

**ORAL ARGUMENT NOT YET SCHEDULED**

Case No. 19-1019 (and consolidated cases)

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**United States Court of Appeals  
for the District of Columbia Circuit**

STATE OF NEW YORK, ET AL.,

*Petitioners,*

v.

ENVIRONMENTAL PROTECTION AGENCY, ET AL.,

*Respondents.*

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ON PETITION FOR REVIEW OF FINAL ACTION BY THE  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
83 Fed. Reg. 65,878 (Dec. 21, 2018)

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**OPENING PROOF BRIEF FOR STATE PETITIONERS**

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## CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), the undersigned counsel of record certifies as follows:

### **A. Parties**

*Petitioners:* The following parties appear in this case as petitioners: New York, Connecticut, Delaware, Maryland, Massachusetts, New Jersey, and the City of New York.

*Respondents:* The following parties appear in this case as respondents: United States Environmental Protection Agency and Andrew Wheeler, in his official capacity as Administrator of EPA (together, EPA).

*Intervenors:* The following parties appear in this case as respondent-intervenors: the Utility Air Regulatory Group; the State of Texas and the Texas Commission on Environmental Quality; and Homer City Generation, L.P.

*Amici:* As of the date of this filing, no party has sought or been permitted to appear in this action as amicus curiae.

## B. Rulings Under Review

Petitioners seek review of the final agency action by respondents entitled “Determination Regarding Good Neighbor Obligations for the 2008 Ozone National Ambient Air Quality Standard,” 83 Fed. Reg. 65,878 (Dec. 21, 2018).

## C. Related Cases

The final agency action at issue in this proceeding has not been previously reviewed in this or any other court. On January 30, 2019, a separate petition for review challenging the same final agency action was filed and docketed as *Downwinders at Risk v. EPA*, No. 19-1020 (Doc. No. 1771318). The Court, on its own motion, consolidated the two cases on January 30, 2019. On February 19, 2019, a separate petition for review challenging the same final agency action was filed and docketed as *Texas Environmental Justice Advocacy Services v. EPA*, No. 19-1047 (Doc. No. 1774514). The Court, on its own motion, consolidated this third case with the previous two on February 22, 2019. (Doc. No. 1774519).

There is one related case currently pending in this Court, *Wisconsin v. EPA*, No. 16-1406 (and consolidated cases). There are no other related cases within the meaning of D.C. Circuit Rule 28(a)(1)(C).

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\* Authorities upon which Petitioners principally rely are marked with an asterisk.

## GLOSSARY

Act	Clean Air Act
AG Comments	Comments of the Attorneys General of the States of New York, Connecticut, Maryland, and New Jersey and the Corporation Counsel of the City of New York on the Proposed Close Out Rule, EPA-HQ-OAR-2018-0225-0318 (Aug. 31, 2018)
Close-Out Rule, or Rule	Determination Regarding Good Neighbor Obligations for the 2008 Ozone National Ambient Air Quality Standard, 83 Fed. Reg. 65,878 (Dec. 21, 2018)
CMAQ	An air quality model known as the Community Multiscale Air Quality Modeling System
Cross-State Update or Update	Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, 81 Fed. Reg. 74,504 (Oct. 26, 2016)
Connecticut Comments	Comments of the Connecticut Department of Energy & Environmental Protection on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0312 (Aug. 31, 2018)
Delaware Comments	Comments of the Delaware Department of Natural Resources & Environmental Control on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0097 (Aug. 31, 2018)

Earthjustice Comments	Comments of Earthjustice, <i>et al.</i> , on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0319 (Aug. 31, 2018)
EPA	United States Environmental Protection Agency
Good Neighbor Provision	42 U.S.C. § 7410(a)(2)(D)(i)(I)
JA	Joint Appendix
lb/mmBtu	pounds per million British thermal units
Maryland Comments	Comments of the Maryland Department of the Environment on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0093 (Aug. 31, 2018)
National Standards	National ambient air quality standards
New York Comments	Comments of the New York State Department of Environmental Conservation on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0094 (Aug. 31, 2018)
OTC Comments	Comments of the Ozone Transport Commission on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0316 (undated)
Transport Region	The Ozone Transport Region created pursuant to 42 U.S.C. § 7511c(a), which currently includes Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, part of northern Virginia, and the District of Columbia

2008 ozone standard            The national ambient air quality standards  
for ozone promulgated by EPA in 2008

2015 ozone standard            The national ambient air quality standards  
for ozone promulgated by EPA in 2015

## PRELIMINARY STATEMENT

The Environmental Protection Agency (EPA) has a statutory obligation under the Clean Air Act to regulate emissions of ozone-causing air pollution from upwind States. This pollution is carried by prevailing winds into downwind States—including State Petitioners—that have long had problems meeting federal air-quality standards for ozone, in significant measure because of these upwind emissions. Because downwind States bear much of the harms of this pollution, upwind States have little incentive to implement pollution-reducing controls on their in-state sources. As a result, millions of people in downwind nonattainment areas face elevated risk of serious health problems from ozone pollution, and emission sources in downwind States are subject to stringent controls at levels far greater than sources in upwind States.

