different greenhouse gas emissions scenarios.⁸ Working with the principal investigators (Dr. Robert DeConto and Dr. Robert Kopp) and a team of external peer reviewers, CZM reviewed and synthesized the downscaled projections, which are made available by the Commonwealth, to set forth a standard set of sea level rise projections to be used by municipalities, state government, industry, the private sector, and others to assess vulnerability and identify and prioritize actions to reduce risk. Given a high emissions pathway (Representative Concentration Pathway 8.5), compared to a baseline year of 2000, Massachusetts is projected to experience approximately 4.0 to 7.6 feet of sea level rise over the twenty-first century (extremely unlikely to be exceeded, 99.5% probability), with as much as 10.2 feet possible when accounting for higher ice sheet contributions (exceptionally unlikely to be exceeded, 99.9% probability).

10. Massachusetts has 2,819 miles of tidal coastline, and a coastal zone (land areas from the shoreline to 100 feet inland of major roads or railways from New Hampshire to Rhode Island) that encompasses 886 square miles.

Approximately 5.1 million people or 75% of the Commonwealth's population reside in coastal counties. In 2018, the total output of the Massachusetts economy

⁸ See *id.* (citing Robert E. Kopp et al., *Probabilistic 21st and 22nd century sea level projections at a global network of tide gauge sites*, 2 *EARTH'S FUTURE* 383–406 (2014)).

across all industries in coastal shoreline counties was \$487.7 billion.⁹ According to the 2023 ResilientMass Plan (the state’s hazard mitigation and climate adaptation plan), over 500,000 people across Massachusetts coastal communities (as of the 2020 U.S. census, ~10% statewide population) are exposed to the Federal Emergency Management Agency (FEMA) 1% annual chance flood zone (current risk, not accounting for climate change).¹⁰ An additional approximately 165,000 people are susceptible to FEMA’s mapped 0.2 percent annual chance flood event. Accelerated sea level rise will lead to more regular flooding of developed and natural coastal areas due to an increase in the extent of tidal inundation, and will also exacerbate erosion along beaches, dunes, and coastal banks.

11. In addition, there is very high confidence that climate change and sea level rise will increase the frequency and extent of flooding associated with coastal storms, such as hurricanes and nor’easters.¹¹ Moderate to major coastal storm events will cause inundation of larger areas, and will occur more frequently, damaging or destroying coastal engineering structures such as seawalls; critical

⁹ NAT’L OCEAN ECONOMICS PROGRAM, STATE OF THE U.S. OCEAN AND COASTAL ECONOMIES: COASTAL STATES SUMMARIES – 2016 UPDATE 29 (2016), http://midatlanticocean.org/wp-content/uploads/2016/03/CoastalStatesSummaryReports_2016.pdf.

¹⁰ ResilientMass Plan: 2023 State Hazard Mitigation and Climate Adaptation Plan <https://www.mass.gov/info-details/2023-resilientmass-plan>

¹¹ See U.S GLOBAL CHANGE RESEARCH PROGRAM, *supra*, at 27.

infrastructure such as pump stations, wastewater treatment plants, and transportation systems; and businesses and private property.

12. More frequent severe storm surges will create serious risks for public safety and health, especially where roads, sewer mains, and pump stations are impacted. Frequent tidal flooding from sea level rise may also lead to increases in respiratory diseases due to mold from dampness in homes.¹² Saltwater intrusion—or the increased penetration of salt water into sources of fresh water—from sea level rise will impact water resources (such as drinking water) by contaminating freshwater sources with salt water and also through the corrosion of water supply infrastructure.

