

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

STATE OF OHIO, et al.,

Petitioners,

No. 22-1081

v.

(and consolidated cases)

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY and MICHAEL S.
REGAN, in his official capacity as
Administrator of the U.S. Environmental
Protection Agency

Respondents.

**UNOPPOSED MOTION BY THE STATES OF CALIFORNIA,
COLORADO, CONNECTICUT, DELAWARE, HAWAII,
ILLINOIS, MAINE, MARYLAND, MINNESOTA, NEVADA,
NEW JERSEY, NEW MEXICO, NEW YORK, NORTH
CAROLINA, OREGON, RHODE ISLAND, VERMONT, AND
WASHINGTON; THE COMMONWEALTHS OF
MASSACHUSETTS AND PENNSYLVANIA; THE DISTRICT
OF COLUMBIA; AND THE CITIES OF LOS ANGELES AND
NEW YORK FOR LEAVE TO INTERVENE IN SUPPORT OF
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INTRODUCTION

Pursuant to Federal Rule of Appellate Procedure (FRAP) 15(d) and Circuit Rule 15(b), the States of California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maine, Maryland, Minnesota, Nevada, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, and Washington; the Commonwealths of Massachusetts and Pennsylvania; the District of Columbia; and the cities of Los Angeles and New York (collectively, “Movant-Intervenor States”) hereby move the Court for leave to intervene in case number 22-1081 and all consolidated cases in support of Respondents United States Environmental Protection Agency (EPA) and Administrator Regan.

Petitioners in these consolidated cases challenge EPA actions that directly affect Movant-Intervenor States’ abilities to enforce the state vehicular emission standards they have chosen to adopt in order to protect their residents and their States’ resources. Accordingly, and as explained in more detail below, Movant-Intervenor States have undeniable sovereign interests at stake in this litigation. Movant-Intervenor States also have substantial interests in the benefits—including emission reductions—that the state laws at issue are designed to provide. Movant-Intervenor States easily

satisfy the requirements for intervention and respectfully request the Court grant this motion.

Counsel for all Petitioners and for Respondents indicated they do not oppose Movant-Intervenor States' intervention.

BACKGROUND

Through a series of Clean Air Act amendments beginning in 1967, Congress has carefully constructed a regulatory regime to control harmful emissions from new motor vehicles. Specifically, Congress determined that automakers could be subject to two, but only two, sets of emission standards, striking a balance between automakers' fears of "having to meet fifty-one separate sets of [state and federal] emissions control requirements" and the technological innovation and air quality benefits derived from differential regulation in limited markets. *Motor & Equip. Mfrs. Ass'n, Inc. v. EPA (MEMA I)*, 627 F.2d 1095, 1109 (D.C. Cir. 1979).

Under this carefully balanced regime, EPA must establish federal standards for new motor vehicles to control emissions that it determines "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. § 7521(a). And, while States are generally preempted from establishing their own standards for new motor vehicle emissions, 42 U.S.C. § 7543(a), Congress's regime provides

two ways for States to adopt and enforce a second set of standards—standards different from EPA’s.

First, recognizing, *inter alia*, that California began regulating vehicular emissions before other States or the federal government, Congress opted to permit California to “improve on its already excellent program of emissions control.” *MEMA I*, 627 F.2d at 1109-10 (internal quotation marks omitted).

Specifically, Congress required EPA to grant a preemption waiver for California’s new motor vehicle emission standards unless one of three limited criteria for denial of a waiver request is met. 42 U.S.C.

§ 7543(b)(1).¹ In so doing, Congress recognized the “harsh reality” of California’s air pollution problems, as well as the regulatory expertise California had developed in this field. H.R. Rep. No. 90-728, at 96-97 (1967); *see also* S. Rep. No. 90-403, at 33 (1967). Congress also valued, and wanted to continue, the “benefits for the Nation” that had been realized from California implementing its own regulatory regime, including the

¹ The statutory provision requires EPA to grant such a waiver to “any State which has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966.” 42 U.S.C. § 7543(b)(1). “California is the only state which had adopted emission control standards (other than crankcase emission standards) before March 30, 1966. It is thus the only state eligible for a waiver.” *MEMA I*, 627 F.2d at 1101 n.1.

development and commercialization in the California market of vehicular emission control technologies that EPA might later decide to require nationwide for the benefit of all Americans. *MEMA I*, 627 F.2d at 1109-10 (internal quotation marks omitted).

Second, Congress recognized that States other than California face challenges with air pollution control and might want the option to adopt and enforce vehicular emission standards different from—and often more stringent than—the federal standards promulgated by EPA. To that end, in Section 177 of the Clean Air Act, Congress authorized other States to adopt and enforce the vehicular emission standards for which California had obtained a preemption waiver, under certain conditions. 42 U.S.C. § 7507. In this way, Congress maintained the emission-reduction and other benefits that flow from the state regulatory experimentation that is foundational to our system of federalism while ensuring automakers can be subject to no more than two sets of emission standards.

This regulatory regime has operated as Congress intended for more than half a century. California has “expand[ed] its pioneering efforts” to reduce new motor vehicle pollution, pursuant to preemption waivers granted

by EPA. *See MEMA I*, 627 F.2d at 1111.² Seventeen other States—sometimes referred to as “Section 177 States”—have adopted some or all of California’s vehicular emission standards, having decided that those standards serve their States better than EPA’s standards.³ And EPA has continued to “draw[] heavily on the California experience to fashion and to improve the national efforts at emissions control,” thereby reducing vehicular air pollution nationwide. *See MEMA I*, 627 F.2d at 1110.⁴

Pursuant to this regulatory regime, in 2013 EPA granted California a preemption waiver for the State’s Advanced Clean Cars program, which included, among other things, the continuation of California’s zero-emission-vehicle and greenhouse gas emission standards, with increasing stringency, for model years 2017 through 2025. 78 Fed. Reg. 2112 (Jan. 9, 2013). (EPA had previously granted California waivers for these standards

² *See* <https://www.epa.gov/state-and-local-transportation/vehicle-emissions-california-waivers-and-authorizations#notices>, last visited May 16, 2022.

³ *See* [§ 177 States \(8-5-2021\) \(NADA sales\) \(ca.gov\)](#), last visited May 16, 2022. New Mexico adopted California’s light-duty vehicle emission standards on May 5, 2022. *See* [New Mexico adopts Clean Car Rule — City of Albuquerque \(cabq.gov\)](#).

⁴ *See also* October 26, 2018 California Air Resources Board Comments on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks at 44-48 (EPA-HQ-OAR-2021-0257-0132, Appendix F).

for earlier model years. 58 Fed. Reg. 4166 (Jan. 13, 1993); 71 Fed. Reg. 78,190 (Dec. 28, 2006); 74 Fed. Reg. 32,744 (July 8, 2009).)

In 2019, however, EPA dramatically changed course and withdrew the 2013 waiver for California's zero-emission-vehicle and greenhouse gas emission standards. 84 Fed. Reg. 51,310 (Sept. 27, 2019). This withdrawal was unprecedented. In the more than fifty years that California has been obtaining preemption waivers for its vehicular emission standards, EPA had never previously withdrawn a waiver, in whole or in part. *See id.* at 51,332-33. In the same Federal Register notice, EPA also announced an interpretation of Section 177 of the Clean Air Act, 42 U.S.C. § 7507, that would prohibit other States from enforcing California's greenhouse gas emission standards, even if California had a waiver for them. 84 Fed. Reg. at 51,350-51. Many Petitioners, including all of the Movant-Intervenor States, sought judicial review of EPA's actions in this Court. Case No. 19-1230 (and consolidated). After a change in presidential administrations, those cases were put into abeyance pending reconsideration by EPA.

EPA has now completed its reconsideration and has reversed its 2019 actions. Petitioners here challenge those reversals. Specifically, Petitioners seek to vacate 1) EPA's reinstatement of the portions of the 2013 waiver it withdrew in 2019 and/or 2) EPA's withdrawal of its 2019 interpretation of

Section 177. Some Petitioners may seek an even more dramatic remedy: a declaration that the waiver provision in the Clean Air Act is unconstitutional.⁵ Movant-Intervenor States include States that have adopted one or both set of California standards at issue here. These States seek to intervene to defend EPA’s actions in order to enforce their existing laws. All the Movant-Intervenor States, including those that have not adopted the California standards at issue, seek to protect the option to adopt and enforce state vehicular emission standards, as provided under the regulatory regime Congress constructed.

LEGAL STANDARD

Federal Rule of Appellate Procedure (FRAP) 15(d) authorizes intervention in circuit court proceedings to review agency actions on a motion containing “a concise statement of interest of the moving party and the grounds for intervention” that is filed “within 30 days after the petition for review.” In determining whether to grant intervention motions, this Court draws on the policies underlying Federal Rule of Civil Procedure 24 (FRCP 24). *E.g., Mass. Sch. of Law at Andover, Inc. v. United States*, 118

⁵ Certain States have previously taken the position that Congress violated principles of equal sovereignty when it created the existing regulatory regime. Case No. 19-1230, Doc. No. 1862459 (Brief of Intervenor Ohio, et al).

F.3d 776, 779 (D.C. Cir. 1997) (applying FRCP 24 to intervention for the purposes of appeal). Under FRCP 24, courts require a party requesting intervention as of right to satisfy four factors:

1) timeliness of the application to intervene; 2) a legally protected interest; 3) that the action, as a practical matter, impairs or impedes that interest; and 4) that no party to the action can adequately represent the potential intervenor's interest.

Crossroads Grassroots Pol'y Strategies v. FEC, 788 F.3d 312, 320 (D.C. Cir. 2015); *see also Old Dominion Elec. Coop. v. FERC*, 892 F.3d 1223, 1232–33 (D.C. Cir. 2018) (resolving FRAP 15(d) motion to intervene by looking “to the timeliness of the motion to intervene and whether the existing parties can be expected to vindicate the would-be intervenor’s interests”).

A court may also grant permissive intervention when a movant makes a “timely application” and the “applicant’s claim or defense and the main action have a question of law or fact in common,” FRCP 24(b)(1); *see also EEOC v. Nat’l Children’s Ctr., Inc.*, 146 F.3d 1042, 1045 (D.C. Cir. 1998); or when “a federal or state governmental officer or agency” seeks to intervene and “a party’s claim or defense is based on ... (A) a statute or executive order administered by the officer or agency; or (B) any regulation,

order, requirement, or agreement issued or made under the statute or executive order,” FRCP 24(b)(2).

ARGUMENT

I. MOVANT-INTERVENOR STATES ARE ENTITLED TO INTERVENTION AS OF RIGHT

Movant-Intervenor States easily satisfy the requirements for intervention as of right.

A. Movant-Intervenor States Have Article III Standing and Legally Protected Interests that Could Be Impaired

“The standing inquiry for an intervening-defendant is the same as for a plaintiff: the intervenor must show injury in fact, causation, and redressability.” *Crossroads Grassroots*, 788 F.3d at 316. Movant-Intervenor States can establish all three factors.

This Court’s “cases have generally found a sufficient injury in fact where a party benefits from agency action, the action is then challenged in court, and an unfavorable decision would remove the party’s benefit.” *Crossroads Grassroots*, 788 F.3d at 317. There is no question that California and the other States that have adopted California’s standards, or may wish to do so, benefit from EPA’s reinstatement of this preemption waiver. The waiver allows the Movant-Intervenor States who have already adopted these standards to enforce their own laws and allows other

qualifying States to decide for themselves, as Congress intended, whether to pursue that same course. *New Jersey v. EPA*, 989 F.3d 1038, 1045 (D.C. Cir. 2021) (“Standing is usually self-evident when the petitioner is an object of the challenged government action.”). And if EPA’s reinstatement were vacated by an unfavorable decision of this Court, those States would be injured by, once again, being preempted from enforcing their laws or exercising the options afforded to them by Congress. *Alaska v. U.S. Dep’t of Transp.*, 868 F.2d 441, 444 (D.C. Cir. 1989) (“Inasmuch as this preemptive effect is the injury of which petitioners complain, we are satisfied that the States meet the standing requirements of Article III.”); *see also Crossroads Grassroots*, 788 F.3d at 318 (“Losing the favorable order would be a significant injury in fact.”).

In addition to infringing upon their sovereign authority and the rights afforded them by Congress, the inability to enforce existing state laws would result in increased vehicular emissions in Movant-Intervenor States. Those increased emissions cause Movant-Intervenor States other harms, including the inability to “employ a duly enacted [state law] to help prevent” harms to local residents and businesses, *Maryland v. King*, 567 U.S. 1301, 1303 (2012), the inability to achieve mandatory emissions reductions, damage to

publicly owned land and infrastructure, and increased expenditures of public funds.⁶

It also “rationally follows” that the injuries Movant-Intervenor States would face are “directly traceable” to Petitioners’ challenges to EPA’s waiver reinstatement and that Movant-Intervenor States “can prevent the injur[ies] by defeating” those challenges. *Crossroads Grassroots*, 788 F.3d at 316. Thus, all three requirements for Article III standing are met as to challenges to EPA’s waiver reinstatement.

Movant-Intervenor States also have Article III standing to intervene to defend EPA’s rescission of its 2019 interpretation of Section 177. According to that interpretation, no other State could adopt and enforce California’s greenhouse gas emission standards even if California has a preemption waiver for those standards. 84 Fed. Reg. at 51,350-51. Movant-Intervenor States maintain that EPA has no authority to prevent States from exercising their congressionally authorized option to adopt California’s vehicular emission standards. *See* 42 U.S.C. § 7507. Nonetheless, EPA’s 2019 interpretation cast a cloud of uncertainty over Section 177 States’

⁶ Decl. of Sylvia Vanderspek at ¶¶ 16-20, 22-23; Decl. of Elizabeth Scheehle at ¶¶ 15, 18, 21-28, 30; Decl. of Christopher M. LaLone at ¶¶ 2, 13-14, 15, 23, 25-30, 32-35; Decl. of Mark Hammond at ¶¶ 11, 13-16, 23, 29-31; Decl. of Christine Kirby at ¶¶ 16, 22-23, 30-31, 34-35.

adoption and implementation of California’s greenhouse gas emission standards.

For example, EPA “acknowledge[d] that its action ... may have implications for certain prior and potential future EPA reviews of and actions on” State Implementation Plans to meet federal National Ambient Air Quality Standards (NAAQS), suggesting EPA would not approve—or might attempt to rescind prior approval of—a State’s plan that relied on adoption of California’s greenhouse gas emission standards for some of its emission reductions. 84 Fed. Reg. at 51,338 n.256.⁷ States would thus be forced into a perverse choice. They could choose to include or retain the California standards in their plans and risk disapproval (and the weighty consequences that can follow, *e.g.*, 42 U.S.C. § 7509(b)); or they could omit

⁷ The Clean Air Act “establishes a joint state and federal program for regulating the nation’s air quality, directing EPA to formulate national ambient air quality standards ... and requiring states to develop EPA approved plans, known as State Implementation Plans ..., describing how they will achieve and maintain the NAAQS. States that fail to comply with these requirements are subject to various sanctions” *New Jersey*, 989 F.3d at 1042. California and the Section 177 States often rely on their adoption of California vehicular emission standards as part of their State Implementation Plans, and EPA has approved multiple States’ plans that include state zero-emission vehicle and greenhouse gas emission standards (or both). *E.g.*, 82 Fed. Reg. 42,233 (Sept. 7, 2017) (Maine); 81 Fed. Reg. 39,424, 39,425 (June 16, 2016) (California); 80 Fed. Reg. 40,917 (July 14, 2015) (Delaware).

the California standards and consider imposing *additional* (and likely costly) emission-reducing measures on other sources of pollution in order to replace the emission reduction benefits of the omitted vehicular emission standards.

Movant-Intervenor States have strong interests in avoiding the injury involved in having to face such stark choices and, generally, in ensuring their abilities to attain and maintain the NAAQS. *See New Jersey*, 989 F.3d at 1047 (holding State had standing “based on harm to its ability to attain the NAAQS”).⁸ And, as above, because that injury is “directly traceable” to Petitioners’ challenges to EPA’s rescission and because Movant-Intervenor States “can prevent the injury by defeating” those challenges, all three requirements for Article III standing are met. *Crossroads Grassroots*, 788 F.3d at 316.

For the same reasons, Movant-Intervenor States also meet the FRCP 24(a) requirements for legally protected interests that may be impaired or impeded by this litigation. This Court has observed that the FRCP 24(a) and Article III standing requirements overlap substantially. *Roeder v. Islamic Republic of Iran*, 333 F.3d 228, 233 (D.C. Cir. 2003) (“One court has rightly pointed out that any person who satisfies Rule 24(a) will also meet Article

⁸ *See also* Decl. of Sylvia Vanderspek at ¶¶ 17-23; Decl. of Mark Hammond at ¶¶ 18-22.

III's standing requirement.”). Moreover, Movant-Intervenor States “clearly ha[ve] a legitimate interest in the continued enforceability of [their] own statutes,” *Cameron v. EMW Women’s Surgical Ctr., P.S.C.*, 142 S. Ct. 1002, 1004 (2022), and in the emission reduction benefits those laws are designed to produce, *Maryland*, 567 U.S. at 1303; *Alaska*, 868 F.2d at 444. It is not surprising, then, that this Court and other courts have consistently granted motions to intervene to defend these state interests with regard to other preemption waivers. *E.g.*, *MEMA I*, 627 F.2d at 1095; *Am. Trucking Associations, Inc. v. EPA*, 600 F.3d 624, 625 (D.C. Cir. 2010); *Chamber of Com. v. EPA*, 642 F.3d 192, 196 (D.C. Cir. 2011); *Dalton Trucking, Inc. v. EPA*, 846 F. App’x 442, 443 (9th Cir. 2021). As discussed above, if Petitioners are successful in their efforts to vacate EPA’s reinstatement, those interests will certainly be impaired. Movant-Intervenor States thus satisfy the interest requirements for intervention as of right under FRCP 24(a), as well as the requirements for Article III standing.