To address this problem, the Clean Air Act contains multiple mechanisms to impose cross-state air pollution obligations. One mechanism is the Good Neighbor Provision, 42 U.S.C. § 7410(a)(2)(D)(i)(I), which requires upwind States to prohibit emissions that significantly contribute to downwind States' inability to attain or maintain air-quality standards. If upwind States fail to satisfy this

obligation, EPA must itself impose obligations on those States to prohibit emissions that unduly affect downwind States.

This case concerns a regional rulemaking in which EPA determined that twenty upwind States have fully satisfied their Good Neighbor obligations for the 2008 ozone standard—and thus need impose no additional upwind emission-control measures—even though uncontroverted evidence demonstrated that sources in upwind States are emitting pollution in quantities that prevent downwind States from attaining and maintaining the ozone standard. EPA’s rulemaking is arbitrary and capricious and contrary to law for multiple reasons, and should be vacated.

First, EPA unlawfully measured upwind States’ compliance based on projections of improved air quality in 2023, when the next relevant statutory deadline for attainment of the 2008 ozone standard is 2021. EPA’s reasoning directly conflicts with this Court’s precedents, which hold unequivocally that EPA must align upwind emissions reductions with statutory attainment deadlines. *North Carolina v. EPA*, 531 F.3d 896, 911-12 (D.C. Cir.), *amended in part on reh’g*, 550 F.3d 1176 (D.C. Cir. 2008).



Second, EPA acted arbitrarily and capriciously in concluding that no cost-effective controls were available to reach attainment by 2021. EPA erred in adopting a measure for cost-effectiveness that it had earlier used to identify control measures that would *partially* and *within one year* reduce ozone emissions; there was no reasonable basis for EPA to use that same measure to identify controls that would *fully* remedy that pollution problem. Moreover, EPA arbitrarily rejected the use of available control measures that its own analysis showed would be cost-effective—indeed, it did not even consider additional measures to require sources to more fully use those controls.

Finally, EPA relied on faulty modeling to conclude that downwind States will, without further regulatory action, come into attainment with the 2008 ozone standard by 2023. EPA's projections are contradicted by recent data; moreover, they rely on unenforceable assumptions about voluntary steps that power plants might take to reduce emissions. Contrary to its own guidance, EPA also failed to give any weight to other data and models showing that attainment problems will persist.

## JURISDICTIONAL STATEMENT

Petitioners challenge EPA's final action, "Determination Regarding Good Neighbor Obligations for the 2008 Ozone National Ambient Air Quality Standard," 83 Fed. Reg. 65,878 (Dec. 21, 2018) (Close-Out Rule or Rule), JA-\_\_\_\_-\_\_\_\_, in which EPA declined to set additional interstate pollution reduction requirements pursuant to the Act's Good Neighbor Provision. EPA stated that its final action was "nationally applicable" or, in the alternative, based on a determination of "nationwide scope and effect," 83 Fed. Reg. at 65,923/3, which gives this Court exclusive jurisdiction to review the Rule. 42 U.S.C. § 7410. The State Petitioners timely filed their petition for review. *See* 42 U.S.C. § 7607(b).

## ISSUES PRESENTED

1. Whether EPA violated the Clean Air Act by failing to provide emission reductions in time for the next statutory attainment deadline, in violation of the statutory requirement that EPA act "consistent with" such deadlines.
2. Whether EPA arbitrarily and capriciously determined that no feasible controls could reduce emissions by the 2021 attainment deadline, where EPA applied an arbitrary cost threshold to eliminate available

control measures, and where EPA improperly rejected evidence that improved use of controls that it previously determined to be cost-effective could achieve additional emissions reductions.

3. Whether EPA improperly relied on projections showing attainment in 2023, when EPA's underlying modeling incorporated unreasonable assumptions and produced questionable results.

### **STATUTES AND REGULATIONS**

Relevant statutory and regulatory provisions are in the Addendum filed with this brief.

### **STATEMENT OF THE CASE**

#### **A. Ground-Level Ozone**

Ground-level ozone forms when precursor pollutants, including nitrogen oxides and volatile organic compounds, react in the presence of sunlight. *See* 81 Fed. Reg. 74,504, 74,513/3 (Oct. 26, 2016). Exposure to elevated levels of ozone severely harms public health and ecosystems. 80 Fed. Reg. 65,292, 65,302-11 (Oct. 26, 2015); 81 Fed. Reg. at 74,514/3. *See* Citizen Petitioners' Br. at 6-8, 18-19, 25-31.