13. The Massachusetts coast includes a diverse array of marine and estuarine ecosystems including, among others, sandy beaches, rocky shores, barrier beaches, islands, and salt marshes. These ecosystems offer immense commercial, recreational, cultural, and aesthetic values to the residents of and visitors to the Commonwealth, while also serving important ecological functions. For instance, natural coastal resources, especially beaches and salt marshes, provide valuable coastal resilience services to the Commonwealth by buffering inland coastal communities and the built environment from waves and storm surges. Salt water

¹² See generally CENTERS FOR DISEASE CONTROL & PREVENTION, U.S. DEP'T OF HEALTH & HUMAN SERVS., COASTAL FLOODING, CLIMATE CHANGE, AND YOUR HEALTH: WHAT YOU CAN DO TO PREPARE (2017), www.cdc.gov/climateandhealth/pubs/CoastalFloodingClimateChangeandYourHealth-508.pdf.

will also impact natural coastal resources, as saltwater intrusion into salt marshes and freshwater wetlands will alter the composition of plant species and affect wildlife that depend on these ecosystems.

Massachusetts is Experiencing Economic Impacts from Climate Change and is Expending Significant Resources to Adapt and Prepare for Impacts of Climate Change on Our Coastal Areas

14. The Commonwealth is already experiencing impacts of climate change. The relative sea level trend at the Boston tide station is (+) 2.89 millimeters per year based on monthly mean sea level data from 1921 to 2022, which is equivalent to a change of 0.95 feet over 100 years.¹³

15. These impacts are directly harming the welfare of Massachusetts residents and causing significant economic losses. Coastal storms currently result in flooding with extensive damages to public infrastructure, private homes and businesses, and a significant demand for emergency response and recovery services. For example, a nor'easter on March 2–3, 2018, which reached the third-highest water level recorded at the Boston Harbor tide gauge, resulted in major flooding, damages, and expenditures for response and recovery. On April 30, 2018, Massachusetts Governor Charles Baker requested a federal disaster declaration,

¹³ See Nat'l Oceanic & Atmospheric Admin., *Relative Sea Level Trend 8443970 Boston, Massachusetts*, TIDES & CURRENTS, https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?id=8443970.

which the Trump Administration approved on June 25, 2018. The disaster declaration authorized FEMA Public Assistance funding for eligible applicants (FEMA DR-4372-MA), and as of March 2023, FEMA has disbursed \$15.6 million to coastal communities for public storm-related costs related to the event.¹⁴

16. Rising sea levels increase the frequency, depth, and duration of coastal flooding events; and the associated magnitude of damage costs, including costs associated with the increased demand on first responders, will escalate accordingly.

17. Sea level rise and other impacts of a changing climate pose major risks to communities in Massachusetts' coastal zone. Estimates of the projected direct flood damage to commercial and industrial structures in the Commonwealth's coastal areas are expected to more than double by 2030 (up to \$56 million) and the incremental cost could reach as high as \$270 million annually by 2090, more than ten times higher than current levels. These values are conservative and assume no change in adaptation strategies along the coast. These direct impacts of flooding are largest and grow most rapidly in the Boston Harbor

¹⁴ ResilientMass Plan: 2023 State Hazard Mitigation and Climate Adaptation Plan <https://www.mass.gov/info-details/2023-resilientmass-plan>

region, where a large portion of the Commonwealth’s commercial economic base is located.¹⁵

18. Development along the Massachusetts coast is afforded protection from coastal buffers such as beaches and dunes, and from engineered coastal infrastructure such as revetments and seawalls. These coastal engineered structures will experience greater impacts from flooding and wave energy from the anticipated increase in frequency and intensity of coastal storm events associated with accelerated sea level rise and climate change. With these greater impacts will come more frequent need for maintenance and replacement of coastal engineered structures as well as beaches in the form of sediment nourishment at significant costs. For example, the Town of Winthrop needed additional protection from storm surge and flooding impacts for a suburban neighborhood with existing engineered shoreline structures (*i.e.*, seawalls, groins, and breakwaters) and an eroding beach. At a cost of approximately \$25 million in state funding, 460,000 cubic yards of sand, gravel, and cobble were placed along 4,200 linear feet of shoreline in 2013–2014. The community gained approximately 150 feet of beach width at high tide and increased protection against wave energy and coastal storms. Other