B. Movant-Intervenor States Also Satisfy the Other Requirements for Intervention as of Right

Timeliness: This motion is timely. FRAP 15(d) provides that a party seeking intervention must do so “within 30 days after the petition for review is filed.” The petition in Case No. 22-1081 was filed on May 12, 2022.

ECF Doc. No. 1946617. This motion is well within the 30-day period provided by FRAP 15(d).

Vindication of Interests by Existing Parties: Under *Old Dominion*, this Court considers “whether the existing parties can be expected to vindicate the would-be intervenor’s interests,” 892 F.3d at 1232–33, and under FRCP 24(a) this Court similarly considers whether “existing parties adequately represent” the would-be intervenor’s interests, FRCP 24(a). This final requirement for intervention is “not onerous,” and a “movant ordinarily should be allowed to intervene unless it is clear that” existing parties “will provide adequate representation.” *Crossroads Grassroots*, 788 F.3d at 321. “[G]eneral alignment” between would-be intervenors and existing parties is not dispositive. *Id.*

Movant-Intervenor States more than meet this “minimal burden.” *Id.* They have unique sovereign interests in their abilities to 1) enforce their own, existing laws; and 2) exercise the congressionally granted option to adopt and enforce California vehicular emission standards (assuming the conditions in 42 U.S.C. § 7507 are satisfied). These state sovereign interests are different from EPA’s interests in defending its actions and the grounds on which they were taken, even if Movant-Intervenor States and EPA are generally aligned in contending that the petitions should be denied. As a

consequence, EPA and Movant-Intervenor States may choose to advance different arguments or make different strategic choices in this litigation. Indeed, the history of EPA's 2013 waiver grant, its 2019 partial withdrawal, and its 2022 reinstatement indicates that EPA and Movant-Intervenor States have not always agreed on the questions at issue in this litigation and that EPA may not adequately represent these States' interests. Movant-Intervenor States therefore satisfy this final requirement for intervention as of right.

II. ALTERNATIVELY, MOVANT-INTERVENOR STATES ARE ENTITLED TO PERMISSIVE INTERVENTION

While Movant-Intervenor States readily satisfy the requirements for intervention as of right, they also satisfy the requirements for permissive intervention. Under Federal Rule of Civil Procedure 24(b)(1), courts may “permit anyone to intervene who . . . has a claim or defense that shares with the main action a common question of law or fact” so long as the motion is timely and intervention would not “unduly delay or prejudice the rights of the original parties.” FRCP 24(b)(1)(B), (3). As discussed above, this motion is timely, and there is no basis for a conclusion that Movant-Intervenor States' intervention at this early stage will cause undue delay or prejudice.

Moreover, as discussed above, Movant-Intervenor States seek to intervene to protect their ability to adopt and enforce their own laws and to exercise their congressionally established rights to choose which vehicular emission standards will be enforceable within their respective jurisdictions. The claims and defenses of Movant-Intervenor States unquestionably share commonality with the petitions which seek to prevent these States from adopting and enforcing their own laws and from exercising their congressionally provided rights.

In addition, to the extent that any “party's claim or defense”—such as a party’s claims concerning injuries as a basis for standing—is based on the state regulatory programs that are the subject of EPA’s preemption waiver reinstatement, the Movant-Intervenor States that administer those programs are entitled to permissive intervention under Federal Rule of Civil Procedure 24(b)(2).

CONCLUSION

Movant-Intervenor States respectfully request that this Court grant them intervention as of right or, in the alternative, permissive intervention, for the reasons discussed above.

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CERTIFICATE OF PARTIES ADDENDUM

Pursuant to Circuit Rule 27(a)(4) and 28(a)(1)(A), I certify that the parties are set forth below.

Petitioners: Petitioners in Case No. 22-1081 are the States of Ohio, Alabama, Arkansas, Georgia, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nebraska, Oklahoma, South Carolina, Texas, Utah, and West Virginia.

Petitioners in Case No. 22-1084 are American Fuel and Petrochemical Manufacturers, Domestic Energy Producers Alliance, Energy Marketers of America, and National Association of Convenience Stores.

Petitioners in Case. No. 22-1085 are Clean Fuels Development Coalition, ICM, Inc., Illinois Corn Growers Association, Kansas Corn Growers Association, Michigan Corn Growers Association, Missouri Corn Growers Association, and Valero Renewable Fuels Company, LLC.

Respondents: Respondents are the U.S. Environmental Protection Agency and (in Case No. 22-1081) its Administrator, Michael S. Regan, in his official capacity.

Intervenors: There are no other intervenors or movant-intervenors at the time of this filing.

Amici Curiae: There are no amici curiae at the time of this filing.

Dated: May 19, 2022

/s/ M. Elaine Meckenstock

M. Elaine Meckenstock

*Attorney for State of California, by and
through its Governor Gavin Newsom,
its Attorney General Rob Bonta, and
the California Air Resources Board*

CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing motion complies with the type-volume limitations of Federal Rule of Appellate Procedure 27(d)(2) because it contains 3,481 words. I further certify that this motion complies with the typeface requirements of Federal Rules of Appellate Procedure 27(d)(1)(E), 32(a)(5), and 32(a)(6) because it has been prepared using a proportionally spaced typeface (Times New Roman) in 14-point font.

Dated: May 19, 2022

/s/ M. Elaine Meckenstock

M. Elaine Meckenstock

*Attorney for State of California, by and
through its Governor Gavin Newsom,
its Attorney General Rob Bonta, and
the California Air Resources Board*

CERTIFICATE OF SERVICE

I hereby certify that on May 19, 2022 I electronically filed the foregoing motion with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit using the Court's CM/ECF system.

I further certify that all parties are participating in the Court's CM/ECF system and will be served electronically by that system.

Dated: May 19, 2022

/s/ M. Elaine Meckenstock

M. Elaine Meckenstock

Attorney for State of California, by and through its Governor Gavin Newsom, its Attorney General Rob Bonta, and the California Air Resources Board

DECLARATION OF SYLVIA VANDERSPEK

I, Sylvia Vanderspek, declare as follows:

Relevant expertise

1. I make this declaration based upon my knowledge and expertise in the matters within, my review of the relevant rulemakings, reports, and other documents discussed below, and (where indicated) information provided by my colleagues at the California Air Resources Board (CARB). I submit this declaration in support of Movant-Intervenor State of California's Motion to Intervene in this challenge.

2. I am the Chief of the Air Quality Planning Branch in the Air Quality Planning & Science Division at CARB. I have held this position since May 2013.

3. I am the lead manager responsible for the Clean Air Act state implementation planning and control strategy development throughout the State for meeting air quality standards. The State Implementation Plan is required by the Clean Air Act for areas that do not meet air quality standards and describes how those air quality standards will be met by their attainment deadline. As part of the control strategy development, I oversaw the development of the 2016 Mobile

Source Strategy¹ and 2020 Mobile Source Strategy² integrating the technologies for and approaches to criteria emission reductions with climate and toxic emission reductions in the mobile source sector. The Mobile Source Strategies build upon past and inform future State Implementation Plans as well as California's Climate Change Scoping Plan and Community Emission Reduction Plans.

4. In fulfilling my responsibilities as the lead manager for Clean Air Act state implementation planning throughout the State, I routinely review relevant plans and reports, and in doing so rely on my knowledge of: atmospheric modeling of air pollution, atmospheric reactions that contribute to air pollution, air pollution trends and projections, other causes of air pollution, and the health effects of air pollution. My knowledge of atmospheric modeling, including the atmospheric reactions that contribute to air pollution, is critical to my management of State Implementation Plan planning in order to identify the most effective strategies for providing healthy air for the residents of California. I also use my knowledge of air pollution trends and emissions, along with future emission projections, when overseeing the selection of future strategies and their impact on air quality. And as part of the State Implementation Plan planning process, I must analyze the health effects of criteria pollutants and other air pollutants.

¹ Mobile Source Strategy (May 2016), <https://ww3.arb.ca.gov/planning/sip/2016sip/2016mobsrsrc.pdf>.

² Mobile Source Strategy (Oct. 2021), [2020 Mobile Source Strategy \(ca.gov\)](https://ww3.arb.ca.gov/planning/sip/2020sip/2020mobsrsrc.pdf).

5. Prior to this, I was the manager of the Particulate Matter Analysis Section in the Planning and Technical Support Division at CARB from February 2006 until May 2013. In this role, I supervised the development of particulate matter State Implementation Plans statewide and ozone State Implementation Plans for the San Joaquin Valley air basin. In addition, I oversaw development of the technical support analyses required to address particulate matter pollution and meet air quality standards in California.

6. Prior to that, I was a staff member of the Transportation Strategies Section in the Planning and Technical Support Division from April 2001 until February 2006 working on particulate matter and ozone implementation plans.

7. I have a Bachelor of Science in Agricultural Engineering from California Polytechnic State University, San Luis Obispo.

Clean Air Act planning obligations

8. The federal Clean Air Act (Act) requires EPA to set National Ambient Air Quality Standards (NAAQS) for six “criteria” pollutants. The Act also requires states to develop and enforce implementation plans for “nonattainment” areas, i.e., areas of the State that do not meet the NAAQS or contribute to a nearby area that does not meet the NAAQS. Nonattainment areas have air pollution surpassing levels the federal government has deemed requisite to protect public health and the environment.

9. The NAAQS for two of these criteria pollutants—ozone and fine particulate matter (PM_{2.5})—are particularly relevant in California. California suffers some of the worst air pollution in the nation. The South Coast and San Joaquin Valley air basins are the only two regions in the country classified as ‘Extreme’—the worst category—for nonattainment of the federal ozone standard of 75 parts per billion (ppb). These areas also suffer some of the worst levels of PM_{2.5} pollution.

10. For all of the State’s nonattainment areas, California must implement all reasonably available pollution control measures as expeditiously as practicable. California’s ozone and PM_{2.5} nonattainment areas rely on immediate emission reductions to provide critical health benefits and to demonstrate attainment of the standards in those areas with near-term attainment dates. California also has an interest in reducing harmful pollution across the State—including in areas that have attained the federal NAAQS—both because California must at least maintain attained air quality and because reducing this harmful pollution protects human health and the environment.

11. For the South Coast and San Joaquin Valley air basins, there are impending deadlines to attain various NAAQS: 2022 for 1-hour ozone, 2023 for 80 ppb ozone, 2024 for 24-hour PM_{2.5}, 2025 for annual PM_{2.5}, and 2031 for 75 ppb ozone, as well as later years. Attaining these NAAQS, especially for ozone,

requires sustained, comprehensive action to reduce emissions from all categories of sources. For instance, to achieve the ozone standards by 2031, CARB must reduce smog-forming NO_x emissions from on-road light-and heavy-duty vehicles by 85% from 2015 levels.³

12. Other areas of California also do not meet the NAAQS. For example, the Sacramento ozone nonattainment area is required to attain the 75 ppb 8-hour ozone standard by 2024.

13. If an area attains an air quality standard and is redesignated as attainment, it must develop a maintenance plan with measures and controls ensuring its air quality levels continue to remain below the standard.

14. If an area does not attain an air quality standard by the applicable deadline under the Clean Air Act, the consequences are substantial. In addition to the public health and environmental consequences, failure to meet a standard in the time required imposes additional obligations on the State to develop and submit a new plan that could lead to increased costs and restrictions on the myriad activities that cause air pollution.

15. California also has its own Clean Air Act, under which CARB has established state ambient air quality standards. These standards are generally more

³ See, e.g., CARB, Revised Proposed 2016 State Strategy for the State Implementation Plan at 8, 11 (Mar. 7, 2017), <https://ww3.arb.ca.gov/planning/sip/2016sip/rev2016statesip.pdf>.

stringent than their federal counterparts, and CARB and the local air districts are mandated to meet and maintain those standards as well.⁴

California's Zero-Emission Vehicle Standards and Greenhouse Gas Emission Standards for Light-duty Vehicles Are Important for Reducing Criteria Pollution

16. California's zero-emission vehicle (ZEV) and greenhouse gas emission standards for light-duty vehicles are critical tools for reducing emissions of criteria pollutants and greenhouse gases and thereby achieving attainment of NAAQS for particulate matter and ozone.

17. Since 2009, the ZEV standards have required increased sales of ZEVs in the light-duty vehicle fleet over time. ZEVs emit fewer criteria pollutants than do conventional gasoline-fueled vehicles. For instance, ZEVs have zero evaporative emissions of hydrocarbons, and they have lower emissions of NO_x, reactive organic gases, and fine particulate matter, even after accounting for emissions associated with electricity generation. Therefore, ZEV displacement of combustion-engine vehicles, to comply with both the ZEV standard and the greenhouse gas emission standard, reduces these emissions and ambient concentrations of PM_{2.5} and ozone. In fact, in its 2016 Strategy for the State Implementation Plan, California relied on its ZEV standards as a critical

⁴ *E.g.*, Cal. Health & Safety Code §§ 39606, 40910–40930.

component to meet the PM_{2.5} and ozone NAAQS.⁵ The ZEV standards are a critical component in the Extreme ozone state implementation plans for the San Joaquin Valley and the South Coast air basins.⁶

18. ZEV technology has significantly advanced since CARB adopted its greenhouse gas emission and ZEV standards beginning with the 2012 model year. As zero-emission technology has improved for light-duty vehicles, the technology has and will become available for other applications. This will lead to even greater criteria, toxic, and greenhouse gas emission reductions over time. This expansion is essential for California to meet its goals and obligations to reduce emissions, as explained, for example, in CARB's 2016 and 2020 Mobile Source Strategies. This comprehensive planning document describes how the State relies on zero-emission technology and other emission reductions to simultaneously meet health-based air quality standards, greenhouse gas emission reduction targets, and its other pollution-related goals. Pertinent here, the 2016 Mobile Source Strategy described "actions to deploy zero-emission technologies across a broad spectrum of sources,

⁵ CARB, Revised Proposed 2016 State Strategy for the State Implementation Plan (Mar. 7, 2017).

⁶ San Joaquin Valley APCD, 2016 Ozone Plan for 2008 8-Hour Ozone Standard (June 16, 2016); South Coast AQMD, 2016 Air Quality Management Plan (March 3, 2017).

including passenger vehicles, targeted truck and bus applications, forklifts, transport refrigeration units, and airport ground support equipment.”⁷

19. In addition, the greenhouse gas emission reductions associated with CARB’s greenhouse gas emission and ZEV standards are critical for attaining the NAAQS. Climate change is making it more difficult to attain the NAAQS for ozone and particulate matter because the concentrations of both pollutants depend strongly on temperature. Studies indicate that increasing temperatures generally cause increases in ozone concentrations in California’s polluted regions due to accelerated chemical reaction rates.⁸ Additional emission controls will need to be

⁷ Mobile Source Strategy at 7 (May 2016), <https://ww3.arb.ca.gov/planning/sip/2016sip/2016mobsrsrc.pdf>.

⁸ E.g., Zhu, Shupeng, Jeremy R Horne, Michael Mac Kinnon, G S Samuelsen, and Donald Dabdub. 2019. “*Comprehensively Assessing the Drivers of Future Air Quality in California*.” *Environment International* 125: 386–98. <https://doi.org/10.1016/j.envint.2019.02.007>; Kerry Kline, “*As temperatures rise, air quality experts keep an eye on ‘ozone climate penalty’*”, KVPR (Nov. 16, 2021), [As temperatures rise, air quality experts keep an eye on ‘ozone climate penalty’](https://www.kvpr.org/news/as-temperatures-rise-air-quality-experts-keep-an-eye-on-ozone-climate-penalty/) (kvpr.org). The American Lung Association’s State of the Air: 2018 report also found that California’s ozone levels rose significantly in 2016 due to extreme temperatures (page 4), and its State of the Air: 2021 report also notes the continuing role warming temperatures play on air quality (pages 13 & 14, [State of the Air 2021](https://www.lung.org/state-of-the-air) (lung.org)).

implemented to make up for the “climate penalty” that causes higher air pollutant concentrations.^{9,10,11}

20. The increased frequency of extreme heat events, wildfires, and droughts due to climate change will also impede progress toward attainment. Decades of air pollution gains within the western United States are being erased by the increasing number and severity of wildfires.¹² For instance, intense heat waves and widespread wildfire smoke has caused Southern California to experience worse air pollution readings and highest number of health-damaging bad air-days since the mid-1990s. Smoke from wildfires contains fine particulate matter, which is the most damaging size of particulate matter for human health. Similarly, climate change is increasing the frequency of droughts, which will increase wind erosion and ambient dust concentration.¹³ As soils become increasingly dry during a drought, dust from the ground is more likely to become airborne. Particulate matter suspended in the air from these events or from wildfire smoke can increase

⁹ D.J. Jacob & D.A. Winner, *Effect of Climate Change on Air Quality*, *ATMOS. ENVIRON.* 43, 51–63 (2009).

¹⁰ S. Wu, et al., *Effects of 2000–2050 Global Change on Ozone Air Quality in the United States*, *J. GEOPHYS. RES.-ATMOS.*, 113 (2008).

¹¹ A.M. Fiore, et al., *Air Quality and Climate Connections*, *J. AIR WASTE MANAGE. ASSOC.* 65 (6), 645–685 (2015).

¹² *Proc. Nat’l Acad. Sci.* (Jul. 16, 2018), <https://www.ncbi.nlm.nih.gov/pubmed/30012611>.