## **B. Statutory Background**

### **1. National Ambient Air Quality Standards for Ozone**

EPA must establish and periodically revise national ambient air quality standards for ozone and other pollutants. 42 U.S.C. §§ 7409(b)(1), 7407. States have primary responsibility for ensuring that air quality within their borders meets these standards “as expeditiously as practicable but not later than” statutory attainment deadlines. 42 U.S.C. §§ 7511(a)(1) & (b)(1). If States’ measures are inadequate to control their own pollution, EPA must adopt and enforce federal measures to ensure timely attainment. *Id.* §§ 7407(a), 7511(a).

In 2008, EPA promulgated a revised national standard for ozone of 75 parts per billion (ppb). 73 Fed. Reg. 16,436 (Mar. 27, 2008). In 2015, based on updated scientific information about the health risks of ozone at lower concentrations, EPA reduced the ozone standard to 70 ppb. 80 Fed. Reg. at 65,292/1. States are responsible for meeting both the 2008 and 2015 standards on a set of overlapping deadlines. The number of years that a State has to meet a standard depends on the degree of nonattainment, with EPA classifying nonattainment areas by level of severity. For the 2008 ozone standard, the respective deadlines for areas

designated as “marginal,” “moderate,” and “serious” nonattainment are July 20, 2015; July 20, 2018; and July 20, 2021. 80 Fed. Reg. 12,264, 12,268/2 (Mar. 6, 2015).

To evaluate whether an area has attained the requisite air quality by the relevant deadline, EPA uses, among other data, measurements from ozone monitors during the three ozone seasons (generally May through September) preceding the deadline year. For States subject to the 2021 serious nonattainment deadline, the final measurements used to determine attainment will be from the 2020 ozone season. *See* 83 Fed. Reg. at 65,892/2, 65,905/2.

## **2. Interstate Transport of Ozone Pollution**

Ozone pollution develops on a regional scale over much of the eastern United States, with ozone and its precursors traveling with the wind across state lines, sometimes hundreds of miles from their sources. 81 Fed. Reg. at 74,514/1. Many areas downwind of prevailing winds have problems attaining or maintaining the ozone standard because of emissions transported from sources in upwind States. At one monitor in Staten Island, New York, for example, EPA projected that over 33 percent of the ozone in 2017 would come from upwind sources not in the

same nonattainment area (the New York Metro Area) and less than 6 percent of the ozone at that location was projected to come from in-state sources. Air Quality Modeling Technical Support Document for the Final Cross State Air Pollution Rule Update at C-3 (Richmond County, NY) (Aug. 2016), JA-\_\_\_\_\_.

When a State's pollution problems are substantially caused by inadequately controlled sources in upwind States, the downwind State must regulate its own sources more stringently to compensate. But even after imposing costly controls, many downwind areas are unable to attain healthy air without reductions from upwind States.

Given this long-recognized problem, the Clean Air Act requires that upwind States take sufficient steps to reduce the pollution they send downwind. Without the Act's protections, upwind States would have little incentive to spend money on controls to reduce emissions whose harms are in large part felt downwind. *See EPA v. EME Homer City Generation, L.P.*, 572 U.S. 489, 495 (2014). Congress has thus included several complementary mechanisms in the Act to address interstate pollution transport: (1) the Good Neighbor Provision at issue in this proceeding, 42 U.S.C. § 7410(a)(2)(D)(i)(I); (2) the section 126 petition process, 42 U.S.C.

§ 7426; and (3) the ozone transport region provisions in sections 176A and 184, 42 U.S.C. §§ 7506a & 7511c.

**a. The Good Neighbor Provision**

Within three years of any revised national ozone standard, all States must submit state implementation plans for EPA's approval that provide for emissions controls that will accomplish the attainment and maintenance of the national standard. 42 U.S.C. § 7410. States are required to ensure not just the attainment and maintenance of national standards within their own borders, but also to control emissions that would cross state lines and affect downwind States' ability to meet those standards. Accordingly, the Good Neighbor Provision, section 110(a)(2)(D)(i)(I), requires that each state plan contain "adequate provisions" that "prohibit" sources "from emitting any air pollutant in amounts which will . . . contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any [national standard]." 42 U.S.C. § 7410(a)(2)(D)(i)(I). If EPA rejects a state plan because it fails to satisfy the Good Neighbor Provision (or any other requirements), EPA must issue a compliant federal implementation plan within two years. *Id.* § 7410(c)(1).

**b. Section 126**

Under section 126(b) of the Act, any State “may petition the Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the prohibition of” the Good Neighbor Provision. 42 U.S.C. § 7426(b). EPA must act on the petition within sixty days. *Id.* Upon EPA’s finding of a violation under section 126, the identified sources must either cease operation within three months, or meet EPA-imposed emissions limitations that will bring the source into compliance within three years. *Id.* § 7426(c).