¹⁵ 2022 Massachusetts Climate Change Assessment: Volume II, Appendix A: Full Statewide Impact Rankings and Scores by Sector. <https://www.mass.gov/doc/2022-massachusetts-climate-change-assessment-december-2022-volume-ii-appendix-a/download> . 2030 damages (\$56 million) is equal to the sum of increase in damages from 2008 to “Current” (\$22 million) and the increase in damages from “Current” to 2030 (\$34 million).

communities across Massachusetts have worked to design (e.g., Chatham, Provincetown, Nahant, New Bedford, and Rockport) and construct (e.g., Duxbury, Edgartown, Hull, Marshfield, Plymouth, and Scituate) a variety of nourishment projects (e.g., cobble berms, beach and dune nourishment) to address erosion and failing coastal engineered structures that will be exacerbated by accelerated sea level rise and increased flooding from coastal storms. As described below, the Commonwealth provides substantial funding for these projects to protect coastal communities and their residents and businesses.

19. Coastal engineered structures, such as seawalls and revetments, have been constructed along over a quarter of the Commonwealth's ocean-facing shoreline to protect public and private infrastructure and assets from flooding and erosion. The Commonwealth and its municipalities own approximately 92 miles of such structures along the coastline. As a result of wave forces on the coastal structures and lowered beach elevations, the Commonwealth and local governments routinely invest millions of dollars to repair and reinforce these structures so they can adequately protect coastal communities. For example, in 2018 a seawall reconstruction project was completed in the Town of Marshfield to address coastal flooding and public safety issues. The Commonwealth provided a \$1.85 million grant and loan award to the town, which was matched with roughly \$620,000 in local funds. The approximately 600-foot section of seawall sustained

damages during a coastal storm in January 2015, and the state-funded project increased the height of the seawall by two to three feet to better protect a public road, utilities, and homes. The Town of Marshfield has 32 coastal engineered structures along 12 miles of exposed shoreline, totaling over 20,000 feet (3.9 miles), that have been identified as needing repairs and retrofits to address the current and future threats of sea level rise and coastal storms. With higher flood levels and greater storm surges, significantly more investments will be required to achieve the current flood-design protections afforded by these engineered structures across the coast.

20. The Commonwealth owns a substantial portion of the state's coastal property and infrastructure. The Commonwealth owns, operates, and maintains approximately 177 coastal state parks, beaches, reservations, and wildlife refuges located within the Massachusetts coastal zone. The Commonwealth also owns, operates, and maintains numerous properties, facilities, and infrastructure in the coastal zone, including roads, parkways, piers, and dams. Rising sea levels along the Massachusetts coast will result in either the permanent or temporary loss of the Commonwealth's coastal property through inundation, storm surge, flooding, and erosion events. These projected increases in sea levels will likely destroy or damage many of the state-owned facilities and infrastructure described above. The Commonwealth likely will be required to expend significant resources to protect,

repair, rebuild, or possibly relocate the affected properties, facilities, and infrastructure. According to the Commonwealth's *2022 Massachusetts Climate Change Assessment*,¹⁶ annual expected coastal flood damage to state- and state-authority owned properties is expected to increase relative to current risks of about \$8 million statewide in the near term (2030s) to about \$17 million and to \$52 million annually by the 2070s.

21. The Massachusetts coastal zone is home to several major ports including the Port of Boston and New Bedford/Fairhaven Harbor. Recent economic studies indicate the income generated from the Massachusetts maritime economy supports 2.6% of the state's direct employment and 1.3% of gross domestic product.¹⁷ In 2018, New Bedford/Fairhaven Harbor alone generated \$3.7 billion in direct business revenue from seafood processing and fleet operation businesses.¹⁸ By nature of their purpose, the state's ports and harbors are generally low-lying, coastal-dependent areas of high density-built environment and are susceptible to service interruption and associated revenue loss when flooded or otherwise impacted by coastal events. Additionally, coastal dependent businesses,

¹⁶ Available at: <https://www.mass.gov/info-details/massachusetts-climate-change-assessment>.

¹⁷ See DAVID R. BORGES ET AL., UMass DARTMOUTH PUBLIC POLICY CTR., NAVIGATING THE GLOBAL ECONOMY: A COMPREHENSIVE ANALYSIS OF THE MASSACHUSETTS MARITIME ECONOMY 11 (2018), www.mass.gov/files/documents/2018/01/24/Maritime_Economy.pdf.