¹³ M.C. Duniway, et al., *Wind Erosion and Dust from US Drylands: A Review of Causes, Consequences, and Solutions in a Changing World*, *ECOSPHERE* 10(3) (2019).

the risk for respiratory infections like bronchitis and pneumonia, which will result in greater health costs to the State.^{14,15}

Overturing California’s waiver restoration for its existing ZEV and greenhouse gas standards increases criteria pollutant and greenhouse gas emissions and jeopardizes several of California’s NAAQS attainment plans by necessitating additional emission reductions.

21. In 2013, California obtained from U.S. EPA a waiver of preemption under the Clean Air Act for its current light-duty vehicle greenhouse gas, ZEV standards, and criteria pollutant standards that were part of California’s “Advanced Clean Cars” program (the 2013 waiver). In September 2019, EPA took the unprecedented action of withdrawing the 2013 waiver for California’s greenhouse gas emission and ZEV standards (the so-called “SAFE” Part One Rule).¹⁶ California challenged EPA’s SAFE Part One Rule as arbitrary, capricious, and unlawful. That litigation was stayed upon the Biden Administration’s direction to EPA to reconsider its SAFE rules. EPA restored the withdrawn portions of the 2013 waiver in March 2022.¹⁷ That restoration has now been challenged. Should EPA’s restoration of California’s Clean Air Act waiver for the State’s existing

¹⁴ C. Stanke, et al., *Health Effects of Drought: A Systematic Review of the Evidence*, PLOS CURRENTS, 5 (2013).

¹⁵ See, e.g., C.G. Jones, et al., *Out-of-Hospital Cardiac Arrests and Wildfire-Related Particulate Matter During 2015-2017 California Wildfires*, J. AM. HEART ASSOC. 9(8) (2020).

¹⁶ 84 Fed. Reg. 51,310 (Sept. 27, 2019).

¹⁷ 87 Fed. Reg. 14,332 (March 14, 2022).

light-duty vehicle greenhouse gas emission and ZEV standards be overturned, it would result in higher criteria pollutant and greenhouse gas emissions and increase concentrations of ground-level ozone and particulate matter.

22. In particular, without enforceable ZEV sales requirements, it is reasonable to expect that there would be fewer ZEVs produced and sold than would otherwise have been to meet existing requirements, and thus additional gasoline-fueled vehicles produced and sold during these model years to meet the market's demand for vehicles, all else being equal. This would increase criteria pollutant emissions, as CARB modeling has confirmed.¹⁸ And the increase in greenhouse gas emissions resulting from preemption of both standards will also impede progress toward attaining NAAQS.

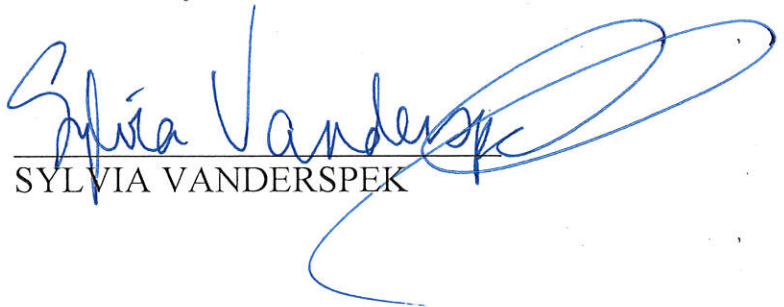
23. As a result, for each of California's current implementation plans that included the ZEV mandate, California could not rely on the expected emission reductions from its requirements for clean transportation. The increased emissions that would result from reversal of the waiver restoration would need to be mitigated by developing additional enforceable control measures. But the

¹⁸ *E.g.*, CARB, Appendix A to Comments of States and Cities in Support of EPA Reversing its SAFE 1 Actions, at 2-3 (July 6, 2021), Docket No. EPA-HQ-OAR-2021-0257-0132 (hereinafter "2021 Multistate Comments"); CARB, Appendix B to 2021 Multistate Comments, at 11-14; Analysis in Support of Comments of the California Air Resources Board on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, at 69, 288, 294-302 (Oct. 26, 2018), Docket No. NHTSA-2018-0067-11873.

implementation plans already include all reasonably available control measures and other measures necessary to attain the standards by the Clean Air Act's deadlines. Moreover, section 182(e)(5) of the Clean Air Act allows Extreme ozone nonattainment areas to anticipate development of new control techniques or improvement of existing control technologies and rely on those to demonstrate attainment in the implementation plan; CARB has already worked with the South Coast air district to include these new or improved technologies expectations into the existing implementation plan¹⁹—and this was based in part on a robust State ZEV mandate. Developing additional control measures, therefore, would be onerous in all nonattainment areas, but would be particularly hard in the South Coast and San Joaquin Valley air basins.

I certify under penalty of perjury under the laws of the State of California and the United States of America that the foregoing is true and correct.

Executed on May 16, 2022, at Sacramento, County of Sacramento, California.


SYLVIA VANDERSPEK

¹⁹ See 84 Fed. Reg. 28,132, 28,135-36 (June 17, 2019) for U.S. EPA's proposed approval of California's comprehensive plan for the South Coast air basin to meet multiple ozone NAAQS that relies on new technologies under Section 182(e)(5) of the Clean Air Act, and additional commitments from the District to reduce emissions.

DECLARATION OF ELIZABETH SCHEEHLE

I, Elizabeth Scheehle, state and declare as follows:

Experience

1. I am currently the Chief of the Research Division of the California Air Resources Board (CARB). I have a B.S. in Earth and Atmospheric Sciences from the Georgia Institute of Technology, a Masters of Public Policy from the Kennedy School of Government at Harvard University, and a Masters of Public Health from the Bloomberg School of Public Health at Johns Hopkins University.

2. I have worked for more than 20 years in climate change and air quality programs, starting at the U.S. Environmental Protection Agency (U.S. EPA) where I led national and international efforts on non-carbon dioxide greenhouse gases (GHGs). I served as an expert for the United Nations Framework Convention on Climate Change and the Intergovernmental Panel on Climate Change (IPCC). In that role, I earned recognition for my contribution to the IPCC's Nobel Prize. I continued my career at U.S. EPA, developing its Carbon Capture and Sequestration expertise, including comprehensive risk assessment considerations.

3. I joined CARB's Research Division in 2007 and led three climate change-related efforts: carbon capture and sequestration, an ozone-depleting substance offset protocol, and an early action climate measure. I was a Section

Manager of the Research Division's GHG Technology and Field-Testing Section before next joining the Cap-and-Trade Program in CARB's Industrial Strategies Division. In 2014, I became a Branch Chief in the Industrial Strategies Division, overseeing programs related to oil and gas operations, alternative fuel regulations, and carbon capture and sequestration.

4. In 2018, I began my current role of Chief of the Research Division. In that capacity, I oversee CARB's research program, which investigates the causes of human health and welfare impacts from air pollutant emissions and the potential for reducing those impacts through emission reduction strategies. I also lead the development and implementation of multidisciplinary research plans and studies to provide a robust scientific foundation for our air quality and climate policy decisions. In addition, the Division implements programs on indoor air quality and high global-warming potential gas mitigation. I have broad experience with climate science and research.

5. I make this declaration based upon my knowledge and expertise in the matters within and upon my review of relevant rulemakings, reports, and other documents discussed below. I submit this declaration in support of the Movant-Intervenor State of California's Motion to Intervene.

Climate Change

6. Climate change is driven by the accumulation of greenhouse gases in the atmosphere. Greenhouse gases retain heat that would otherwise escape back to space. Increasing concentrations of greenhouse gases in the atmosphere thus cause a continuing increase of the planet's average temperature over time, which in turn disrupts established geophysical systems (such as ocean circulation) and ecosystems across the globe. Since the Industrial Revolution, the predominant source of climate change-causing greenhouse gas emissions has been human activities. Human activities cause the emission of greenhouse gases in various ways, including deforestation and the combustion of fossil fuels for energy.

7. Of all the long-lived greenhouse gases, the ones that have the largest climate impact are carbon dioxide (CO₂), methane, and nitrous oxide. Of those three, CO₂ is the most important because, even though it absorbs less heat per molecule than methane or nitrous oxide, it is more abundant and stays in the atmosphere much longer. Before the Industrial Revolution started in the mid-1700s, the global average amount of CO₂ was about 280 parts per million. The most recent data from the National Oceanic and Atmospheric Association (NOAA) shows average global CO₂ concentrations, measured at Mauna Loa Observatory, peaked for 2021 in May at a monthly average of 419 parts per million (ppm), the highest level since accurate measurements began 63 years ago

in Hawaii in 1958.¹ In August 2021, the IPCC Working Group 1 released part of the 6th Assessment Report (AR6) titled “Climate Change 2021: The Physical Basis”², which reaffirmed with high confidence that there is a near-linear relationship between cumulative anthropogenic CO₂ emissions and the global warming they cause. This temperature response to increasing carbon dioxide levels in the atmosphere is a critical metric that provides foresight into the potential adverse impacts of climate change.

8. Because of this dramatic uptick in CO₂ concentrations, the average global surface temperature has increased by around 1.1 degrees Celsius compared with the average in 1850–1900—a level that hasn’t been witnessed since 125,000 years ago, before the most recent ice age.³ According to independent analyses by the National Aeronautics and Space Administration (NASA) and NOAA, Earth’s average global surface temperatures in 2019 were the second warmest (following 2016) since measurements began in 1880, and the past five years have been the

¹ NOAA Global Monitoring Laboratory, <https://research.noaa.gov/article/ArtMID/587/ArticleID/2764/Coronavirus-response-barely-slows-rising-carbon-dioxide>
<https://www.esrl.noaa.gov/gmd/ccgg/trends/>.

² IPCC AR6 Climate Change 2021: The Physical Science Basis. [Sixth Assessment Report \(ipcc.ch\)](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf)

³ IPCC AR6 2021, *Summary for Policymakers*, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf (IPCC uses the reference period 1850–1900 to approximate pre-industrial temperature, as this is the earliest period with near-global observations.).

warmest of the last 140 years.⁴ Earth's global average surface temperature in 2020 tied with 2016 as the warmest year on record, according to an analysis by NASA.⁵

9. The warming climate is also driving up ocean surface temperatures. The ocean has absorbed about 29 percent of global CO₂ emissions since the end of the pre-industrial era. Adding additional CO₂ to the ocean is changing the ocean's chemistry, making it more acidic and slowing its ability to take up more CO₂. If the ocean starts to take up less CO₂, more is left in the atmosphere where it can contribute to additional warming. Furthermore, warming global and regional temperatures are contributing to rising sea levels, from both thermal expansion of the ocean itself and melting sea ice and glaciers around the world. The IPCC 2021 Summary for Policymakers (SPM)⁶ provides a high-level summary of the understanding of the current state of the climate. The SPM report states it is very likely to virtually certain that regional mean relative sea level rise will continue throughout the 21st century. Extreme sea level events that occurred once per

⁴ James Hanson, et al., Global Temperature in 2019 (Jan. 15, 2020), http://www.columbia.edu/~jeh1/mailings/2020/20200115_Temperature2019.pdf.

⁵ <https://www.nasa.gov/press-release/2020-tied-for-warmest-year-on-record-nasa-analysis-shows>

⁶

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf

century in the recent past are projected to occur at least annually, which will lead to loss of land, resources, infrastructure, and life. Several recent studies further demonstrated the extraordinary nature of these impacts by finding that prior studies had underestimated the impacts of sea-level rise, storms, and flooding in California;⁷ demonstrating that local CO₂ concentrations above Monterey Bay fluctuate by time of day likely because of the surrounding environment and topography, likely increasing the expected rate of acidification of the Bay;⁸ and showing the waters of the California current ecosystem have already acidified by over twice the global average.⁹

10. The timing of greenhouse gas emissions is also important because greenhouse gases can remain in the atmosphere for long periods of time. Their warming effect is compounded by future emissions, thereby accelerating climate impacts. Carbon dioxide in particular remains in the atmosphere longer than the

⁷ Patrick L. Barnard, et al., “Dynamic Flood Modeling Essential to Assess the Coastal Impacts of Climate Change,” 9 SCIENTIFIC REPORTS 4309 (Mar. 13, 2019) (submitted to the docket in NGO Letter, Apr. 5, 2019 (Docket #EPA-HQ-OAR- 2018-0283-7452)).

⁸ Northcott D., Sevajian J., Sancho-Gallegos D.A., Wahl C., Friederich J., Chavez F.P. (2019) Impacts of urban carbon dioxide emissions on sea-air flux and ocean acidification in nearshore waters. PLoS ONE 14(3): e0214403.

<https://doi.org/10.1371/journal.pone.0214403> (submitted to the record in CARB Letter, May 31, 2019 (NHTSA-2018-0067-12411)).

⁹ Osborne, E.B., Thunell, R.C., Gruber, N. *et al.* Decadal variability in twentieth-century ocean acidification in the California Current Ecosystem. *Nat. Geosci.* (2019) doi:10.1038/s41561-019-0499-z.

other major greenhouse gases emitted as a result of human activities. Carbon dioxide's lifetime is difficult to represent with a single value because it moves at varying rates among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide is absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments. As explained in the Fourth National Climate Assessment, “[w]aiting to begin reducing emissions is likely to increase the damages from climate-related extreme events (such as heat waves, droughts, wildfires, flash floods, and stronger storm surges due to higher sea levels and more powerful hurricanes).”¹⁰

11. The timing of greenhouse gas emissions also affects the likelihood of reaching climate tipping points. Tipping points are thresholds of abrupt and irreversible change (such as creating an irreversible shift to a hotter world with higher sea levels, changes in ocean circulation, or near-permanent drought in some regions). Two IPCC Special Reports (published in 2018 and 2019)^{11,12} suggest

¹⁰ Global Change Research Program, *Impacts, Risks, and Adaptation in the United States: National Climate Assessment, Volume I*, at 1488 (2018).

¹¹ IPCC, *Global Warming of 1.5°C* (2018), <https://www.ipcc.ch/sr15/>.

¹² IPCC, *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* (2019), <https://www.ipcc.ch/2019/09/25/srocc-press-release/>.

that tipping points could be exceeded by warming of even between 1 and 2 degrees Celsius. The IPCC 2021 AR6 places new emphasis on climate tipping points. The report defines a tipping point as an “abrupt change” — a threshold that, once crossed, can cause elements of the Earth system to change into an entirely different state. These tipping points have varying degrees of probability, but are high-risk in that they could lead to dramatic changes in the climate system. A recent commentary in the journal *Nature* warned that the acceleration of ice loss and other effects of climate change have brought the world “dangerously close” to tipping points.¹³ As global temperature increases, threshold environmental events are increasingly likely to occur that will themselves significantly accelerate climate change beyond current projections.

California’s Climate Laws and Light-Duty Vehicle Emission Standards

13. California has been proactive in taking steps to reduce greenhouse gas emissions. In 2004, California enacted the Nation’s first law requiring limits on vehicular greenhouse gas emissions, Cal. Health & Safety Code § 43018.5, and CARB subsequently adopted regulations establishing such limits, 13 Cal. Code Regs. §§ 1961.1, 1961.3. In 2006, California enacted Assembly Bill (AB) 32, the

¹³ Timothy M. Lenton, et al., *Comment: Climate Tipping Points - Too Risky to Bet Against*, *NATURE* (Apr. 9, 2020) <https://www.nature.com/articles/d41586-019-03595-0>.

Global Warming Solutions Act, requiring the State to reduce its greenhouse gas emissions to 1990 levels by 2020. This legislation directed CARB to adopt regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions. It further directed CARB to develop a Scoping Plan laying out California's strategy for meeting its climate goals, to be updated every five years. In 2016, the State Legislature set more ambitious goals in Senate Bill (SB) 32, which directs CARB to ensure that State greenhouse gas emissions are reduced 40 percent below 1990 levels by 2030.

14. As part of its efforts to reduce both greenhouse gas emissions and criteria pollutants (air pollutants with national ambient air quality standards), CARB has regulated emissions from light-duty vehicles since 1959. In 2012, CARB combined these emission standards and established its Advanced Clean Cars program. In 2013, California obtained from U.S. EPA a waiver of preemption under the Clean Air Act for this program (the 2013 waiver), including the State's vehicle criteria pollutant standards, greenhouse gas emission standards, and zero-emission vehicle (ZEV) mandate.

15. California's ZEV mandate is technology forcing, as it has required increasing numbers of ZEVs to be sold annually within the State since 2009.¹⁴ And it has been successful: sales of ZEVs have risen to more than 7 percent of new

¹⁴ 13 Cal. Code Regs. §§ 1962.1, 1962.2.

car sales in California, equal to more than 140,000 ZEVs and plug-in hybrids in 2019.¹⁵ California's current ZEV regulations are on track to produce 1.5 million ZEVs on the road by 2025 and over 2 million by 2030. California's light-duty vehicle greenhouse gas standards also produce year-over-year reductions in greenhouse gas emissions, by about 5 percent per year for model years 2020 through 2025.¹⁶ Because light-duty vehicles remain the largest source of emissions within the transportation sector and are responsible for 70 percent of the State's transportation greenhouse gas emissions, California's light-duty vehicle greenhouse gas emission standards and the ZEV mandate with its resulting technological penetration were key pieces to California's 2017 Scoping Plan update, by which the State outlined how it would meet its increasingly stringent climate obligations.¹⁷

The EPA's 2013 Waiver Revocation and Restoration

16. In 2018, EPA took the unprecedented action of proposing to withdraw the portions of the 2013 waiver for California's greenhouse gas emission and ZEV standards, an action it finalized in September 2019 (the so-called "SAFE" Part One

¹⁵ *E.g.*, California New Car Dealers Association, 16 CAL. AUTO OUTLOOK, no. 1, Feb. 2020, at 2, <https://www.cncda.org/wp-content/uploads/Cal-Covering-4Q-19.pdf>.