**c. Ozone Transport Region**

Congress also has created an ozone transport region comprised of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, part of Virginia, and the District of Columbia (Transport Region). 42 U.S.C. §§ 7511c(a)-(b). States within the Transport Region must implement various mandatory measures to reduce emissions from a wide spectrum of sources. Congress also established a transport commission for Transport Region members to collaborate on additional



control measures, *id.* §§ 7506a, 7511c(c)(1), and a process for expanding the Transport Region under section 176A of the Act, 42 U.S.C. § 7506a(a)(1).

### **C. The State Petitioners' Efforts to Attain Ozone Standards and Their Current Nonattainment Problems**

For decades, State Petitioners have imposed stringent and costly ozone controls on in-state sources. Nonetheless, they continue to struggle to attain and maintain ozone standards in areas including the New York Metro Area, the Philadelphia Metro Area, the Greater Connecticut Area, and the Baltimore Area.<sup>1</sup>

State Petitioners have required in-state sources to install and use controls that have cost billions of dollars.<sup>2</sup> The stringent controls mandated by State Petitioners have imposed costs on in-state sources of

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<sup>1</sup> Five areas covering part or all of some of the Petitioner States are still designated nonattainment for the 2008 standard: the New York Metro Area, the Philadelphia Metro Area, the Baltimore Metro Area, the Greater Connecticut Area, and the Jamestown, NY Area. *See* EPA, “Green Book: 8-Hour Ozone (2008) Designated Area/State Information,” <https://www3.epa.gov/airquality/greenbook/hbtc.html>.

<sup>2</sup> For example, a single Maryland law requiring controls on in-state power plants was estimated to cost \$2.6 billion. *See* Md. Code Ann. Env’t §§ 2-1001-1002; Code of Md. Regs. Ch. 26.11.27, AG Comments at 20, JA-\_\_\_\_\_.

up to \$44,000 per ton of pollutant eliminated.<sup>3</sup> By comparison, upwind States have not been required to impose similarly costly measures despite the fact that their emissions directly affect State Petitioners' air quality. For example, in the 2016 Cross-State Update Rule, EPA declined to consider any controls on upwind sources at costs above \$1,400 per ton. AG Comments at 19-20, JA-\_\_\_\_\_.

Notwithstanding their expensive—and effective<sup>4</sup>—efforts to reduce ozone pollution from in-state sources, State Petitioners still face problems attaining and maintaining the 2008 ozone standard. In 2012, EPA designated the New York Metro Area as in “marginal”

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<sup>3</sup> Among the controls State Petitioners have imposed are: “reasonably available control technology” reductions in volatile organic compound and nitrogen oxide emissions from power plants and other sources; adoption of California’s nitrogen oxide controls for motor vehicles; measures to reduce volatile organic compound emissions from sources including consumer products, adhesives and sealants, and asphalt paving; and specific daily controls on power plants. AG Comments at 5-6, JA-\_\_\_\_\_.

<sup>4</sup> Connecticut’s power plants and other major sources reduced ozone-season nitrogen-oxide emissions by 76 percent between 2008 and 2017; Maryland’s nitrogen-oxide emissions from stationary sources decreased by at least 75 percent between 2003 and 2014; New Jersey’s annual nitrogen-oxide and volatile-organic-compound emissions decreased approximately 77 percent from 1990 to 2017; and New York’s power plants reduced ozone-season nitrogen-oxide emissions by 73 percent between 2008 and 2017. AG Comments at 6, JA-\_\_\_\_\_.

nonattainment for the 2008 standard, subject to a July 2015 attainment deadline. 77 Fed. Reg. 20,088, 30,135 (May 21, 2012). When the area did not attain the standard by that date, EPA reclassified it to “moderate” nonattainment, subject to a July 2018 attainment deadline. 81 Fed. Reg. 26,697, 26,715, 26,719 (May 4, 2016). When the area failed to meet that attainment date, New York requested that EPA classify the area as “serious” nonattainment, with a July 2021 attainment deadline. Sheehan Decl. Doc. No. 1775911, at ¶28. Similarly, as EPA admits, Maryland continues to have problems maintaining the 2008 ozone standard due to interstate pollution transport. *See* 83 Fed. Reg. 50,444, 50,458 (Oct. 5, 2018).

Modeling by the New York State Department of Environmental Conservation and the Transport Region commission shows that without further out-of-state reductions, the New York Metro Area and other downwind nonattainment areas will not be able to attain the 2008 standard by the upcoming 2021 deadline. OTC Comments at 17, Table 3 (2020 ozone design values from CMAQ modeling for Sherwood Island Westport, Greenwich Point, and Lighthouse-Stratford (CT); Susan Wagner HS (NY); and Edgewood (MD) monitors), JA-\_\_; AG Comments

at 24, JA-\_\_\_\_; *see also* New York Comments at Attachment 3-8, JA-\_\_\_\_-\_\_\_\_. No modeling shows a contrary result.