¹⁸ MARTIN ASSOCIATES & FOTH-CLE ENG'G GROUP, ECONOMIC IMPACT STUDY OF THE NEW BEDFORD/FAIRHAVEN HARBOR 5 (2019), https://www.fairhaven-ma.gov/system/files/uploads/economic_impact_study_nbfh_harbor_2019-martin-report_0.pdf.

maritime schools, and public facilities and departments will face disruptions in service in post-storm conditions. Acknowledging the cultural and economic importance of the developed port areas in the Commonwealth, in 2020, CZM undertook a study to assess climate vulnerabilities and adaptation opportunities in these areas. The study provides tailored resilience strategies to address flood risks while continuing to support the operational needs of water-dependent industrial users in port areas, which must remain in vulnerable locations directly adjacent to the water to maintain operations.¹⁹

22. The Commonwealth is committed to protecting public safety, human health, the environment, and public resources through programs and policies that address sea level rise and other climate-change-related coastal hazards. EEA and CZM provide information, strategies, and tools to help other state agencies and communities plan for and address the challenges of erosion, flooding, storms, sea level rise, and other climate change impacts. In November of 2023, to address the impacts of climate change along the entire coastline of Massachusetts, EEA launched the CZM-led ResilientCoasts initiative²⁰, a holistic strategy that in collaboration with the state's 78 coastal communities, will pursue a multipronged

¹⁹ <https://www.mass.gov/files/documents/2022/03/29/building-resilience-in-massachusetts-designated-port-areas.pdf>

²⁰ <https://www.mass.gov/info-details/resilientcoasts-initiative>

approach to identify regulatory, policy, and funding mechanisms to develop focused long-term solutions.

23. EEA and CZM climate grant programs have been able to address about half of the need requested by communities. Since 2014, CZM has awarded approximately \$46 million (of \$78 million requested) in state-funded grants to local communities and non-profit organizations to support sea level rise adaptation planning and implementation through the Coastal Resilience Grant Program. Local governments and non-profit organizations have matched these state funds with roughly \$17 million in local funds and in-kind services. Since 2017, EEA has awarded over \$44 million of \$98 million requested in municipal grants for climate vulnerability planning and implementation coastwide through the Municipal Vulnerability Preparedness (MVP) Program. Since the start of the MVP Program, local coastal governments have matched MVP grants with over \$18 million in local funds and staff time. EEA and CZM see a significant and growing need for funding support at the local level.

24. Municipalities, private entities, and other partners are also supporting planning and implementation of adaptation measures to address the impacts of sea level rise and other climate change impacts in Massachusetts. Adaptation planning efforts include vulnerability assessments to determine areas and infrastructure susceptible to coastal impacts, prioritization of vulnerable assets and areas, and

development of adaptation alternatives to mitigate climate risks in the near and long term. One example is the City of Boston’s “Climate Ready Boston” initiative, which has been developing neighborhood/district-level adaptation plans to address near-term (2030-2050) and long-term (2050-2070) actions for addressing future coastal flooding risks created by sea level rise. The City of Boston’s report estimates the costs for these actions range from \$202 million to \$342 million for East Boston and Charlestown alone.²¹ With the completion of coastal resilience plans for East Boston and Charlestown in 2022, the City of Boston has now developed strategies for all neighborhoods/districts along the City’s 47-miles of coastline.²² Another example of regional planning for the impacts of coastal climate change is the *Great Marsh Coastal Adaptation Plan* led by the National Wildlife Federation in partnership with the Ipswich River Watershed Association.²³ The plan assesses climate impacts and vulnerability for the Great Marsh region and each of its six communities (Salisbury, Newburyport, Newbury, Rowley, Ipswich, and Essex), examining the risk and exposure of critical infrastructure and natural resources, and identifies areas of special concern. The plan states that in Newburyport, estimated one-time damages to buildings and structures (not

²¹ See COASTAL RESILIENCE SOLUTIONS FOR EAST BOSTON AND CHARLESTOWN: FINAL REPORT (2017), https://www.boston.gov/sites/default/files/embed/c/climatereadyeastbostoncharlestown_finalreport_web.pdf.