¹⁶ 13 Cal. Code Regs. § 1961.3.

¹⁷ *E.g.*, CARB, *California's 2017 Climate Change Scoping Plan* at 25 (Nov. 2017), https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

Rule).¹⁸ California challenged EPA's SAFE Part One Rule as arbitrary, capricious, and unlawful. That litigation was stayed upon the Biden Administration's direction to EPA to reconsider its SAFE rules.

17. EPA restored the withdrawn portions of the 2013 waiver in March 2022.¹⁹ That restoration has now been challenged. Should EPA's restoration of California's 2013 waiver for the State's existing light-duty vehicle greenhouse gas emission and ZEV standards be overturned, it would result in higher greenhouse gas and criteria pollutant emissions. Indeed, fewer ZEVs are likely to be sold than would otherwise have been to meet existing requirements, all else equal, and thus additional gasoline-fueled vehicles would be sold during these model years. These additional gasoline-fueled cars would produce substantially more greenhouse gas emissions over their lifetimes than the ZEVs they will displace not only because gasoline-fueled vehicles produce emissions, unlike ZEVs, but also because vehicle tailpipe and evaporative emissions substantially increase over time due to the deterioration of the emission controls. For instance, a model year 2020 gasoline-fueled vehicle overall produces about four times as many greenhouse gas emissions as a ZEV.²⁰

¹⁸ 84 Fed. Reg. 51,310 (Sept. 27, 2019); 83 Fed. Reg. 42,986 (Aug. 24, 2018).

¹⁹ 87 Fed. Reg. 14,332 (March 14, 2022).

²⁰ CARB, *Fact Sheet: The Zero Emission Vehicle (ZEV) Regulation* (2018), https://ww2.arb.ca.gov/sites/default/files/2019-06/zev_regulation_factsheet_082418_0.pdf.

18. Over time, these repercussions will expand. Without the critical push from the ZEV standards, ZEVs' market share would likely fail to expand at the rate needed to meet California's climate and public health requirements. This loss of greenhouse gas emissions reductions amplifies the risk of further climate impacts California is already facing, as discussed below.

Climate Change Impacts on California

19. California is one of the most geographically and ecologically diverse regions in the world, with landscapes ranging from chaparral and grasslands to sandy beaches and rugged coastal areas to redwood rainforests and dense interior forests to snow-covered alpine mountains to dry desert valleys. Each of these regions experiences a unique combination of impacts from climate change. From record temperatures to increasingly intense wildfires²¹ to rising sea levels and increasingly acidic seas²² to less reliable snowpack,²³ climate change poses an

²¹ N.S. Diffenbaugh, A.G. Konings, C.B. Field, (2021). Atmospheric variability contributes to increasing wildfire weather but not as much as global warming. *Proceedings of the National Academy of Sciences* Nov 2021, 118 (46) e2117876118; DOI: 10.1073/pnas.2117876118.

<https://www.pnas.org/content/118/46/e2117876118>

²² E.B. Osborne, et al., *Decadal Variability in Twentieth-century Ocean Acidification in the California Current Ecosystem*, 13 *NAT. GEOSCI.* 43–49 (2020), <https://doi.org/10.1038/s41561-019-0499-z>.

²³ P.W. Mote, et al., *Dramatic Declines in Snowpack in the Western US*, 1 *NATURE PARTNER JS. CLIM. ATMOS. SCI.* (2018), <https://doi.org/10.1038/s41612-018-0012-1>.

immediate and escalating threat to California's environment, public health, and economic vitality.

20. California is already experiencing the effects of climate change, and it is expected that these effects will worsen in the coming decades, particularly if actions are not taken to mitigate greenhouse gas emissions. For instance, consistent with global and US observations, California temperatures have risen since records began in 1895, with the rate of increase accelerating since the 1980s.²⁴ Data released in fall of 2020 by NOAA's National Centers for Environmental Information²⁵ shows that September 2020 officially ranks as California's hottest September since record-keeping began in 1880. Tracking with rising temperatures, California's 2020 fire season was record-breaking, not only in the total amount of acres burned (at just over 4 million) but also in wildfire size: 6 of the 20 largest wildfires in California history occurred in 2020. In 2021, the period from June through August was the hottest on record in the United States, exceeding even the Dust Bowl summer of 1936, and five states—California,

²⁴ Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (2018). Indicators of Climate Change in California. <https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf>.

²⁵ NOAA, Earth just had its hottest September on record (Oct. 14, 2020), <https://www.noaa.gov/news/earth-just-had-its-hottest-september-on-record>.

Idaho, Nevada, Oregon and Utah—recorded their warmest summers on record.²⁶

Warmer air temperatures alter precipitation and runoff patterns, affecting the availability of freshwater supplies. Temperature changes can also increase the risk of severe weather events, such as heat waves and intense storms. A wide range of impacts on ecosystems and on human health and well-being are associated with increased temperatures.²⁷

21. The increasing temperatures and occurrence of extreme heat events are requiring local governments to expand provision of cooling centers. Each cooling center costs around \$2,000 per day to operate.²⁸ The State's 2021-2022 spending plan also includes, for the first time, a 3-year climate resiliency package totaling \$3.7 billion, with \$800 million specifically allocated for extreme heat-related efforts (including mitigation, urban greening, and community resilience

²⁶ <https://www.noaa.gov/news/summer-2021-neck-and-neck-with-dust-bowl-summer-for-hottest-on-record>

²⁷ Office of Environmental Health Hazard Assessment, *Indicators of Climate Change*, oehha.ca.gov/climate-change/document/indicators-climate-change-california.

²⁸ E.g., Chris Nichols, *Despite The Heat, Few Take Advantage Of Sacramento Cooling Centers*, CAPRADIO (June 18, 2021), [Despite The Heat, Few Take Advantage Of Sacramento Cooling Centers - capradio.org](https://www.capradio.org/news/despite-the-heat-few-take-advantage-of-sacramento-cooling-centers); Emily Alpert Reyes, *L.A. suffered deadly heat, yet chairs sat empty at its cooling centers*, L.A. TIMES (Sept. 19, 2020), [Few used L.A. cooling centers during record heat wave - Los Angeles Times \(latimes.com\)](https://www.latimes.com/california/story/2020-09-19/few-used-l-a-cooling-centers-during-record-heat-wave); see also Lance Howland, *In High-Temperature Areas, What are Cities and Counties Doing For Residents?*, PUBLICCEO (July 14, 2009), [In High-Temperature Areas, What are Cities and Counties Doing For Residents? – PublicCEO](https://www.publicceo.com/in-high-temperature-areas-what-are-cities-and-counties-doing-for-residents/).

centers).²⁹ Having to expand these services and efforts in response to the changing climate comes at the expense of other actions for the public benefit.

22. California's infrastructure is at increasing risk from climate change. California owns and operates a wide range of physical assets and infrastructure, including the state highway system, university campuses, parks, and historic structures. These assets are worth billions of dollars, and the State uses this infrastructure to provide critical services to its residents. Climate change impacts, including sea-level rise, more severe heat days, more frequent drought, and increased risk of wildfires, heighten the risk of the State's infrastructure being damaged or lost, disruption to the State providing key services, and impairment of natural habitats within the State.³⁰

23. In particular, melting ice from Antarctica is causing higher sea-level rise in California than the global average. California has the nation's largest ocean economy, valued at over \$44 billion per year, with the vast majority of it connected to coastal recreation and tourism as well as ports and shipping. Many of the facilities and infrastructure that support California's ocean economy—not to

²⁹ Legislative Analyst's Office, *The 2021-22 California Spending Plan: Natural Resources and Environmental Protection* (Oct. 18, 2021), [The 2021-22 Spending Plan: Natural Resources and Environmental Protection \(ca.gov\)](https://lao.ca.gov/Publications/Report/4133).

³⁰ Legislative Analyst's Office, *Assessing Vulnerability of State Assets to Climate Change* (Jan. 9, 2020), <https://lao.ca.gov/Publications/Report/4133>.

mention the public beaches themselves—lie within a few feet of the present high tide line. Rising sea levels from global warming thus are the main cause of the biggest impacts to California’s coastal land, infrastructure, and development, through more frequent flooding and inundation as well as increased cliff, bluff, dune, and beach erosion.³¹

24. In addition, a warming climate in the western United States is causing changes to the wildfire regime, with wildfires increasing in frequency, duration, and severity in the western United States.^{32,33,34} A 2016 study published in Proceedings of the National Academy of Sciences concluded that anthropogenic climate change has doubled the cumulative wildfire area burned in the West during

³¹ G. Griggs, et al. (California Ocean Protection Council Science Advisory Team Working Group), *Rising Seas in California: An Update on Sea-Level Rise Science*. California Ocean Science Trust (Apr. 2017).

³² Anthony LeRoy Westerling, *Wildfire Simulations for the Fourth California Climate Assessment: Projecting Changes in Extreme Wildfire Events with a Warming Climate in California’s Fourth Climate Change Assessment*, Cal. Energy Commiss’n, Pub. No. CCCA4-CEC-2018-014 (2018), http://www.climateassessment.ca.gov/techreports/docs/20180827-Projections_CCCA4-CEC2018-014.pdf.

³³ J.K. Balch, et al., *Human-started Wildfires Expand the Fire Niche Across the United States*, 114(11) Proc. of the Nat’l Acad. of Sci. 2946–51 (2017), <https://doi.org/10.1073/pnas.1617394114>.

³⁴ Kasha Patel, *6 Trends to Know about Fire Season in the Western U.S.*, NASA, Earth Matters (Nov. 29, 2018), <https://earthobservatory.nasa.gov/blogs/earthmatters/category/natural-hazards/>.

1984–2015.³⁵ California’s annual wildfire extent has increased fivefold since the 1970s.³⁶ This trend was mainly due to an eightfold increase in summertime forest-fire area and was very likely driven by drying of fuels promoted by human-induced warming.³⁷ Tracking with rising temperatures, California’s 2020 fire season was record-breaking, not only because over 4 million acres burned but also because 5 of the 6 largest wildfires in California history occurred in 2020.³⁸ Some of those fires burned so hot that they created their own tornadoes and lightning storms.³⁹

³⁵ B.J. Harvey, *Human-caused Climate Change is Now a Key Driver of Forest Fire Activity in the Western United States*, 113 Proc. of the Nat’l Acad. Sci. USA 11649–50 (2016).

³⁶ Williams, A. P., Abatzoglou, J. T., Gershunov, A., Guzman-Morales, J., Bishop, D. A., Balch, J. K., & Lettenmaier, D. P. (2019). Observed impacts of anthropogenic climate change on wildfire in California. *Earth's Future*, 7, 892–910. <https://doi.org/10.1029/2019EF001210>

³⁷ A.P. Williams, et al., *Observed Impacts of Anthropogenic Climate Change on Wildfire in California*, 7 EARTH’S FUTURE 892–910 (2019), <https://doi.org/10.1029/2019EF001210>.

³⁸ John Myers, “California unveils sweeping wildfire prevention plan amid record fire losses and drought,” LA TIMES, Apr. 8, 2021, <https://www.latimes.com/california/story/2021-04-08/california-wildfire-prevention-536-million-newsom-lawmakers>; Burke et al., *The Changing Risk and Burden of Wildfire in the United States*, PNAS 118(2) e2011048118 (Jan. 12, 2021), <https://doi.org/10.1073/pnas.2011048118>.

³⁹ A.P. Williams, et al., *Observed Impacts of Anthropogenic Climate Change on Wildfire in California*, 7 EARTH’S FUTURE 892–910 (2019), <https://doi.org/10.1029/2019EF001210>.

25. California's Fourth Climate Change Assessment⁴⁰ states that “[c]limate change will make forests more susceptible to extreme wildfires” and suggests that climate change will lead to wildfires in the next few decades that will be unprecedented in size and severity.⁴¹ If greenhouse gas emissions continue to rise, one study found that by 2100 the frequency of extreme wildfires burning 25,000 acres or more would increase by nearly 50 percent and average area burned statewide would increase by 77 percent.⁴²

26. California's wildfire spending has already more than tripled since 2005, because of the climate-change-induced increase in number and severity of wildfires.⁴³ And the State's 2021-2022 spending plan includes an almost fivefold increase in funding for wildfire prevention and forest health improvement.⁴⁴ As

⁴⁰ CA.GOV, California's Fourth Climate Change Assessment, <http://www.climateassessment.ca.gov/>.

⁴¹ State of California, *California's Fourth Climate Change Assessment: Statewide Summary Report* at 9 (2018), https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018013_Statewide_Summary_Report_ADA.pdf.

⁴² *Id.*

⁴³ Adam Beam, *California Oks new spending on drought, wildfire prevention*, ASSOCIATED PRESS (Sept. 9, 2021), [California OKs new spending on drought, wildfire prevention | AP News](#); see also Legislative Analyst's Office, *State Wildfire Response Costs Estimated to Be Higher Than Budgeted*, Fig. 3 (Oct. 19, 2020), [State Wildfire Response Costs Estimated to Be Higher Than Budgeted \(ca.gov\)](#).

⁴⁴ Legislative Analyst's Office, *The 2021-22 California Spending Plan: Natural Resources and Environmental Protection* (Oct. 18, 2021), [The 2021-22 Spending Plan: Natural Resources and Environmental Protection \(ca.gov\)](#).

greenhouse gas emissions rise and extreme wildfires expand, California's expenditures will only continue to increase, at the expense of other funds and services.

27. Wildfires also damage crops and soil, harm livestock, and create a high-risk environment for agricultural workers. As the largest agricultural-producing state in the U.S., California farmers are carrying an unimaginable burden right now to protect their land, animals, families, and workers while providing continued sustenance for the world. Agricultural land restoration efforts are essential after a wildfire but come with a considerable cost at a time when those affected are recovering from substantial losses. In 2020, industry estimates show California growers had losses of \$601 million from wine grapes that went unharvested.⁴⁵ Estimates on the full economic impact of wildfires on agriculture for the 2020 fire season are still being investigated. For instance, in 2017, fires in Napa and Sonoma caused an estimated \$75 million in economic loss, but that number does not account for the loss of buildings used for agriculture purposes. Furthermore, based on the location of many of recent fires, a bigger impact is expected compared to 2017 estimates.

⁴⁵ <https://www.recordnet.com/story/news/fire/2021/07/10/california-growers-see-601-m-loss-2020-new-smoke-heat-concern/7926501002/>

28. Climate change also exacerbates other air pollution problems throughout California. Increasing temperatures generally cause increases in ozone concentrations in California's polluted regions.⁴⁶ And increasing frequency and intensity of wildfires is already having a measurable effect on air quality.⁴⁷ At one point, California came under siege from record-breaking heat waves and smoke from more than 7,000 fires burning simultaneously, and the Bay Area even awoke to an eerie deep-orange sky.⁴⁸ Intense heat waves and widespread wildfire smoke caused Southern California to experience worse air pollution readings and highest number of health-damaging bad air-days since the mid-1990s. There were 157 bad-air days for ozone pollution across the vast, coast-to-mountains basin spanning Los Angeles, Orange, Riverside and San Bernardino Counties—the most days above the federal health standard since 1997. A recent study suggests that

⁴⁶ *E.g.*, American Lung Association, *State of the Air 2018* at 4, <https://www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2018-full.pdf>.

⁴⁷ Proc. of the Nat'l Acad. Sci. USA (Jul. 16, 2018), pii: 201804353, doi: 10.1073/pnas.1804353115, <https://www.ncbi.nlm.nih.gov/pubmed/30012611>; see also X. Liu, et al., *Airborne Measurements of Western U.S. Wildfire Emissions: Comparison with Prescribed Burning and Air Quality Implications*, 122 J.

GEOPHYS. RES. ATMOS. 6108-29 (2017), doi:10.1002/2016JD 026315 (showing that wildfires emit fine particulate matter at over three times the level previously estimated).

⁴⁸ Thomas Fuller & Christopher Flavelle, "A Climate Reckoning in Fire-Stricken California," N.Y. TIMES, Sept. 18, 2020, <https://www.nytimes.com/2020/09/10/us/climate-change-california-wildfires.html>.

smoke from wildfires like these is a rapidly growing health threat and could become one of the deadliest climate impacts within decades.⁴⁹ Continued climate change will further amplify the number of days with extreme fire weather by the end of the century (absent any additional actions taken in accordance with the U.N. Paris commitments).⁵⁰ And particulate matter exposure is a heightened problem during droughts, which climate change is also anticipated to exacerbate in California as changes in weather patterns block rainfall from reaching the State.^{51,52} Worse air quality leads to increased risk for respiratory infections like

⁴⁹ Tony Barboza, “Wildfire smoke now causes up to half the fine-particle pollution in Western U.S., study finds,” L.A. TIMES, Jan. 13, 2021, <https://www.latimes.com/california/story/2021-01-13/wildfire-smoke-fine-particle-pollution-western-us-study> (new study blames climate change for worsening air quality and health risks in both urban and rural communities in recent years); Marshall Burke, et al., *The Changing Risk and Burden of Wildfire in the United States*, PNAS 118(2) e2011048118 (Jan. 12, 2021), <https://doi.org/10.1073/pnas.2011048118>.

⁵⁰ Michael Goss, et al., *Climate Change is Increasing the Risk of Extreme Autumn Wildfire Conditions Across California*, ENV'T'L RES. LETTERS (2020), DOI: [10.1088/1748-9326/ab83a7](https://doi.org/10.1088/1748-9326/ab83a7).