**D. EPA's Failure to Provide a Full Remedy for Interstate Transport Under the 2008 Standard**

**1. The Cross-State Update's Partial Remedy**

In 2016, pursuant to its duty to promulgate federal plans for the upwind States that had failed to satisfy their Good Neighbor obligations for the 2008 ozone standard, EPA promulgated the Cross-State Update. 81 Fed. Reg. at 74,504. In determining the appropriate amount of emissions reductions, however, EPA focused only on reductions from power plants, at a marginal cost of \$1,400 per ton or less, that could be achieved by the next year's ozone season to assist downwind States before the 2018 attainment deadline. *See, e.g., id.* at 74,516/3-74,517/1. EPA used the \$1,400 threshold because it found controls at that level to be most cost-effective as compared to other controls that were also available. *Id.* at 74,550/1. EPA allocated to each upwind State a budget of tradeable emission allowances, reflecting the reductions that EPA anticipated sources in each State would be able to achieve through proper use of controls meeting the \$1,400 threshold. *Id.* at 75,553, Table VI.E-2. For each ton of pollution emitted by an upwind source covered by the Update,

that source must have an allowance. Rather than limit its own emissions, a source may purchase allowances in the market at the prevailing rate.

Given the Update's limitations, EPA admitted that the rule was not a "full solution," but only a "first, partial step" or "partial remedy" towards satisfying upwind States' Good Neighbor obligations under the 2008 ozone standard. *Id.* at 74,520/3, 74,522/1, 74,508/3; *see also id.* at 74,506/1 (rule "partially address[es] EPA's . . . outstanding obligations to prohibit interstate transport"); *id.* at 74,520/3 ("partial nature of the remedy provided by this rule"); *see generally id.* at 74,521/2-74,523/2. EPA expected that "a full resolution of upwind transport obligations" would require, *inter alia*, "further [power plant] reductions that are achievable after 2017," *id.* at 74,522/2, and that even after all of the Update's emission reductions were implemented, attainment and maintenance problems in downwind areas might remain. *Id.* at 74,520/3, 74,521-22.

The Update is currently under review in this Court in a related case, *Wisconsin v. EPA*, No. 16-1406. Recognizing that a partial remedy is better than no remedy—and expecting EPA to fulfill its obligation to further regulate upwind sources in future rulemakings—three of the

State Petitioners intervened in defense of the Update from numerous legal challenges.<sup>5</sup> See Brief of New York, *et al.*, *Wisconsin v. EPA*, No. 16-1406 [Doc. No. 1725791] (Apr. 9, 2018).

## 2. EPA's Delays and Denials of Other Remedies

Despite the concededly partial nature of the Update's remedy, EPA has rejected requests to use the Act's other provisions to fully remedy interstate ozone transport. In December 2013, a group including petitioners Connecticut, Delaware, Maryland, Massachusetts, and New York submitted a section 176A petition to expand the Transport Region to include additional upwind States whose emissions contribute to the regional ozone problem. After being compelled by litigation to take action,<sup>6</sup> EPA denied the request in 2017. 82 Fed. Reg. 51,238 (Nov. 3, 2017). EPA justified its denial primarily on the agency's stated preference for using other provisions of the Act—the Good Neighbor Provision and section 126—that purportedly offer more “flexible,” “cost-effective,” and “tailored” remedies. *Id.* at 51,242/1, 51,246/3. That

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<sup>5</sup> Petitioner Delaware challenged the Update.

<sup>6</sup> *New York v. McCarthy*, No. 16-cv-827 (S.D.N.Y.).

determination is under review by this Court. *State of New York v. EPA*, No. 17-1273.

In 2016, Connecticut, Delaware, and Maryland submitted a total of six section 126 petitions, requesting that EPA impose emission limits on particular sources in upwind States that were hindering those petitioners' ability to attain the 2008 standard. Connecticut and Maryland filed suit to compel action after EPA failed to resolve the petitions within the statutory period,<sup>7</sup> and in 2018, EPA denied all six petitions. 83 Fed. Reg. 16,064 (April 13, 2018) (Connecticut); 83 Fed. Reg. 50,444 (Oct. 5, 2018) (Delaware and Maryland). EPA's denials are under review by this Court. *Maryland v. EPA*, No. 18-1285 (D.C. Cir.).

In March 2018, New York filed a section 126 petition seeking reductions from hundreds of upwind sources that are significantly contributing to ongoing and projected ozone problems in the New York Metro Area. 83 Fed. Reg. 21,909 (May 11, 2018). EPA again failed to take timely action, forcing New York to file suit to compel EPA to act. *New York v. Wheeler*, No. 1:19-cv-03287-JMF (S.D.N.Y., filed Apr. 12, 2019).