²² <https://www.boston.gov/news/new-strategies-enhance-coastal-resilience-east-boston-and-charlestown>

²³ See TAJ SCHOTTLAND ET AL., GREAT MARSH COASTAL ADAPTATION PLAN (2017), www.nwf.org/-/media/Documents/PDFs/NWF-Reports/NWF-Report_Great-Marsh-Coastal-Adaptation-Plan_2017.ashx.

contents) from a 1% annual exceedance probability storm (also known as the 100-year storm) under 1.09 feet of sea level rise would be \$18.3 million, and under 3.45 feet of sea level rise the damages would increase to \$32.4 million.²⁴

25. In conclusion, any increase in the rate of sea level rise and the frequency, magnitude, and severity of coastal flooding, erosion, and storms related to greenhouse gas emissions, including methane emissions from new and existing sources in the oil and gas sector, will adversely impact the Commonwealth and its residents and will require the Commonwealth to expend additional resources and incur additional costs.

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Boston, Massachusetts on April 16, 2024.



Tyler Soleau
Acting Director / Assistant Director
Massachusetts Office of Coastal Zone Management

²⁴ *Id.* at 49, tbl.3.3-3.

Attachment 6

Declaration of Virendra Trivedi, Pennsylvania Department of Environmental Protection

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

STATE OF OKLAHOMA, STATE OF
WEST VIRGINIA, STATE OF
ARKANSAS, et al.,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION
AGENCY, et al.,

Respondents.

No. 24-1059
(and consolidated cases)

DECLARATION OF VIRENDRA TRIVEDI

I, Virendra Trivedi, state and declare as follows:

1. The facts contained in this Declaration are based on my personal knowledge and are true and correct to the best of my knowledge and belief.

2. I am Virendra Trivedi, P.E., the Environmental Program Manager for the Division of Permits in the Bureau of Air Quality ("BAQ"), Commonwealth of Pennsylvania, Department of Environmental Protection's ("PADEP"), Central Office, Rachel Carson State Office Building, 400 Market Street, Harrisburg, Pennsylvania 17101. PADEP is the Commonwealth executive branch agency responsible for

overseeing the regulation and control of air pollution in Pennsylvania.

PERSONAL BACKGROUND AND QUALIFICATIONS

3. I received a Bachelor of Engineering from M. S. University, India in January 1986 and a Master of Science degree in Mechanical Engineering from Drexel University in June 1991. I am a licensed professional engineer in Pennsylvania.

4. I have been employed as an Environmental Program Manager for PADEP from March 2018 to the present. I have been employed by PADEP in the Air Quality Program in both the Southcentral Regional Office and Central Office in Harrisburg, Pennsylvania since November 4, 1992 for a total of over 31 years.

5. I previously served at PADEP as an Air Quality Engineer from 1996 to 2004 and as an Environmental Engineer Manager from 2004 to 2018. These roles involved implementation of state and federal permitting program requirements under the Air Pollution Control Act (35 P.S. §§ 4001-4015) ("APCA") and federal Clean Air Act (42 U.S.C. §§ 7401-7671q) ("CAA") and implementing regulations. These responsibilities involved the review of air quality permit applications and determinations of control technologies for sources and facilities in Pennsylvania.

6. In my current role as an Environmental Program Manager with PADEP, I supervise employees in the Bureau of Air Quality, Division of Permits located in PADEP's Central Office. The Permits Division is comprised of the New Source Review, Air Quality Modeling, and Risk Assessment and Technical Support sections.

7. My current duties at PADEP involve administration of the APCA and implementing Title 25, Part I, Article III regulations (relating to air resources) and the federal CAA and implementing United States Environmental Protection Agency (“EPA”) regulations.