⁵¹ A.P. Williams, et al., *Contribution of Anthropogenic Warming to California Drought During 2012-2014*, 42 GEOPHYS. RES. LETT. 6819–28 (2015), <http://doi.org/10.1002/2015GL064924>.

⁵² I. Cvijanovic, B.D. Santer, C. Bonfils, C. et al., *Future Loss of Arctic Sea-ice Cover Could Drive a Substantial Decrease in California’s Rainfall*, 8 NAT. COMMUN. 1947 (2017), <https://doi.org/10.1038/s41467-017-01907-4>.

bronchitis and pneumonia, which will result in greater health costs to the State.^{53,54,55}

29. Despite successes in increasing agricultural yields in the state, the effect of extreme droughts have already started hurting agricultural productivity, decreasing the State's water reserves and exacerbating fugitive dust emissions. We can expect more extreme droughts to continue into the end of the 21st century, with decreased precipitation frequency from fewer non-atmospheric river storms and long-term declines in groundwater, which cannot frequently recover from subsequent wet weather conditions. As reported in IPCC 2021 AR6,⁵⁶ there is high confidence that groundwater depletion has occurred since at least the start of the 21st century as a consequence of groundwater withdrawals for irrigation in agricultural areas in drylands (e.g., the United States southern High Plains and

⁵³ John A. Romley, Andrew Hackbarth & Dana P. Goldman, *Cost and Health Consequences of Air Pollution in California*, Santa Monica, CA, RAND Corp. (2010), https://www.rand.org/pubs/research_briefs/RB9501.html.

⁵⁴ M. Wang, C.P. Aaron, J. Madrigiano, et al., *Association Between Long-term Exposure to Ambient Air Pollution and Change in Quantitatively Assessed Emphysema and Lung Function*, 322(6) J. AM. MED. ASSOC. 546-56 (2019), doi:10.1001/jama.2019.10255.

⁵⁵ A. Inerro, *Air Pollution Linked to Lung Infections, Especially in Young Children*, AM. J. MANAGED CARE (May 6, 2018), <https://www.ajmc.com/newsroom/air-pollution-linked-to-lung-infections-especiallyin-young-children>.

⁵⁶

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf

California Central Valley). In California, where a \$50 billion agricultural industry grows more than a third of the country's vegetables and two-thirds of its fruits and nuts, farmers have seen wells dry up and access to State surface water allocations slashed to zero. If greenhouse gas emissions continue to rise, California's agricultural industry will be increasingly harder hit, with both revenues decreasing and food prices for residents increasing.

30. Increased greenhouse gas emissions from overturning the restoration of California's ACC waiver for its greenhouse gas and ZEV standards will worsen these climate impacts throughout California.

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

Executed on May 16, 2022, at Sacramento, County of Sacramento, California.



ELIZABETH SCHEEHLE

DECLARATION OF CHRISTOPHER M. LALONE

Pursuant to 28 U.S.C § 1746, I, Christopher M. LaLone, P.E., declare as follows:

1. I am the Director of the Division of Air Resources (DAR) at the New York State Department of Environmental Conservation (NYSDEC), where I have worked since 1993. I provide this declaration in support of the Movant-Intervenor States' motion to intervene in this lawsuit challenging the actions taken by the U.S. Environmental Protection Agency titled "California State Motor Vehicle Pollution Control Standards: Advanced Clean Car Program; Reconsideration of a Previous Withdrawal of a Waiver of Preemption; Decision," 49 Fed. Reg. 14,332, (March 14, 2022). The State of New York seeks to intervene as a respondent in this case because of our strong interest in the EPA actions challenged here, including EPA's restoration of the Clean Air Act preemption waiver for certain California motor vehicle emission standards that New York has adopted, and EPA's withdrawal of its unauthorized interpretation of Section 177 of the Clean Air Act that purports to prohibit New York and other states from adopting and/or continuing to implement and enforce California's motor vehicle greenhouse gas emission standards, even if California has a Clean Air Act preemption waiver for such standards.

2. As an administrator of New York's air pollution control programs, it is clear to me that New York will suffer harm if the challenged EPA actions are vacated or otherwise invalidated by this Court and New York is prevented from

adopting, implementing and/or enforcing California's light-duty motor vehicle greenhouse gas emission standards and certain requirements for zero-emission vehicles. Without the protections provided by those California standards, New York will suffer the effects of increased greenhouse gas (GHG) pollution, which will substantially impair New York's ability to reach its statutorily mandated emissions goals. Failure to reduce GHG emissions both inside and outside New York will worsen the effects of climate change, which, as a result of increased temperatures, will damage New Yorkers' public health as well as the state's environment and economy. The California standards also play an important role in New York's efforts to meet federal air pollution standards for particulate matter and ozone. Reduction of emissions of those pollutants is vitally important to protecting the health and safety of New York's residents, including our most vulnerable communities, many of which are situated near roadways and have greater exposure to harmful motor vehicle emissions.

PERSONAL BACKGROUND AND QUALIFICATIONS

3. I have Bachelor of Science in Chemical Engineering degree from Clarkson University. I am a licensed Professional Engineer in New York.

4. I have been the Director of the Division of Air Resources for approximately one year. In addition to my current position, I have held the positions of Assistant Director of Air Resources; Regional Environmental Quality

Engineer in the Region 9 Buffalo office; Chief of the Permitting and Compliance Section in the Bureau of Stationary Sources; Chief of the Enforcement Section of the Bureau of Stationary Sources; and other engineering positions within NYSDEC and in the private sector.

5. My responsibilities include overseeing DAR's central office in Albany, which carries out the development and implementation of mobile source regulations and technology development, monitoring and research functions, and stationary source permitting. In addition, I work with NYSDEC's nine regional offices, which are responsible for air permitting and enforcement throughout the state.

6. Another of my responsibilities is overseeing NYSDEC's air quality planning efforts, including regulation and mitigation of GHG emissions. New York's continued ability to opt-in to California motor vehicle emission standards is vitally important to these planning efforts.

7. I also oversee the development of Clean Air Act-mandated State Implementation Plans (SIP). SIPs detail how NYSDEC will assure that, among other things, the air quality in New York will come into or maintain compliance with the National Ambient Air Quality Standards (NAAQS) for the "criteria pollutants," including ozone, particulate matter (PM_{2.5}) and sulfur dioxide (SO₂), set by EPA under Sections 108 and 109 of the Clean Air Act. States are primarily

responsible for ensuring attainment and maintenance of a NAAQS once EPA has established one.

POINT I

CALIFORNIA'S VEHICLE EMISSIONS STANDARDS ARE CRITICAL TO PROTECT HEALTH AND SAFETY AND THE ENVIRONMENT IN NEW YORK STATE

A. The California Clean Cars Standards Are Crucial to New York's Efforts to Reduce the State's GHG Emissions.

8. The EPA actions challenged in this lawsuit allow California, and states like New York that may choose to opt-in to California standards, to impose vehicle emission standards separate from, and often more stringent than, EPA's federal standards. Section 177 of the Clean Air Act allows a state to adopt California's motor vehicle emission standards so long as the state's standards are identical to California standards for which a waiver has been granted, and the state adopts the standards at least two years prior to the applicable vehicle model year. In 1990, New York was the first state in the nation to adopt California's standards, codified at 6 NYCRR Part 218, which took effect beginning with the 1993 vehicle model year. With the exception of model year 1995, New York has continued to implement California's updates to its new motor vehicle program because this program provides substantial reductions in both criteria and GHG pollutants. And in 2005, New York adopted California's first (in that state and the nation) GHG

emissions standards for cars, and implemented those standards for model years (MY) 2012-2016. Since then, New York has continued to adopt California's light-duty vehicle emissions standards, such as the standards for MYs 2017-2025, which included California's GHG and ZEV provisions. New York's ability to implement the full suite of those standards is jeopardized if the EPA actions challenged in this lawsuit are not upheld.

9. In 2012, with the support of the auto industry, EPA promulgated GHG emissions standards for MY2017-2025, in a joint proceeding with NHTSA, which adopted final and augural fuel economy standards for those same model years. 77 Fed. Reg. 62,623 (Oct. 15, 2012). EPA's emissions standards, expressed as reductions of CO₂ in grams/mile (g/mi), were expected to be achieved through a combination of measures, including the use of technologies that reduce emissions and increase engine and vehicle efficiency, changes to air conditioning, increasing sales of zero-emission vehicles, and off-cycle credits. EPA found that the standards would "reduce GHG emissions by the equivalent of over two billion metric tons," and would have net benefits of \$326 to \$451 billion, over the vehicles' lifetimes. 77 Fed. Reg. at 62,631. The standards' stringency would have increased annually for each vehicle model year going out to MY2025. 77 Fed. Reg. at 62,771. In an historic agreement, California agreed that automakers who complied with the federal standards would be "deemed to comply" with California's similarly strict,

although not identical, standards. New York and other states (the Section 177 states) continued to opt-in to California's standards rather than exclusively rely on the slightly less stringent federal standards.

10. If the EPA actions challenged in this lawsuit are invalidated, New York's ability to achieve the GHG emissions reductions detailed in Point I.B below will be substantially impaired and the public health, environmental and economic harms from GHG emissions set forth below in Point 2 below will only worsen.

B. New York Needs Enforceable State GHG Standards to Meet Statutorily-Mandated GHG Emissions Reduction Goals

11. New York's efforts to reduce GHG emissions have recently been mandated by statute. The Climate Leadership and Community Protection Act (CLCPA), which went into effect on January 1, 2020, requires New York to reduce GHG emissions 85% below 1990 levels by 2050 and offset the remaining 15%. Environmental Conservation Law (ECL) § 75-0107.

12. The statewide GHG emission reduction requirements established by statute in the CLCPA are applicable to all sources of GHG emissions, including emissions from light-duty vehicles. The CLCPA also requires NYSDEC to promulgate regulations to ensure compliance with the Statewide GHG emission limits. ECL § 75-0109. Importantly, as defined by the CLCPA, "statewide GHG emissions" includes emissions of GHGs from all sources within the State, as well

as GHGs produced outside of the State associated with the extraction and transmission of fossil fuels imported into the State. ECL § 75-0101(13).

13. The California standards at issue in this action are critical to New York's efforts to meet the emissions reductions demanded by the CLCPA. Transportation is the largest sector of GHG emissions in New York, and this sector is growing as a result of increasing vehicle use; it is infeasible for New York to seek to reduce vehicle use in the short term while maintaining economic growth. New York cannot reasonably expect to meet its goals without reductions in GHG emissions from the transportation sector.

14. For instance, California had previously mandated that a certain percentage of vehicles each manufacturer sells must be "zero-emission vehicles" (ZEVs). Cal. Code Regs. Title 13 § 1960-1960.2. Under Section 177, New York has adopted these percentages. 6 NYCRR § 218-4.1 (requiring manufacturers' sales fleets to "contain at least the same percentage of ZEVs subject to the same requirements set forth in California Code of Regulations"). In the absence of the ZEV program and the more stringent California GHG emissions standards mandated fleetwide, New York would no longer be able to rely on this source of emissions reductions. Thus, if the EPA actions challenged here are invalidated, New York's ability to meet its climate goals will be substantially impaired, including the statutory requirements of CLCPA.

POINT II

NEW YORK AND ITS CITIZENS WILL SUFFER SHORT AND LONG-TERM HARM IF EPA'S ACTIONS ARE INVALIDATED

15. If the challenged EPA actions are invalidated, GHG emissions will increase, which will have short- and long-term adverse effects on: (1) the health and safety of New Yorkers; (2) New York's environment and proprietary interests; and (3) the economic interests of New York State and New Yorkers. Increased GHG emissions will have long-term effects on the physical conditions of New York State. These changes—including alterations to New York State's weather, rise in sea levels, and damage to the Great Lakes—will have negative effects on New York State in its proprietary interest, including on its budget and State land.

A. Climate Change is Already Harming New Yorkers' Health

16. Demand for health services and the need for public health surveillance and monitoring will increase as the climate continues to change. Heat-related illness and death are projected to increase. Increased coastal and riverine flooding resulting from intense precipitation increases the risk that such flooding could release contaminants or even toxic substances from wastewater treatment facilities, industrial facilities, and superfund sites with multiple attendant adverse health effects. Such flooding could lead to increased stress and mental health impacts, increased respiratory diseases such as asthma, and increased outbreaks of

gastrointestinal diseases—as well impaired ability to deliver public health and medical services. Vector-borne diseases, such as those spread by mosquitoes and ticks (e.g., West Nile virus and Lyme disease), may expand or change their distribution patterns, either of which may adversely affect additional populations. Water- and food-borne diseases are likely to increase without mitigation and adaptation intervention.¹

17. The New York City metropolitan area has a significant ozone problem. Climate change is likely to worsen the harms New York is already suffering from ozone. As EPA recognized many years ago when making its 2009 Endangerment Determination regarding greenhouse gas emissions under Section 202(a) of the Clean Air Act, “climate change is expected to increase [ground level] ozone pollution over broad areas of the U.S., including in the largest metropolitan areas with the worst [] ozone problems, and thereby increase the risk of adverse effects on public health.”²

¹ N.Y. State Energy Research and Dev. Auth., *Responding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation* (2011) (Cynthia Rosenzweig, et al., eds.) at 403-04, 421-22 (hereinafter the “ClimAID Report”), <https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Environmental/EMEP/climaid/ClimAID-Report.pdf>

² 74 Fed. Reg. at 66,525.

18. Breathing ozone can trigger a variety of health problems. These problems include chest pain, coughing, throat irritation, airway inflammation, reduced lung function and damaged lung tissue. Ozone can worsen bronchitis, emphysema and asthma, leading to increased medical costs. Exposure to ozone has also been linked to early deaths. People most at risk from breathing air containing ozone include people with asthma, children, older adults and people who are active outdoors, especially outdoor workers.

19. Ozone also interferes with the ability of plants and forests to produce and store nutrients, which makes them more susceptible to disease, insects, harsh weather and other pollutants. This harms crop production in New York and throughout the United States, resulting in significant losses and injury to native vegetation and ecosystems. Furthermore, ozone damages the leaves of trees and other plants, and can also damage certain man-made materials, such as textile fibers, dyes, rubber products and paints.

B. Climate Change is Already Harming New York's Environment

20. Anthropogenic emissions of the predominant GHG, CO₂, are contributing to the observed warming of the planet.³ The Earth's lower

³ Intergovernmental Panel on Climate Change Working Group I Fifth Assessment Report, *Climate Change 2013: The Physical Science Basis*, 2013, *available at* <https://www.ipcc.ch/report/ar5/wg1/>

atmosphere, oceans, and land surfaces are warming; sea level is rising; and snow cover, mountain glaciers, and Greenland and Antarctic ice sheets are shrinking. The Earth's climate is changing, with adverse consequences already well documented across the globe, in our nation and in the State. Extreme heat events are increasing, and intense storms are occurring with greater frequency. Many of the observed climate changes are beyond what can be explained by natural variability of the climate.⁴ These changes are harming, and will continue to harm, New York State's environment, including shorelines, drinking water sources, agriculture, forests, and wildlife diversity.

1. Climate Change Has Changed and Continues to Change New York's Weather

21. Temperatures in New York State have risen on average 0.25°F per decade over the past century, with the greatest warming coming in the most recent decades. This warming includes an increase in the number of extreme hot days (days at or above 90°F) and a decrease in the number of cold days (days at or below 32°F).⁵ The 2011 New York State ClimAID assessment⁶ and the 2014

⁴ Ibid.

⁵ ClimAID Report at 367, II-10.

⁶ ClimAID Report.

update to ClimAID⁷ present the numerous direct impacts that have already been observed in New York State. These impacts are described in more detail below.

22. New York State is likely to see widespread shifts in species composition in the State's forests and other natural landscapes within the next several decades due to climate change. Losses of spruce-fir forests, alpine tundra and boreal plant communities are expected. Climate change favors the expansion of some invasive species into New York, such as the aggressive weed, kudzu, and the insect pest, hemlock woolly adelgid. Increased CO₂ in the atmosphere due to climate change is likely to preferentially increase the growth rate of fast-growing species, which are often weeds and other invasive species. Lakes, streams, inland wetlands and associated aquatic species will be highly vulnerable to changes in the timing, supply, and intensity of rainfall and snowmelt, groundwater recharge and duration of ice cover. Increasing water temperatures will negatively affect brook trout and other native cold-water fish.⁸

⁷ N.Y. State Energy Research and Dev. Auth., *Climate Change in New York State: Updating the 2011 ClimAID Climate Risk Information* (2014) (Cynthia Rosenzweig, et al., eds.) (hereinafter the “ClimAID Update”), <https://www.nyserda.ny.gov/climaid>

⁸ ClimAID Report 172, 196.

23. New York State's forests and the economy that depends on them will be hurt by climate change. Climate change will affect the forest mix in New York, which could change from the current mixed forest to a temperate deciduous forest. The habitat for existing tree species will decrease as suitable climate conditions shift northward.⁹ As forest species change, the resulting decrease in the vibrant display of New York State fall foliage could have a negative impact on regional tourism. New York State's Adirondack Park is the largest forested area east of the Mississippi and consists of six million acres, including 2.6 million acres of state-owned forest preserve.¹⁰ The Adirondack Park, one the most significant hardwood ecosystems in the world, is likely to be threatened by these changes.¹¹ These changes will also further impact plant and wildlife species in the Adirondack Park and throughout the state, as the forest composition changes.

2. Sea-Level Rise and Increased Flooding Are Already Harming New York State

24. Warming ocean waters contribute to sea level rise, with adverse impacts for New York State. Warmer ocean water, which results in thermal

⁹ ClimAID Report 177.