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<sup>7</sup> *Connecticut v. Pruitt*, No. 17-cv-00796, 2018 WL 745953 (D. Conn. Feb. 7, 2018); *Maryland v. Pruitt*, No. 17-cv-02873 (D. Md.).

### **3. Consequences for State Petitioners of EPA's Inaction**

In large measure because of EPA's incomplete and untimely use of these provisions, not all State Petitioners have been able to attain the 2008 standard more than ten years after it was promulgated. As a result, tens of millions of residents in the New York Metro Area and other nonattainment areas face continued risk of serious health problems and premature death from excess ozone. The States with nonattainment areas also face substantial and costly regulatory requirements, including, for example, an obligation to implement additional three-percent annual reductions of ozone-causing pollutants. 42 U.S.C. § 7511a(c)(2)(B) & (C); *see also* 42 U.S.C. § 7511a(c)(1), (3)-(9) (other regulatory programs).

#### **E. The Close-Out Rule and This Litigation**

Because it only provided a partial remedy in the 2016 Update, EPA remained obligated to promulgate federal plans fully resolving the Good Neighbor obligation of twenty-one States by August 2017. 80 Fed. Reg. 39,961, 39,961/3 (Jul. 13, 2015) (effective Aug. 12, 2015). Connecticut and New York filed suit after EPA missed that deadline, and a district court ordered EPA to promulgate a final rule by December 6, 2018. *See* 83 Fed. Reg. at 65,904/3; Order [Doc. No. 34], *New York v. Pruitt*, No. 18-cv-



00406-JGK, (S.D.N.Y. June 12, 2018). In response, EPA promulgated the final “Close-Out Rule.”

In the Rule, EPA did not conduct any analysis of downwind States’ ability to attain the 2008 ozone standard by 2021—the next attainment deadline—nor any analysis of upwind States’ contributing emissions at that time. Instead, relying entirely on prior analysis, EPA concluded that it need not model ozone emissions or concentrations in years relevant to that deadline because no feasible emission reductions were available until 2023. *See, e.g.*, 83 Fed. Reg. at 65,885/3, 65,904/3-65,905/1. And relying on that 2023 date, EPA asserted that its modeling showed that no downwind area (outside of California) would have difficulty attaining or maintaining the 2008 ozone standard at that time. *Id.* at 65,879/1, 65,905/1. Based on that determination, EPA did not promulgate new federal plans for twenty upwind States,<sup>8</sup> including the many where sources at present are emitting ozone pollution in such significant

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<sup>8</sup> Although twenty-one States had remaining Good Neighbor obligations after the Update, EPA purported to satisfy the obligations of one of those States by approving its state plan in a separate rulemaking prior to the Rule. *See* 83 Fed. Reg. at 65,879/2.

amounts that downwind States remain unable to attain and reliably maintain the 2008 ozone standard.

On January 13, 2019, State Petitioners filed a petition for review of the Close-Out Rule, which was consolidated with two petitions brought by citizen groups. On April 1, 2019, the Court granted Petitioners' motion to expedite and ordered argument on the first appropriate date after completion of briefing. Order (Apr. 1, 2019) [Doc. No. 1780502].

### STANDING

States are not “normal litigants” for standing purposes, and are entitled to “special solicitude” when challenging a federal agency’s failure under the Act to protect States from harmful air pollution. *Massachusetts v. EPA*, 549 U.S. 497, 518, 520 (2007). Without the ozone reductions required by the Good Neighbor Provision—reductions that the Close-Out Rule has illegally and arbitrarily failed to require—State Petitioners will need to take additional, burdensome regulatory action to reduce in-state emissions to meet the imminent 2021 ozone deadline. Agency action that makes it more onerous for States to address pollution causes injury sufficient to establish standing. *West Virginia v. EPA* 362 F.3d 861, 868

(D.C. Cir. 2004); *see also* 81 Fed. Reg. at 74,516/2 (downwind States already bear an “inequitable burden”).

Excess ozone due to the Rule will also inflict increased risks of illness and premature death on State Petitioners’ residents, which will impose health-related costs on the States and result in other economic harms from missed school and work days. *See* Sheehan Decl. Doc. No. 1775911, at ¶¶37, 73; *see also* Davis Decl. Doc. No. 1775911, ¶¶11-12, 28. High ozone levels will also harm the States’ ecosystems. *See* 81 Fed. Reg. at 74,514/3 (ozone “causes visible foliar injury, decreases plant growth, and affects ecosystem community composition”).