8. As Environmental Program Manager, I am responsible for overseeing the daily administration and implementation of PADEP’s plan approval and operating permit programs under 25 Pa. Code Chapter 127 and related guidance applicable to controlling emissions from sources of air pollution throughout Pennsylvania, including oil and gas sources and facilities.

9. My duties also involve oversight of and participation in the development of administrative rulemakings to control emissions from oil and gas sources and facilities to reduce air pollution and meet Pennsylvania’s federal CAA obligations to attain and maintain the ambient air quality standards. These rulemakings include the adoption of the “Control of VOC Emissions from Unconventional Natural Gas Sources” (25 Pa. Code §§ 129.121-129.130) and “Control of VOC Emissions from Conventional Oil and Natural Gas Sources” (25 Pa. Code §§ 129.131-129.140) (“CTG RACT Rules”) to implement Pennsylvania’s CAA sections 182(b)(2) and 184(b)(1)(B) (42 U.S.C. §§ 7511a(b)(2) and 7511c(b)(1)(B)) obligation to establish reasonably available control technology (“RACT”) for oil and gas sources of volatile organic compound (“VOC”) emissions subject to EPA’s 2016 Control Techniques Guidelines for the Oil & Natural Gas Industry, EPA 453/B-16-001 (“CTG”).

Implementation of the CTG RACT Rules reduces VOC and methane emissions from oil and gas sources in Pennsylvania. *See e.g.* 52 Pa. B. 7591, 7592 (December 10, 2022).

10. My duties further entail administration and implementation of EPA's Standards of Performance for New Stationary Sources ("NSPS") and Emission Guidelines for Existing Sources ("EG") promulgated in 40 CFR part 60, as incorporated by reference in 25 Pa. Code § 122.3 (relating to adoption of standards). PADEP's general operating permit program and Exemption 38 guidance implement state requirements such as Best Available Technology and federal requirements such as NSPS (e.g. 40 CFR part 60, subpts OOOO and OOOOa) for oil and natural gas sources and facilities in Pennsylvania.

11. I submit this declaration on behalf of the Commonwealth of Pennsylvania ("Commonwealth") in support of the State Intervenors' standing to intervene in support of the Respondent EPA in litigation seeking a stay of EPA's final rule entitled, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review," published at 89 Fed. Reg. 16,820 (March 8, 2024) ("O&G Final Rule").

12. The O&G Final Rule will reduce VOC and methane emissions from oil and gas sources in Pennsylvania. 89 Fed. Reg. at 16,823. VOCs are one of the key precursors in the formation of ozone; can be classified as HAP (e.g., benzene) and

can lead to a variety of health concerns such as cancer and noncancer illnesses (e.g., respiratory, neurological). 89 Fed. Reg. at 16,841. Methane is both the main component of natural gas and is a potent greenhouse gas that contributes to climate change and precursor to ground-level ozone formation. 89 Fed. Reg. at 16,823, 16,824, 16,840 and 16,841.

THE O&G FINAL RULE WILL ACHIEVE FURTHER VOLATILE ORGANIC COMPOUND AND METHANE EMISSION REDUCTIONS IN PENNSYLVANIA

13. I am personally familiar with and have reviewed the EPA's O&G Final Rule.

14. Under 25 Pa. Code § 122.3, the federal NSPS promulgated by EPA in 40 CFR part 60 are adopted in their entirety through incorporation by reference. Therefore, the Final O&G Rule establishing NSPS for New, Reconstructed and Modified Sources after December 6, 2022 (40 CFR part 60, subpt. OOOOb) ("NSPS OOOOb") promulgated under CAA section 111(b) (42 U.S.C. § 7411(b)), becomes effective in Pennsylvania on May 7, 2024. 89 Fed. Reg. 16,820.