¹⁰ N.Y. State Adirondack Park Agency, "More about the Adirondack Park," https://www.apa.ny.gov/About_Park/more_park.html

¹¹ ClimAID Report 178-79, III-47.

expansion of ocean waters, melting of land ice, and local changes in the height of land relative to the height of the continental land mass, are the major contributors of sea level rise. Warming ocean water has the potential to strengthen the most powerful storms, and combined with sea level rise, will lead to more frequent and extensive coastal flooding. Sea level in the coastal waters of New York State and up the Hudson River has been steadily rising over the 20th century. Tide-gauge observations in New York indicate that rates of relative sea level rise were significantly greater than the global mean, ranging from 0.9 to 1.5 inches per decade.¹²

25. Sea-level rise increases the extent and magnitude of coastal flooding. For example, the twelve inches of sea level rise the New York City area has experienced in the past century exacerbated the flooding caused by Hurricane Sandy by about twenty-five square miles, damaging the homes of an additional 80,000 people in the New York City area alone.¹³ That flooding devastated several areas of New York City, including the Brooklyn-Queens Waterfront, the East and South Shores of Staten Island, Southern Queens, Southern Manhattan, and

¹² ClimAID Report at 19, 127, 135.

¹³ New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms. Ann. N.Y. Acad. Sci. ISSN 0077-8923, *available at* <http://onlinelibrary.wiley.com/doi/10.1111/nyas.12593/full>

Southern Brooklyn. Some areas lost power and other critical services for extended periods. Overall, Hurricane Sandy caused 53 deaths and the estimated costs of response and recovery in New York State exceeded \$30 billion.¹⁴

26. New York State's tidal shoreline, including barrier islands, coastal wetlands, and bays, is expected to be particularly adversely affected by increased sea levels. New York State has 1,850 miles of tidal coastline,¹⁵ and the State owns dozens of state parks within New York State's coastal boundary. Tidal shoreline property in the State held by private landowners is similarly at risk.

27. Climate change will also increase the frequency and magnitude of flood damage and storms. Rising air temperatures associated with climate change intensify the water cycle by driving increased evaporation and precipitation. The resulting altered patterns of precipitation include more rain falling in heavy events, often with longer dry periods in between. Heavy downpours have increased in New York State over the past 50 years. By the end of the 21st century, coastal flood

¹⁴ N.Y. Senate Bipartisan Task Force on Sandy Recovery, *Preliminary Response & Recovery Report* at 1, 26 (Feb. 2013), <https://www.nysenate.gov/sites/default/files/articles/attachments/Senate%20Bipartisan%20Task%20Force%20on%20Hurricane%20Sandy%20Report%20FINAL%202-5.pdf>

¹⁵ U.S. Bureau of the Census, *Statistical Abstract of the United States 1987* at 187 (107th Ed.).

levels currently associated with a 100-year flood could occur approximately four times as often under even conservative sea level rise scenarios. This trend will increase localized flash flooding in urban areas and hilly regions.¹⁶

28. New York State incurs significant costs from damage from flooding. Grants to the State from the Federal Emergency Management Agency (FEMA) Public Assistance Program made in the aftermath of flood disasters almost always require the State to fund a portion of the project. For example, in the aftermath of Hurricane Sandy, FEMA obligated over \$14 billion to New York State and local governments.¹⁷ Even in the case of Hurricane Sandy, which was deemed damaging enough that New York State and local governments had to pay only 10% of eligible costs for most projects,¹⁸ these grants entailed significant expenditures.

29. Flooding due to climate change exacerbates harm to public health and the environment in New York State. Flooding increases water pollution by carrying runoff from land areas containing road oils, salts, farm and lawn chemicals, pesticides, metals, and other pollutants into New York's water bodies.

¹⁶ ClimAID Report at 35, 103.

¹⁷ Fed. Emergency. Mgmt. Agency, *New York Hurricane Sandy (DR-4085-NY)* (last updated Mar. 20, 2020), <https://www.fema.gov/ar/disaster/4085>

¹⁸ Fed. Emergency. Mgmt. Agency, *New York; Amendment No. 9 to Notice of a Major Disaster*, 78 Fed. Reg. 32,413 (May 30, 2013).

Flooding has also inundated and/or overloaded New York wastewater treatment plants, causing raw sewage to enter waterways. Polluted floodwaters can inundate communities and other vulnerable development within floodplains, impairing potable public and private water supplies, and rendering cleanup more hazardous. Contaminated floodwaters can also impede other water uses including swimming, beach-going, and fishing.¹⁹ The U.S. Secretary of Health and Human Services issued Public Health Emergency Declarations in New York²⁰ following Hurricane Sandy and Tropical Storm Lee, in large part because of post-flood conditions.

30. Climate change requires an increased commitment of State emergency response resources to protect lives and property in flood prone areas. For example, swift-water or air-rescue teams rescued over one thousand state residents during the flooding caused by Hurricane Irene and Tropical Storm Lee. New York State committed extensive emergency resources in response to the storms, including: deploying 1,700 State Police and 3,200 National Guard members, opening 200 shelters to house 18,000 citizens, and staffing 74 Disaster

¹⁹ ClimAID Report at 422, 444-53.

²⁰ U.S. Dep't of Health & Human Serv., "Public Health Emergency Declarations," <https://www.phe.gov/emergency/news/healthactions/phe/Pages/default.aspx>

Recovery Centers to assist citizens during the recovery period.²¹ The storms closed 400 road segments and bridges and required repairs at 945 locations on the State highway system.

31. As EPA has previously recognized, “climate change is also expected to cause more intense hurricanes and more frequent and intense storms of other types, and heavy precipitation.”²² Over 15.5 million people live within coastal counties in New York, the second highest population within the United States (only California has a larger coastal population).²³ According to NOAA’s Office of Coastal Management, New York has the most insured coastal properties in the country that are vulnerable to hurricanes (\$2.92 trillion in value).²⁴

32. New York State and entities it funds maintain or own critical transportation infrastructure in lower Manhattan, including the Hugh L. Carey

²¹ N.Y. State Office of the Governor, *New York State Responds – Hurricane Irene and Tropical Storm Lee: One Year Later*. August 2012. Available at:

https://cdn.esd.ny.gov/DisasterRecovery/08232012_LeeIreneOneYear.pdf

²² 74 Fed. Reg. at 66,525.

²³ Nat’l Oceanic and Atmospheric Admin., *National Coastal Population Report: Population Trends from 1970 to 2010* (Mar. 2013), available at:

<https://aambpublicoceanservice.blob.core.windows.net/oceanserviceprod/facts/coastal-population-report.pdf>

²⁴ Nat’l Oceanic and Atmospheric Admin, Office for Coastal Mgmt., “Fast Facts: Hurricane Costs,” <https://coast.noaa.gov/states/fast-facts/hurricane-costs.html>

Tunnel (formerly the Brooklyn-Battery Tunnel),²⁵ the South Ferry Terminal,²⁶ and the West Side Highway, all of which are threatened by sea level rise and extreme weather events.²⁷

33. New York's Metropolitan Transit Authority (the "MTA") has, especially in the wake of Hurricane Sandy, taken extensive measures to prepare its infrastructure for climate change impacts such as increases in sea-level rise, coastal storm surges, extreme winds, average air temperature and heat waves, and heavy precipitation.²⁸ In 2016, the MTA identified 46 resiliency projects across its transit system, requiring a total expenditure of just over \$750 million, which included both state and federal funding.²⁹ These projects included:

²⁵ See MTA, *2017 Adopted Budget: February Financial Plan, 2017-2020*, available at <http://web.mta.info/mta/budget/pdf/MTA%202017%20Adopted%20Budget%20February%20Financial%20Plan%202017-2020.pdf>

²⁶ *Id.* at 106.

²⁷ N.Y. State Dep't of Transport., Real Estate Division, Notice of Appropriation, "Route 9A Reconstruction Project," available at http://a836-acris.nyc.gov/DS/DocumentSearch/DocumentImageView?doc_id=FT_1840006500484

²⁸ MTA, *MTA Climate Adaptation Task Force Resiliency Report* at 8, available at <https://new.mta.info/document/10456>

²⁹ *Id.* at 12

- a. Resiliency measures (e.g., hardening of pump systems, watertight doors, and portal-sealing) designed to improve underground and underwater subway tunnels from flooding from future Category 2 storms, with an additional three-foot safety factor;
- b. Redesign of bus depots with interior and exterior flood protections;
- c. Elevation of electric substations on the MTA Metro-North Railroad's Hudson Line four feet above projected flood levels; and
- d. The installation of flood barriers on each side of the Hugh L. Carey Tunnel.³⁰

34. As of 2019, the MTA reported progress or completion of many of these climate resiliency projects, including elevation and replacement of substations across the system, installation of flood and debris protection walls, replacement of critical power and signaling components, flood gates at the Hugh L. Carey Tunnel, and seawall and shoreline repair at the Rockaway bridges.³¹

35. As climate change continues to worsen, it is expected that the State will be required to develop and pay for additional resiliency projects, as well as

³⁰ *Id.* at 16-27.

³¹ MTA, *MTA Climate Adaptation Task Force 2019 Resiliency Report: Update on agency-wide climate resiliency projects*, available at <https://new.mta.info/document/10461>

bearing the costs of damage from extreme weather incidents associated with climate change. For example, in September 2021, Hurricane Ida caused over one hundred million dollars of damage to New York City alone, including damage to transportation infrastructure.³² For this reason, it is crucial to New York that the challenged EPA actions be upheld.

C. Climate Change is Harming New York's Economy

36. Climate change is also expected to result in less frequent summer rainfall, increased evaporation, and additional, and possibly longer, summer dry periods, potentially impacting the ability of water supply systems to meet demands. Reduced summer flows on large rivers and lowered groundwater tables could lead to conflicts among competing water users.³³

37. Climate change is expected to hurt agriculture in New York State. Increased summer heat stress will negatively affect cool-season crops, requiring farmers to take adaptive measures such as shifting to more heat-tolerant crop varieties and eventually resulting in a different crop mix for New York's farmers. The loss of long cold winters could limit the productivity of apples and potatoes, as

³² See, <https://www.fema.gov/press-release/20211110/279-million-federal-funding-fuels-new-york-two-months-after-hurricane-ida>

³³ ClimAID Report at 103.

these crops require longer cold dormant periods. New York's maple syrup industry also requires specific temperature conditions in order for the sugar maples to produce sap. It is projected that sugar maple trees will be displaced to the north as the climate changes and temperatures increase. Increased weed and pest pressure associated with longer growing seasons and warmer winters will be an increasingly important challenge. Water management will be a more serious challenge for New York farmers in the future due to increased frequency of heavy rainfall events, and more frequent and intense summer water deficits by mid-to late-century.³⁴

38. Dairy farmers will also be impacted by warmer air temperatures associated with climate change. Milk production is maximized under cool conditions ranging from 41°F to 68°F.³⁵ New York is the third largest producer of milk in the United States, behind California and Wisconsin, with 14.8 billion pounds of milk produced in 2016.³⁶ During the unusually hot summer in 2005, declines in milk production of five to 15 pounds of milk per cow per day (an eight

³⁴ ClimAID Report at 236; III-69; 187-88; II-58; 222-23; 241-243.

³⁵ Alvaro Garcia, *Dealing with Heat Stress in Dairy Cows* (South Dakota Cooperative Extension Service, Sep. 2002) at 1.

³⁶ U.S. Dep't of Agric., *Milk Production, Disposition and Income: 2016 Summary* at 10, available https://www.nass.usda.gov/Publications/Todays_Reports/reports/mlkpdi17.pdf

to 20 percent decrease) in many New York dairy herds were reported.³⁷ In 2019, New York reported approximately \$2.5 billion dollars of cash receipts from its dairy industry.³⁸ A loss of milk production efficiency from heat effects could result in the loss of hundreds of millions of dollars annually for New York's dairy industry, and a consequential negative impact to the State's tax revenues.

39. In sum, the effects of climate change on New York will be deadly, widespread, and extremely expensive.

I declare under penalty of perjury that I believe the foregoing to be true and correct.

Executed on May16, 2022.



Christopher M. LaLone, P.E.

³⁷ Peter Frumhoff, *Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions*, Northeast Climate Impacts Assessment, July 2007 at 69.

³⁸ U.S. Dep't of Agric., *Milk Production, Disposition and Income: 2019 Summary* at 9, <https://downloads.usda.library.cornell.edu/usda-esmis/files/4b29b5974/5h73qf66r/hd76sk303/mlkpdi20.pdf>

DECLARATION OF MARK HAMMOND

I, Mark Hammond, pursuant to 28 U.S.C. § 1746, declare as follows:

Overview

1. I am the Director of the Bureau of Air Quality of the Pennsylvania Department of Environmental Protection (“PADEP”), an executive branch agency of the Commonwealth of Pennsylvania government.
2. I submit this declaration on behalf of the Commonwealth of Pennsylvania (“Commonwealth”) as a State intervenor in the matter involving the Petitioners' challenge of the U.S. Environmental Protection Agency’s (“EPA”) final action restoring California’s waiver under section 209(b) of the Clean Air Act (“CAA”) (42 U.S.C. § 7543(b) for the subject model years (MYs) and reversing its previous determination that states cannot adopt California’s greenhouse gas (“GHG”) emission standards under section 177 of the CAA (42 U.S.C. § 7507). 87 Fed. Reg. 14,332 (Mar. 14, 2022). (“Waiver Action”).
3. Unless otherwise noted, the statements made in this declaration are based on my review of various publicly available records, reports, statements, and data compilations prepared by public agencies of the

federal government and/or the Commonwealth. I have also reviewed the EPA's Waiver Action¹ that is subject to Petitioner's challenge in this litigation.

Biography

4. I received my Bachelor of Science degree in 1991 from Virginia Polytechnical Institute and State University with a major in Mechanical Engineering and obtained my Juris Doctorate from the University of Pittsburgh School of Law in 1994.
5. I became the Director of the BAQ on August 3, 2020. My current responsibilities include safeguarding the health of Pennsylvanians by achieving the goals of the federal CAA, 42 U.S.C. §§ 7401- 7671q, and the Pennsylvania Air Pollution Control Act, 35 P.S. §§ 4001- 4015. I manage the BAQ's goals, objectives, and policies and oversee all its regulatory programs which include air quality monitoring, air resource management and planning, compliance and enforcement, permitting, and source testing and monitoring.

¹ The Commonwealth participated in a July 6, 2021 multi-state comment letter supporting EPA's Notice of Reconsideration (86 Fed. Reg. 22,421 (Apr. 28, 2021)) concerning the actions EPA took in "SAFE 1" (84 Fed. Reg. 51,310 (Sept. 27, 2019)); this letter discusses the importance of the Waiver Action to States abilities to advance air quality. *See* Docket ID No. EPA-HQ-OAR-2021-0257.

6. From 2010 to August 2020, I served on the Commonwealth's Climate Change Advisory Committee ("CCAC") created under the Pennsylvania Climate Change Act, 71 P.S. §§ 1361.1 *et seq.* I served as the Chairman of CCAC from September 2018 to August 2020 and as Vice Chair of CCAC from 2012 to 2016. My role involved providing advice to PADEP regarding the implementation of the Pennsylvania Climate Change Act, including the development and submission of a Climate Change Action Plan to the Governor.
7. Starting in June 2011 until December 2019, I served as an attorney for Land Air Water Legal Solutions, LLC in Pennsylvania and became President of this firm in October 2011. During this time, I counseled clients on regulatory compliance strategies, implementation and reporting matters pertaining to the CAA and Air Pollution Control Act and implementing regulations thereunder. This work included permitting, emission inventories, ambient air modeling and monitoring and risk assessments. I held this role with Land Air Water Legal Solutions, LLC until my departure on December 31, 2019.
8. From 2002 to 2011, in my position as an Associate with Drinker Biddle & Reath, LLP, I counseled clients on CAA matters

affecting manufacturers and the energy industry, including NESHAP, operating permit and regulatory compliance strategies.

9. From 1995 to 2001, in my position as an Executive Team Leader at Compliance Management International, I managed the environmental consulting staff (from 1995-1998) and the technical staff (from 1998-2001). In this role, I assisted clients in all aspects of environmental compliance, including air, waste, water, energy efficiency and pollution prevention.

**EPA's Final Action Enables Pennsylvania To
Reduce Air Pollution from Light-Duty Vehicles**

10. The EPA's Waiver Action restores California's waiver under section 209(b) of the federal CAA (42 U.S.C. § 7543(b)) for greenhouse gas ("GHG") vehicle emission standards and zero emission vehicle ("ZEV") standards for the subject MYs and affirms States, and specifically, the Commonwealth's ability to adopt and implement California's GHG and ZEV vehicle emission standards under section 177 of the CAA (42 U.S.C. § 7507).
11. Based upon my review and analysis, and as further described below, the Commonwealth's ability to reduce air pollution from motor vehicles in Pennsylvania through implementation and enforcement of the

Pennsylvania Clean Vehicles Program (“PCVP”) at Title 25, Chapter 126, Subch. D, promulgated under the Pennsylvania Air Pollution Control Act (35 P.S. §§ 4001-4015), will be advanced through EPA’s Waiver Action. Pennsylvania previously adopted and incorporated by reference the California Air Resources Board’s (“CARB”) GHG emission standards under section 177 of the CAA. See, 25 Pa. Code § 126.411(b); see also, 36 Pa. Bull. 7424, 7426 and 7432; December 8, 2006. Pennsylvania is also currently considering adoption of California’s ZEV program standards under section 177.

12. The EPA’s Waiver Action benefits the Commonwealth by restoring state authority under section 177 to adopt and implement California’s GHG motor vehicle emission standards. As a result of EPA’s Waiver Action, Pennsylvania will benefit from cleaner light-duty motor vehicles for the subject model years being delivered for sale and operated in the Commonwealth through its previous adoption and incorporation of the CARB GHG standards in the PCVP.