These harms are directly traceable to emissions from upwind States. Years of EPA analysis have shown that upwind emissions significantly contribute to State Petitioners’ inability to attain and maintain the 2008 ozone standard. *See, e.g.*, 81 Fed. Reg. at 74,538, Tables V.E-2 & V.E-3; Air Quality Modeling Technical Support Document for the Final Cross State Air Pollution Rule Update at C-3, JA-\_\_\_\_; Maryland Comments at 1, JA-\_\_\_\_; Connecticut Comments at 3-5, JA-\_\_-\_\_. Vacating the Close-Out Rule and ordering EPA to promulgate

a replacement in time for the 2020 ozone season would assist downwind States in attaining and maintaining the standard.

### **STANDARD OF REVIEW**

This Court may reverse agency action that is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 42 U.S.C. § 7607(d)(9)(A). Agency action is arbitrary and capricious “if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983). “Where, as here, Congress has delegated to an administrative agency the critical task of assessing public health and the power to make decisions of national import in which individuals’ lives and welfare hang in the balance, that agency has the heaviest of obligations to explain and expose every step of its reasoning.” *American Lung Ass’n v. EPA*, 134 F.3d 388, 392 (D.C. Cir. 1998).

## SUMMARY OF ARGUMENT

I. EPA unlawfully disregarded State Petitioners' 2021 attainment deadline by choosing 2023 as the year for evaluating the availability and need for additional upwind pollution controls. State Petitioners face an upcoming statutory deadline to attain the 2008 ozone standard by July 2021, and the Good Neighbor Provision requires that EPA impose enforceable upwind emission reductions that are consistent with these deadlines for downwind attainment. *See North Carolina*, 531 F.3d at 911-12. EPA's complete disregard of the 2021 statutory deadline was unlawful.

II. EPA's analysis of attainment in 2023 was also based on an arbitrary premise: that no further cost-effective emissions reductions are available before then. First, EPA irrationally eliminated from consideration several available controls by using a cost-effectiveness threshold from its 2016 Cross-State Update. But the Update's cost-effectiveness threshold was chosen for purposes of that rulemaking's *partial* and *immediate* response to ozone pollution; EPA has provided no reasonable basis to apply the same threshold to the Close-Out Rule's evaluation of *complete* and *longer-term* control measures. Second, EPA

also arbitrarily ignored record data demonstrating that upwind sources are not fully operating pollution controls that EPA has already determined are cost-effective, and that additional reductions from those controls are both available and necessary.

III. EPA relied on flawed 2023 modeling. EPA incorporated unreasonable assumptions, improperly assumed that private actors would voluntarily reduce their emissions without any enforceable requirements to do so, and disregarded record data and modeling showing significant uncertainty about EPA's projections.

## **ARGUMENT**

### **POINT I**

#### **EPA UNLAWFULLY DISREGARDED ITS STATUTORY MANDATE TO IMPLEMENT THE GOOD NEIGHBOR PROVISION CONSISTENT WITH THE ACT'S ATTAINMENT DEADLINES**

EPA violated the Clean Air Act by failing to require any emissions reductions by sources in upwind States in time for the impending attainment deadlines of nonattainment areas in downwind States. EPA decided that upwind States need not adopt any additional controls based on its projections that air-quality problems in downwind States will be resolved *by 2023*. But EPA had a statutory obligation to regulate cross-

state ozone pollution no later than 2021, the next statutory attainment deadline.

The Good Neighbor Provision forbids EPA’s approach. That provision mandates that each State’s implementation plan include measures prohibiting emissions that “contribute significantly” to other States’ inability to attain or maintain the ozone standard. 42 U.S.C. § 7410(a)(2)(D)(i)(I). To comply with that obligation, a State’s plan—whether issued by the upwind State or EPA—must reduce interstate pollution “consistent with the provisions of [Title I of the Act].” 42 U.S.C. § 7410(a)(2)(D)(i). Title I, in turn, mandates that States come into attainment both “as expeditiously as practicable,” and “not later than” set statutory deadlines. 42 U.S.C. § 7502(a)(2)(A), *see also id.* § 7511(a)-(b) (table setting deadlines based on severity of nonattainment).<sup>9</sup>

This Court has interpreted that language as imposing a “statutory mandate” to promulgate Good Neighbor rules “consistent with the . . . compliance deadlines for downwind states.” *North Carolina*, 531 F.3d at

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<sup>9</sup> *See also Train v. Natural Resource Defense Council*, 421 U.S. 60, 64-65 (1975) (attainment is “required . . . within a specified period of time”).

911-12. Applying that requirement, the Court struck down part of EPA’s earlier interstate rule—the 2005 Clean Air Interstate Rule—that postponed until 2015 emission reductions necessary for downwind States to meet their 2010 attainment deadlines. *Id.* at 912. As the Court reasoned, if upwind States did not “eliminate their significant contribution” before those downwind deadlines, the result would be to “forc[e] downwind areas to make greater reductions than [the Good Neighbor Provision] requires.” *Id.*

The Close-Out Rule squarely conflicts with *North Carolina* by disregarding the attainment deadlines that downwind States face. Indeed, EPA conducted no modeling or analysis relevant to the 2021 deadline.<sup>10</sup> EPA thus failed to act “consistent with” downwind States’ attainment deadlines.