15. The NSPS OOOOb requirements update, strengthen and expand requirements for oil and gas sources of VOC and methane emissions that commenced construction, modification, or reconstruction after December 6, 2022. 89 Fed. Reg. at 16,826. The NSPS OOOOb requirements establish emission standards for certain sources previously not regulated under the 2012 NSPS (40 CFR part 60, subpt. OOOO) and 2016 NSPS (40 CFR part 60, subpt. OOOOa) requirements. *Id.* For

example, the NSPS OOOOb requirements establish a more stringent zero bleed methane emissions standard for process controllers that will be applicable and implemented for new wells constructed, modified or reconstructed in Pennsylvania after December 6, 2022. 89 Fed. Reg. at 16,881, 16,882. Therefore, PADEP expects that the implementation of strengthened and expanded NSPS OOOOb requirements may yield additional VOC and methane emission reductions for certain oil and natural gas source categories.

16. Under the O&G Final Rule’s requirements at 40 CFR part 60, subpt. OOOOc (Emissions Guidelines for Greenhouse Gas Emissions from Existing Crude Oil and Natural Gas Facilities) (“OOOoc EG”), Pennsylvania must develop a state plan to limit methane pollution from designated oil and gas sources and facilities that commenced construction, modification or reconstruction on or before December 6, 2022. 89 Fed. Reg. at 16,827. The OOOOc EG provides presumptive standards to limit emissions of methane as well as requirements for states to follow under CAA section 111(d) (42 U.S.C. § 7411(d)) for states to follow in developing, submitting and implementing state plans. 89 Fed. Reg. at 16,823.

17. PADEP is currently working on the development of a state plan to implement the EPA’s OOOOc EG to reduce methane emissions from existing oil and gas sources and facilities constructed prior to December 6, 2022. Under the OOOOc EG, Pennsylvania has until March 9, 2026 to develop and submit a state plan to EPA for their final approval, which at minimum, adopts the presumptive standards of

OOOOC EG. 89 Fed. Reg. at 17,141.

18. Based on a review of the 2020 PADEP emission inventory analysis performed for Pennsylvania's CTG RACT Rule for oil and gas sources, there were approximately 68,548 conventional wells on approximately 27,260 well sites and approximately 11,808 unconventional wells on approximately 3,388 well sites in Pennsylvania.

19. The OOOOC EG impose a number of new requirements on existing storage vessels, compressors, pneumatic pumps and controllers. 89 Fed. Reg. at 17,218. These new requirements for existing oil and gas sources will be implemented through the PADEP state plan and result in additional methane emission reductions in Pennsylvania.

20. For example, the OOOOC EG at 40 CFR 60.5395c require that all existing pneumatic pump affected facilities in the oil and gas industry have zero methane emissions except at facilities with fewer than three natural gas-driven pumps. 89 Fed. Reg. at 17,152. Based on a review of its emissions inventory information for existing oil and gas sources, PADEP estimates that approximately 1,400 pumps in Pennsylvania may be subject this more stringent methane emission standard.

21. PADEP also estimates that additional reductions of methane will occur from implementation of the OOOOC EG presumptive standard for existing process controllers to have zero emissions of methane. 89 Fed. Reg. at 17,151. Pennsylvania

currently requires a natural gas bleed rate less than 6.0 standard cubic feet per hour for natural gas-driven continuous bleed pneumatic controllers. *See* 25 Pa. Code §§ 129.124 and 129.134. Based on a review of its emissions inventory for existing oil and gas sources, PADEP estimates there are approximately existing 60,000 controllers that may be subject to the EPA's more stringent methane emission standard in the OOOOc EG.

I declare under penalty of perjury under the laws of the United States of America that I believe the foregoing to be true and correct to the best of my knowledge and belief.

FOR THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION:

Virendra Trivedi

VIRENDRA TRIVEDI

Virendra Trivedi, P.E.
Environmental Program Manager Division of Permits
Bureau of Air Quality

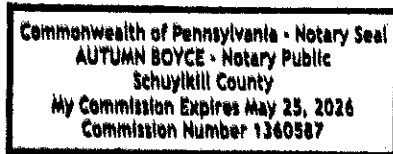
Executed in Harrisburg, PA on April 30, 2024.

Commonwealth of Pennsylvania

County of Dauphin

Signed (or attested) before me on April 30, 2024 (date)

by Virendra Trivedi (name(s) of individual(s)).



Autumn Boyce
Notary Public

My commission expires: May 25, 2026