13.If Petitioners' challenge of the EPA's Waiver Action is successful, it will prevent the Department from implementing and enforcing the Commonwealth's GHG vehicle emission standards under the PCVP for the subject MYs, and as a result, hinder the Commonwealth's ability to reduce or limit air pollution from light-duty motor vehicles throughout Pennsylvania.

14.As further described below, increased emissions from light-duty motor vehicles will have adverse consequences on the Commonwealth government. These increased emissions will result in changes in climate which will damage state owned properties; cause increased flood damage in the Delaware, Ohio and Susquehanna River basins to critical infrastructure owned, funded, and/or administered by the Commonwealth; harm ecological resources of the Commonwealth; and cause the Commonwealth to incur increased medical costs.

15.Increased emissions due to the Commonwealth's inability to realize the benefits from adoption and incorporation of CARB's GHG standards pursuant to section 177 of the CAA will also cause the Commonwealth government to incur increased costs and adversely affect the Commonwealth's air quality policy and planning efforts to

reduce emissions from light-duty motor vehicles and to comply with federal air pollution standards.

16. Moreover, increased emissions as a result of an adverse court ruling in this challenge to EPA's Waiver Action will undermine the Commonwealth's mitigation and adaptation planning efforts to address climate change.

Pennsylvania's NAAQS Obligations Under the Clean Air Act

17. Under the CAA, the Commonwealth is responsible for attaining and maintaining of the National Ambient Air Quality Standards ("NAAQS") established by EPA under section 109(a) of the CAA. See 42 U.S.C.

§§ 7410 and 7505a. The Commonwealth has challenges doing so for ground-level ozone and fine particulate matter with diameters that are 2.5 micrometers and smaller ("PM_{2.5}").

18. The five-county Philadelphia area in Pennsylvania is currently part of a "marginal" multi-state nonattainment area for the 2015 ground-level ozone

NAAQS; Pennsylvania has 17 counties that are maintenance areas for the 2008 ozone NAAQS.²

19. Ground-level ozone is a highly reactive gas, which at sufficiently high concentrations can produce a wide variety of harmful effects. At elevated concentrations, ground-level ozone can adversely affect human health, animal health, vegetation, materials, economic values, and personal comfort and well-being. It can cause damage to important food crops, forests, livestock and wildlife. Repeated exposure to ground-level ozone pollution may cause a variety of adverse health effects for healthy people and those with existing conditions, including asthma, heart disease, emphysema and asthma, and reduced lung capacity. High levels of ground-level ozone affect animals in ways similar to humans. High concentrations of ground-level ozone can also cause damage to buildings and synthetic fibers, including nylon, and reduced visibility on roadways and in natural areas. Through deposition, ground-level ozone also contributes to pollution of bodies of water such as the Chesapeake Bay.

² 83 Fed. Reg. 25,776 (June 4,2018). see also, 77 FR 30088, 30143 (May 21, 2012) (These areas for the 2008 NAAQS include all or a portion of Allegheny, Armstrong, Beaver, Berks, Bucks, Butler, Carbon, Chester, Delaware, Fayette, Lancaster, Lehigh, Montgomery, Northampton, Philadelphia, Washington and Westmoreland Counties).

20. Challenges also persist for the Commonwealth in continued maintenance of the 2006 and 2012 annual PM_{2.5} NAAQS as multiple areas of the Commonwealth are maintenance areas for those standards.³

21. Epidemiological studies have shown a significant correlation between elevated levels of PM_{2.5} and a number of serious health effects, including premature mortality, lung disease, asthma attacks and cardiovascular problems such as heart attacks.

22. Through the continued implementation of air quality planning and regulatory programs, including the PCVP, the Commonwealth has made progress towards improving air quality. The Commonwealth's ability to continue to receive benefits from the CARB GHG standards

³ 80 Fed. Reg. 18535, 18549 (April 7, 2015) (These areas for the 2015 NAAQS include the Allegheny County, Delaware County and Lebanon County Areas). see also, 71 Fed. Reg. 61144 (October 17, 2006) and 70 Fed. Reg. 944 at 999. (These areas for the 1997 NAAQS include Allegheny (Liberty-Clairton), Allegheny (remainder), Armstrong, Berks, Beaver, Bucks, Butler, Cambria, Chester, Cumberland, Dauphin, Delaware, Greene, Indiana, Lancaster, Lawrence, Lebanon, Mercer, Montgomery and Philadelphia counties; EPA retained the annual PM_{2.5} standard in 2006).

is important to ensure that Pennsylvania continues to both improve and maintain air quality in the most challenging areas of the Commonwealth and does not “backslide” in attainment of the NAAQS.

Impacts on Pennsylvania from Increased GHG Emissions

23. The Commonwealth faces two fundamental threats related to increased GHG emissions leading to climate change: (1) sea level rise and its impact on communities and cities in the Delaware River Basin, including the City of Philadelphia; and (2) more frequent extreme storm weather events, including large storms, periods of drought, heat waves, heavier snowfalls, and an increase in overall precipitation variability affected all areas throughout the Commonwealth.

24. Based on studies commissioned by PADEP, as part of its mandate under the Pennsylvania Climate Change Act, Pennsylvania has undergone a long-term warming of more than 1 degree Celsius over the past 110 years.⁴

25. The models used in the May 2015 Pennsylvania Climate Impacts Assessment Update, which remain largely the same as of the April 2020

⁴ Pennsylvania Dep’t of Env’tl Prot., “Pennsylvania Climate Impacts Assessment Update,” April 2020, p. 6, available at: <http://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/ClimateChange/2020ClimateChangeImpactsAssessmentUpdate.pdf>.

Update, suggest this warming is a result of anthropogenic influence, and that this trend is accelerating. Projections in the 2015 Update show that by the middle of the 21st Century, Pennsylvania will be about 3 degrees Celsius warmer than it was at the end of the 20th century.⁵

26. As documented in these updated Climate Impacts Assessments, these warming trends will threaten Pennsylvania in a number of ways.

- a. The public health of Pennsylvanians is threatened because climate change will worsen air quality relative to what it would otherwise be, causing increased respiratory and cardiac illness. Respiratory complications such as asthma acutely disproportionately affect the elderly and young children. The linkage between climate change and air quality is most strongly established for ground-level ozone creation during summer, but there is evidence that higher temperatures and higher precipitation will result in increased allergen (pollen and mold) levels as well.
- b. Pennsylvania agriculture will have to adapt to greater extremes in temperature and precipitation. Pennsylvania dairy production is likely

⁵ Pennsylvania Dep't of Env't'l Prot., "Pennsylvania Climate Impacts Assessment Update," May 2015, pp. 44 and 101, available at: <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=5002&DocName=2015%20PENNSYLVANIA%20CLIMATE%20IMPACTS%20ASSESSMENT%20UPDATE.PDF%20#>

to be negatively affected by climate change due to losses in milk yields caused by heat stress, additional expenditures to mitigate that heat stress, and lower levels of forage quality.

- c. Pennsylvania's forests and orchards will be subject to multiple stressors. The warming climate will cause tree species' decreasingly suitable habitat to become stressed. Tree mortality rates are likely to increase and regeneration success is expected to decline for these tree species, resulting in declining importance of those species in the state.
- d. Suitable habitat for plant and wildlife species is expected to shift to higher latitudes and elevations. This will reduce the amount of suitable habitat in Pennsylvania for species that are at the southern extent of their range in Pennsylvania or that are found primarily at high latitudes; the amount of habitat in the state that is suitable for species that are at the northern extent of their range in Pennsylvania will increase. The Canada lynx, which is already rare in Pennsylvania, will likely be extirpated from the state.
- e. West Nile disease is endemic in Pennsylvania. It is currently most prevalent in Southeastern and Central parts of the state, and less prevalent in the Laurel Highlands and the Allegheny Plateau. However, climate change is expected to increase the prevalence of

West Nile disease in the higher-elevation areas, due to higher temperatures. In addition to its range, the duration of the transmission season for West Nile disease is sensitive to climate. Warmer temperatures result in a longer transmission season, and therefore greater infection risk.

- f. Climate change poses a threat to the fauna of the tidal freshwater portion of the Delaware estuary in Pennsylvania. One reason is that increased water temperatures with climate change decrease the solubility of oxygen in water and will increase respiration rates, both of which will result in declines in dissolved oxygen concentration. Thus, climate change will worsen the currently substandard water quality in the tidal freshwater region of the Delaware Estuary. The salt intrusion associated with the combination of sea-level rise and summertime streamflow declines associated with climate change poses a threat to the City of Philadelphia's drinking water as the saltwater line extends further north on the Delaware River.
- g. The freshwater tidal wetlands along Pennsylvania's southeastern coast are a rare, diverse, and ecologically important resource. Climate change poses a threat to these wetlands because of salinity intrusion

and sea-level rise. Sea-level rise, however, has the potential to drown wetlands if their accretion rates are less than rates of sea-level rise.

- h. Climate change has damaged state-owned and state-regulated infrastructure in Pennsylvania and continues to pose a continued risk to further damage roads, bridges, dams and other critical state-owned and state-regulated infrastructure due to more frequent and extreme storm events, which causes flooding and other adverse effects.

Costs to Commonwealth Government

27. If the Petitioners' challenge to this rule is successful, such a court ruling would result in increased air pollution in Pennsylvania, and therefore, additional costs to the Commonwealth.

28. Increased ground-level ozone and annual PM_{2.5} pollution as well as climate change impacts have co-related costs.

29. One such cost will be the increase in medical costs that are borne in large part by the Commonwealth through its Medicaid and Childhood Health Insurance Programs. One of the medical cost impacts will be an increase in asthma cases and episodes, and thus, asthma-related expenditures. Asthma places a significant economic burden on the United States, with a total cost of asthma including costs of missed work and school and mortality of \$81.9 billion in 2013. Approximately 2,480,000 Pennsylvanians are on Medicaid

and CHIP; these programs bear a large part of the asthma-related costs in the Commonwealth, with for example, Medicaid alone bearing 37% of asthma related hospitalization costs.⁶

30. Another such cost to the Commonwealth will be the increase in costs associated with damages to infrastructure owned and maintained by the Commonwealth as a result of more frequent extreme storm events associated with climate change. In 2018 alone, climate-related costs to the Commonwealth totaled at least \$261 million dollars, which included \$125.7 million in infrastructure damages as a result of flooding and landslides.⁷ From April 2011 through September 2018, there has been about \$212 million in costs to the Commonwealth as result of damages to state-maintained roads and bridges from flooding and landslide events.⁸

⁶U.S. Dep't of Health and Human Services, Medicaid.gov, August 2020 Medicaid & CHIP Enrollment Data Highlights, available at:

<https://www.medicaid.gov/medicaid/program-information/medicaid-and-chip-enrollment-data/report-highlights/index.html>; See Pennsylvania Dep't of Health, 2012 Pennsylvania Asthma Burden Report, p. 37, available at:

http://www.paasthma.org/images/docs/2012_asthma_burden_report.pdf

⁷Pennsylvania Auditor General Eugene A. DePasquale, Climate Crisis Special Report: The Rising Cost of Inaction, pp. 1 available at:

https://www.paauditor.gov/Media/Default/Reports/RPT_Climate_crisis_111219_FINAL.pdf; See Pennsylvania Dep't of Env't'l Prot., "Climate Change in PA," available at: <https://www.depgis.state.pa.us/ClimateChange/index.html>

⁸Pennsylvania Dep't of Transportation, PennDOT Flooding/Slide Damages- April 2011 to September 2018, available at:

<https://www.penndot.gov/PennDOTWay/Pages/Article.aspx?post=165>

Conclusion

31. In sum, the EPA's Waiver Action will benefit the Commonwealth by restoring the Department's authority to implement the GHG standards previously adopted pursuant to section 177 of the CAA. Receiving these GHG standards benefits will assist the Commonwealth in controlling and reducing emissions from light-duty vehicles that cause harmful air pollution. An adverse ruling would frustrate the Commonwealth's efforts to meet its CAA obligations and lead to additional costs to Commonwealth government associated with increased emissions and poorer air quality.

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



Mark Hammond

May 16, 2022

Date

DECLARATION OF CHRISTINE KIRBY

I, Christine Kirby, declare as follows:

1. I am currently employed by the Massachusetts Department of Environmental Protection (MassDEP) as the Assistant Commissioner in charge of the Bureau of Air and Waste and was, prior to my current position, the Director of Air and Climate Programs. I have held the former position for more than 5 years, and I held the latter for 6 years. I have been employed by MassDEP since 1985, having previously held the positions of Deputy Division Director of the Mobile Source Section for 8 years, and Branch Chief for Transportation Programs for 7 years.

2. My job duties include, but are not limited to, overseeing the promulgation and implementation of MassDEP regulations that establish emission standards and other emission-related requirements applicable to on-road mobile sources. I have managed the Massachusetts Low Emission Vehicle (LEV) program since 1997 in my various capacities as Branch Chief, Deputy Director, Director, and Assistant Commissioner. As part of my management responsibilities, I have been involved in numerous revisions to keep the LEV

program up to date with the California standards in order to ensure that Massachusetts meets its air quality obligations and greenhouse gas reduction goals. I also have been the Massachusetts point of contact with the California Air Resources Board (CARB) on development and implementation of the California standards.

3. In my tenure as the Director of Air and Climate Programs, I was the chair of the Mobile Source Committee of the Ozone Transport Commission, which is a multi-state organization created under the Clean Air Act and is responsible for advising the United States Environmental Protection Agency (EPA) on transportation issues and for developing and implementing regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic regions. I also served on the Board of Directors of the Northeast States for Coordinated Air Use Management (NESCAUM), an association of the air quality agencies in eight Northeast states that provides scientific, technical, analytical, and policy support to the air quality programs of those agencies, especially regarding implementation of national environmental programs required under the Clean Air Act and other federal legislation.

4. I have a Bachelor of Arts degree from Clark University.

5. This declaration refers to final actions of Respondent EPA set forth in the notice published at 87 Fed. Reg. 14,322 (March 14, 2022) and titled “California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a Previous Withdrawal of a Waiver of Preemption; Notice of Decision” (Challenged Actions). The Challenged Actions reaffirm the authority of Massachusetts and other states to adopt and enforce California’s light-duty vehicle greenhouse gas emission standards and restore a preemption waiver granted to California that permits enforcement of those standards as well as requirements for zero-emission vehicles, including battery-electric vehicles and fuel-cell vehicles. I am personally familiar with the Challenged Actions.

6. I am submitting this declaration in support of a motion by a coalition of States and cities, including Massachusetts, to intervene in support of Respondents in *Ohio v. EPA*, United States Court of Appeals for the District of Columbia Circuit, No. 22-1081 (and consolidated cases).

Massachusetts is Legally Obligated to Reduce Economywide Greenhouse Gas Emissions

7. The Commonwealth of Massachusetts (Commonwealth) is committed to protecting public health and the environment through programs and policies that address air pollution and climate change.

8. Massachusetts state law imposes legally binding requirements on the Commonwealth to reduce emissions of climate-warming greenhouse gases from sources across the economy. *See Kain v. Mass. Dep't Env'tl. Prot.*, 474 Mass. 278, 287–88 (2016). The Global Warming Solutions Act, signed into law in 2008, and An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy, signed into law in 2021, set forth emission-reduction mandates for the Commonwealth known as “Chapter 21N.” *See* MASS. GEN. LAWS ch. 21N. Chapter 21N mandates that the Commonwealth achieve at least net zero statewide greenhouse gas emissions while also reducing statewide greenhouse gas emissions at least 85% below the 1990 emissions level by 2050, and meet interim emissions-reduction limits in 2025, 2030, 2035, 2040, and 2045. MASS. GEN. LAWS ch. 21N, §§ 3(b), 4(a), & 4(h). Specifically, Chapter 21N requires the Commonwealth’s Secretary of Energy and Environmental Affairs (Secretary) to adopt a 2030 statewide greenhouse gas emissions limit at least 50% below the 1990 emissions level, and a 2040 limit at least 75% below the 1990 emissions level. *Id.* § 4(h).

9. In addition, Chapter 21N directs the Secretary to adopt sector-based statewide greenhouse gas emissions sublimits for various sectors of the Commonwealth's economy, including the transportation sector. MASS. GEN. LAWS ch. 21N, § 3A(a). Those sublimits "shall be designed to maximize the ability of the commonwealth to meet the 2050 statewide greenhouse gas emissions limit." *Id.* §3A(b).

10. Chapter 21N also directs the Secretary to develop implementation plans for obtaining sufficient emissions reductions to meet the 2025, 2030, 2035, 2040, 2045, and 2050 emissions limits and sector-specific sublimits. *Id.* §§ 3(b), 4, 5.

11. The Secretary must adopt statewide greenhouse gas emissions reductions limits and sector-specific submits for 2025 and 2030, and release a comprehensive plan to achieve those limits, by July 1, 2022. 2021 Mass. Acts ch. 8, § 107.

12. On December 30, 2020, the Secretary published an interim updated implementation plan, entitled the "Clean Energy and Climate Plan for 2030" (MA Interim 2030 Climate Plan), which includes a menu of policies to reduce greenhouse gas emissions from all significant emitting sectors, including

transportation.¹ The policies set forth in the MA Interim 2030 Climate Plan represent the Commonwealth's comprehensive strategy to address greenhouse gas emissions from emissions sources across the economy.

13. The Secretary is implementing the strategies, policies, and actions outlined in the MA Interim 2030 Climate Plan as it works to develop and finalize a Clean Energy and Climate Plan for 2025 and 2030 by July 1, 2022, as required by statute.²

14. By Executive Order, Governor Charles Baker established the Commission on the Future of Transportation in the Commonwealth to advise the Governor on how to ensure that transportation planning, forecasting, operations, and investments for 2020 through 2040 can best account for likely demographic, technological, climate, and other changes in future mobility and transportation behaviors, needs, and options.³

¹ See Kathleen Theoharides, *Request for Comment on Clean Energy and Climate Plan for 2030* (Dec. 30, 2020), <https://www.mass.gov/doc/interim-clean-energy-and-climate-plan-for-2030-december-30-2020/download>.

² See Mass. Executive Office of Energy & Environmental Affairs, *Massachusetts Clean Energy and Climate Plan for 2025 and 2030* (2021), <https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2025-and-2030#development-of-the-clean-energy-and-climate-plan-for-2025-and-2030->.

³ See Exec. Order No. 579, § 1 (Mass. 2018), <https://www.mass.gov/executive-orders/no-579-establishing-the-commission-on-the-future-of-transportation-in-the>.

15. MassDEP plays a critical role in implementing Chapter 21N and facilitating the Commonwealth's compliance with emissions-reduction requirements. For instance, MassDEP monitors state-level emissions trends, collects data on emissions from various sources, and records and reports annual statewide and sector-specific emissions through the Commonwealth's Greenhouse Gas Emissions Inventory. MassDEP is also responsible for implementing numerous policies and programs included in the MA Interim 2030 Climate Plan. The Commonwealth's highest court, the Massachusetts Supreme Judicial Court, has recognized that MassDEP shoulders a crucial responsibility in statewide emissions-reductions efforts. Section 3(d) of Chapter 21N requires MassDEP to promulgate regulations that address multiple sources or categories of sources of greenhouse gas emissions, impose a limit on emissions that may be released from such sources, limit the aggregate emissions released from each group of regulated sources or categories of sources, set emission limits for each year, and set limits that decline on an annual basis. *See Kain*, 474 Mass. at 292. MassDEP has promulgated two regulations that impose declining limits on the transportation sector. *See* 310 MASS. CODE REGS. 60.05 ("Global Warming Solutions Act Requirements for Transportation"); *id.* 60.06 ("CO₂ Emission Limits for State Fleet Passenger Vehicles").

Reductions in Transportation-Sector Emissions Are Critical to Achieving Massachusetts' Required Greenhouse Gas-Emissions Reductions

16. Significant reductions in transportation-sector greenhouse gas emissions are critical to achieving Massachusetts' emission-reduction requirements for 2030 and beyond. The transportation sector is the single largest source of greenhouse gas emissions in the Commonwealth, accounting for 41.9% of Massachusetts' statewide emissions in 2018.⁴ Motor vehicles, including light-duty cars and trucks, are a significant source of emissions in the transportation sector. If Massachusetts' transportation-sector emissions were to remain, through 2050, at the 2018 level of 30.8 million metric tons of carbon dioxide equivalent (MMTCO₂e), Massachusetts would not be able to meet its required 2050 emissions limit of, at maximum, 14.1 MMTCO₂e (which is equivalent to 85% below the 1990 emissions level). Even if emissions from all other sectors of the economy were eliminated, emissions from the transportation sector alone would exceed Massachusetts' economy-wide 2050 emissions limit if they did not decline after 2020.

⁴ See MASSDEP, PROPOSED STATEWIDE GREENHOUSE GAS (GHG) EMISSIONS LEVEL: 1990 BASELINE UPDATE, APPENDIX C: MASSACHUSETTS ANNUAL GREENHOUSE GAS EMISSIONS INVENTORY: 1990–2018, WITH PARTIAL 2019 & 2020 DATA (2021), <https://www.mass.gov/doc/statewide-greenhouse-gas-emissions-level-proposed-1990-baseline-update-appendix-c/download>.

Zero-Emission-Vehicle Standards and Greenhouse Gas Emission Standards for Motor Vehicles Are Key to Massachusetts' Compliance with Mandated Emissions Reductions and Provide Substantial Benefits to Massachusetts and Its Residents

17. The Massachusetts Clean Air Act, MASS. GEN. LAWS ch. 111, §§ 142A–142O, specifically section 142K, requires MassDEP to adopt and implement California's emissions standards for new motor vehicles if such standards, in the aggregate, are more protective than federal motor-vehicle emissions standards. *See* MASS. GEN. LAWS ch. 111, § 142K. MassDEP initially adopted California's Low Emission Vehicle (LEV) program under regulations promulgated in 1991. *See* 310 MASS. CODE. REGS. 7.40.

18. MassDEP amended its LEV program regulations in 1999 and again in 2012 to adopt amendments to California's LEV program, including greenhouse gas emission standards, and California's zero-emission-vehicle standards.

19. Under the zero-emission-vehicle standards, large- and intermediate-volume automobile manufacturers have been required to deliver and place in service within the Commonwealth a certain percentage of zero-emission vehicles, including battery-electric vehicles and fuel-cell vehicles. A vehicle manufacturer's zero-emission-vehicles requirement has been based on a percentage of all passenger vehicles and light-duty trucks up to a certain weight limit that it delivers for sale in the Commonwealth. The requirement has been set to increase through 2025 and remain constant for years beyond 2025. Manufacturers subject to the

zero-emission-vehicle standards have earned varying credits depending on the numbers and types of vehicles they delivered and placed in service within Massachusetts. Regulated automobile manufacturers and other entities that earned credits have been permitted to trade or transfer credits.

20. Under the greenhouse gas emission standards, automobile manufacturers must decrease average greenhouse gas emissions on a fleetwide basis for 2017 and subsequent model year cars and light trucks.

21. Reducing greenhouse gas emissions from motor vehicles is an important objective of Massachusetts's LEV program and zero-emission-vehicle standards. Zero-emission vehicles have zero tailpipe emissions of greenhouse gas emissions, and indirect emissions associated with zero-emission-vehicle fueling are far lower than emissions associated with fueling a conventional internal-combustion engine vehicle with gasoline. For instance, accounting for emissions associated with electricity generation, powering an electric vehicle in Massachusetts results in approximately 69 percent fewer carbon dioxide emissions than powering the average gasoline-fueled vehicle.⁵

22. Massachusetts has long relied on its zero-emission-vehicle and greenhouse gas emission requirements as key components of its strategy to

⁵ See U.S. Dep't of Energy, *Emissions from Hybrid and Plug-In Electric Vehicles*, ALTERNATIVE FUELS DATA CENTER, https://afdc.energy.gov/vehicles/electric_emissions.html.

accelerate vehicle electrification and satisfy GWSA mandates. The current LEV and zero-emission-vehicle regulations are among the emissions-reduction policies included in the MA Interim 2030 Climate Plan as part of the Commonwealth's strategy to meet both near-term and long-term emissions-reduction requirements. *See* MA Interim 2030 Climate Plan, *supra*, at 21. The greenhouse gas emission reductions associated with the LEV program and zero-emission-vehicle standards are critical to meeting near-term and long-term emissions-reduction requirements and complying with Chapter 21N. The MA Interim 2030 Climate Plan estimates that the LEV program and zero-emission-vehicle standards will reduce greenhouse gas emissions by 5.1 to 5.4 MMTCO₂e in 2030, accounting for greater emission reductions than any other transportation-sector policy in Massachusetts. *Id.* at 19. The MA Climate Plan expects continued reductions in transportation-sector emissions after 2020 from the regulations. *See id.* at 28, fig. 8.

23. The MA Interim 2030 Climate Plan states that the transportation-sector emissions reductions necessary to meet the Commonwealth's 2030 emission limits will come primarily from powering light-duty vehicles with electricity. MA Interim 2030 Climate Plan, *supra*, at 18. To achieve mandated emissions reduction limits, "sales of new [zero-emission vehicles] must increase annually throughout the 2020s, reaching about 50% of all new [light-duty vehicle] sales by 2030." *Id.* at 21. Because only a portion of Massachusetts' vehicle fleet turns over each year,

the MA Interim 2030 Climate Plan emphasizes that Massachusetts must “continue working to accelerate the market . . . through policies that will help make it easy and affordable to drive [a zero-emission vehicle].” *Id.* at 19. *Id.* The key program for the Commonwealth to achieve this policy objective—and thereby comply with Chapter 21N—is the zero-emission-vehicle standards.

24. In practice, the zero-emission-vehicle standards have proven successful at increasing sales of zero-emission vehicles in Massachusetts. As a result of market and technology changes spurred by the zero-emission-vehicle standards, the total population of electric vehicles in Massachusetts increased more than 12 times between December 31, 2013 and September 30, 2021, from 3,333 to 42,850 electric vehicles.⁶ The MA Interim 2030 Climate Plan anticipated that vehicle electrification would continue to accelerate through 2020 and beyond as a result of the zero-emission-vehicle standards and complementary state policies to support and encourage adoption of zero-emission vehicles. The MA Interim 2030 Climate Plan anticipated 300,000 zero-emission vehicles in use in Massachusetts in 2025, leading to statewide reductions in greenhouse gas emissions from clean or electric vehicles.

⁶ See *Massachusetts Electric (EV) and Plug-In Hybrid Electric (PHEV) Vehicles*, <https://www.mass.gov/doc/chart-showing-electric-vehicle-growth-in-massachusetts/download>.

25. Massachusetts also relies on its zero-emission-vehicle standards to further other important policy goals that benefit the Commonwealth and its residents. Because zero-emission vehicles have a lower total cost of ownership than gasoline-powered vehicles—including lower and less variable fuel costs and fewer vehicle maintenance requirements—those who drive zero-emission vehicles save on overall costs, and those savings spur corresponding local economic benefits. Increased uptake and use of zero-emission vehicles also has broad societal benefits shared by zero-emission-vehicle users and non-users alike. Gasoline-powered vehicles are a major source of local and regional air pollution, emitting carbon monoxide, nitrogen oxides, volatile organic compounds, and fine particulate matter that harm human health and the environment and contribute to dangerous ground-level smog. Zero-emission vehicles, by contrast, have zero tailpipe emissions of conventional pollutants and thus promote pollution reduction, clean air, and public health improvements. Zero-emission vehicles also have the potential to benefit Massachusetts' electric power system—and thus, all electricity consumers—by providing valuable power system services such as dispatching stored energy to the electricity grid during times of high demand.

Massachusetts Has Invested Considerable Public Resources in Complementary Policies Designed to Work in Coordination with the Zero-Emission-Vehicle Standards

26. Massachusetts has implemented a variety of complementary policies designed to work in coordination with the zero-emission-vehicle standards and ensure their long-term success in reducing greenhouse gas emissions and delivering health, economic, and other benefits to Massachusetts residents.

27. For instance, the Governor of Massachusetts joined the Governors of California and nine other states that have adopted California's zero-emission-vehicle standards in forming a "Multi-State ZEV Task Force" to coordinate state actions to build a robust market for zero-emission vehicles.⁷ In 2014, the task force states developed a "Multi-State ZEV Action Plan," which sets forth key zero-emission-vehicle adoption efforts such as the development of publicly available electric vehicle charging infrastructure and installation of fast-charging infrastructure along major travel corridors. *Id.*

28. In 2018, Massachusetts joined eight other states in releasing an updated Multi-State ZEV Action Plan for 2018–2021.⁸ Building on the success of the 2014 plan, the 2018–2021 action plan details 81 efforts to rapidly accelerate consumer adoption of zero-emission vehicles in Massachusetts and partner states.

⁷ See *About the ZEV Task Force*, MULTI-STATE ZEV TASK FORCE, <https://www.zevstates.us/about-us/>.

⁸ Available at: <http://www.nescaum.org/documents/2018-zev-action-plan.pdf>.

29. Many of the initiatives identified in the action plans have been successfully implemented or are underway, including collaborations with vehicle dealerships, consumer outreach and education campaigns in partnership with the automobile industry, and public utility commission proceedings to further transportation electrification programs. And Massachusetts has initiated a variety of programs, with funding from state and other sources, to provide vehicle charging infrastructure, incentives, and education to support the zero-emission-vehicle standards. For example, the Massachusetts Department of Energy Resources funds rebates of up to \$2,500 to residents who purchase or lease zero-emission vehicles. To date, Massachusetts has committed approximately \$48.2 million to its rebate program.⁹ Massachusetts also has invested substantial public funds in the development of charging infrastructure to support the zero-emission-vehicle standards' increasing requirements through 2025. Since 2018, MassDEP has committed \$9.5 million in settlement funds and other funds to various Massachusetts Electric Vehicle Incentive Program (MassEVIP) efforts, including efforts to expand: workplace and fleet charging (\$2.5 million), multi-unit dwelling and educational campus charging (\$1.5 million), public access charging (\$3.5

⁹ See Center for Sustainable Energy, *MOR-EV Program Statistics*, MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES MASSACHUSETTS OFFERS REBATES FOR ELECTRIC VEHICLES (Mar. 14, 2022), <https://mor-ev.org/program-statistics>.

million), direct current fast charging (\$13.1 million), and public fleet electrification (\$0.5 million).¹⁰

30. As the foregoing examples demonstrate, Massachusetts has invested significant public resources in developing and implementing a set of policies designed to complement, and facilitate compliance with, the zero-emission-vehicle standards. Massachusetts has done so based on the assumption the zero-emission-vehicle standards would remain in effect and require a minimum percentage of zero-emission vehicles to be delivered and placed in service within the Commonwealth through 2025 and beyond.

31. In making these investments, Massachusetts also anticipated that the zero-emission-vehicle standards would amplify the benefits of the Commonwealth's complementary policies, and vice versa. Specifically, the complementary policies were designed to work in coordination with zero-emission-vehicle standards to overcome inherent "network" barriers to developing a robust market for zero-emission vehicles in Massachusetts. For instance, where too few electric vehicles are in use, businesses are reluctant to invest in vehicle charging infrastructure, the paucity of which, in turn, reduces the value of electric vehicles to consumers and further depresses demand for electric vehicles. The

¹⁰ See *Massachusetts Electric Vehicle Incentive Program (MassEVIP) VW Settlement Charging Station Programs* (Dec. 24, 2020), <https://www.mass.gov/doc/matrix-of-massevip-grant-programs/download>.

reverse is also true: a consumer's purchase of an electric vehicle increases demand for vehicle charging infrastructure, and increased supply of charging infrastructure further encourages consumers to purchase electric vehicles. Increased uptake of zero-emission vehicles resulting from the zero-emission-vehicle standards would thus promote the market conditions necessary for the Commonwealth's complementary policies and investments to be most effective. In short, the zero-emission-vehicle standards are essential to realize the full extent of benefits Massachusetts anticipated from its suite of complementary zero-emission-vehicle policies, including development of a robust market for zero-emission vehicles in Massachusetts.

The Challenged Actions Directly and Concretely Benefit Massachusetts

32. By reaffirming the authority of Massachusetts to maintain its zero-emission-vehicle standards, the Challenged Actions will result in significantly greater sales of zero-emission vehicles and increase market penetration of zero-emission vehicles in Massachusetts. Massachusetts' zero-emission-vehicle standards have resulted in more zero-emission vehicles in the state as compared to other states that have not adopted zero-emission-vehicle standards. Massachusetts' zero-emission-vehicle standards also have sent a market signal to other zero-emission-vehicle-related businesses (e.g., electric vehicle supply equipment

vendors) to increase deployment of zero-emission vehicles and focus on Massachusetts.

33. In addition, because the Challenged Actions reaffirmed the authority of Massachusetts to adopt and enforce California's greenhouse gas emission standards, Massachusetts can now be assured that its LEV program will continue to achieve anticipated reductions in greenhouse gas emissions from motor vehicles. For at least the next few model years, federal greenhouse gas emissions standards do not require reductions in emissions equivalent to the reductions required under Massachusetts' regulations.

34. As a result, greenhouse gas emissions from Massachusetts' transportation sector will be lower. Given that the transportation sector is the single largest source of greenhouse gas emissions in the Commonwealth, the Challenged Actions will result in lower transportation-sector emissions and will significantly support Massachusetts' ability to obtain the greenhouse gas emissions reductions mandated by Chapter 21N.

35. Massachusetts' zero-emission-vehicle standards also will increase the benefits anticipated from the Commonwealth's complementary zero-emission-vehicle policies, which had been designed to work in concert with the zero-emission-vehicle standards and capitalize on network effects. Because significantly more zero-emission vehicles will be delivered and placed in service

within the Commonwealth as a result of the Challenged Actions, Massachusetts can expect its policies to lead to development of a robust market for zero-emission vehicles in Massachusetts—further supporting Massachusetts’ ability to comply with long-term greenhouse gas emissions-reduction mandates.

36. In addition, Massachusetts’ zero-emission-vehicle standards and greenhouse gas emissions requirements for motor vehicles also generate other benefits associated with uptake and use of zero-emission vehicles that accrue to Massachusetts residents, including direct consumer cost savings, local economic benefits, public health and environmental improvements, and power system benefits. Those benefits represent substantial gains for Massachusetts residents.

37. The zero-emission-vehicle standards also will positively impact the Commonwealth’s business sector. MassDEP expects that, given the cutting-edge nature of the vehicle technologies and technology programs at Massachusetts’ colleges and universities, the zero-emission-vehicle standards will facilitate the creation of start-up ventures related to the increased requirement for advanced technology vehicles, and that companies that produce parts for or service zero-emission vehicles will be incentivized to move to or expand within the Commonwealth.

38. In conclusion, the Challenged Actions directly and concretely benefit Massachusetts.

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

Executed in Arlington , Massachusetts on May 13, 2022.



Christine Kirby
Assistant Commissioner
Bureau of Air and Waste
Massachusetts Department of
Environmental Protection