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<sup>10</sup> EPA’s selection of 2023, rather than 2021, as the appropriate date for analysis appears to be a result-driven approach inconsistent with the four-step analytical process that EPA has used in Good Neighbor rulemakings since 1998. *See* 83 Fed. Reg at 65,886/1-3 & n.51. As EPA describes that process, the agency “would only proceed to higher enumerated . . . steps”—such as step 3, in which the agency evaluates the proper level of emission reductions—if it has performed the “lower enumerated . . . steps,” including the step 1 analysis in which the agency assesses which areas have not attained the ozone standard. *Id.* But EPA did not follow that process here, instead determining at step 3 that no



In defending its action, EPA contends that the Good Neighbor Provision's statutory language on timing is "ambiguous" because the statute does not set out "any timeframe for the analysis of downwind air quality or the implementation of upwind emission reductions." 83 Fed. Reg. at 65,905/3; *see also id.* at 65,892/1, 65,907/2. This Court, however, has ruled precisely to the contrary, rejecting EPA's argument that the Good Neighbor Provision "does not mandate any particular timeframe." *See North Carolina*, 531 F.3d at 912. In explaining that the Good Neighbor Provision unambiguously incorporates the Title I attainment deadlines, the Court held that the Act compels EPA to align necessary upwind emissions reductions with downwind States' attainment deadlines. *North Carolina*, 531 F.3d at 912. EPA "may not disregard the Congressional intent clearly expressed in the text." *See Sierra Club v. EPA*, 294 F.3d 155, 161 (D.C. Cir. 2002) (quotation marks and citation omitted).

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controls were available in 2020 to reduce emissions, without first performing the attainment and contribution analyses under steps 1 and 2. *See, e.g.*, 83 Fed. Reg. at 65,910/2.

EPA also attempts to justify its failure to require timely emissions reductions on grounds of “technological feasibility.” See 83 Fed. Reg. at 65,890/1-2, 65,906-07; 83 Fed. Reg. 31,915, 31,926 (July 10, 2018). But EPA is *not* arguing that it would be impossible for all upwind sources to swiftly reduce their interstate ozone contributions by 2021. Instead, EPA’s “feasibility” argument is entirely about the costs (to upwind States) of available and broadly-used control technologies that are themselves significantly cheaper than controls many downwind States already employ. See *infra* Point II.A. There is no statutory basis for EPA to ignore the Act’s attainment deadlines based on its policy preference not to burden upwind States with available controls—particularly when the consequence of this preference is that downwind States will be forced to impose additional reductions on top of the already stringent and costly controls they have imposed.

EPA’s disregard of the statutory attainment deadlines thus illegally “forc[es] downwind areas to make greater reductions than [the Good Neighbor Provision] requires.” *North Carolina*, 531 F.3d at 911-12. And it does so on feasibility grounds, in conflict with this Court’s precedents holding that “the attainment deadlines are central to the regulatory

scheme and leave no room for claims of technological or economic infeasibility.”<sup>11</sup> *Sierra Club v. EPA*, 294 F.3d at 161 (quotation marks and alterations omitted); *accord NRDC v. EPA*, 777 F.3d 456, 468 (D.C. Cir. 2014) (same). In *North Carolina*, this Court accordingly rejected “feasibility restraints” identified by EPA as a basis to excuse aligning upwind States’ Good Neighbor duties with downwind States’ attainment deadlines. 531 F.3d at 911-12. The same result is warranted here.

Nor can EPA defend its interpretation by asserting that the possibility of over-control—regulation beyond what would be necessary to allow downwind States to attain the 2008 standard—justified a decision to select 2023 as the relevant year. *See* 83 Fed. Reg. at 65,908/1. EPA conducted no modeling at all of ozone levels or upwind contributions for 2021,<sup>12</sup> and thus has no record basis to support a finding of over-control in that year.

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<sup>11</sup> The rule that attainment deadlines take precedence over claims of hardship applies with equal force to EPA as to a State. *Cf. Sierra Club v. EPA*, 294 F.3d at 161 (EPA lacks power to excuse compliance with deadlines).

<sup>12</sup> EPA’s failure to do any modeling for the next attainment deadline is a clear departure from its recent practice. Less than three years ago, EPA rejected New York’s implementation plan for failing to include

## POINT II

### **EPA ACTED ARBITRARILY AND CAPRICIOUSLY IN FINDING THAT NO COST-EFFECTIVE CONTROLS WERE AVAILABLE BEFORE 2023**

Even if EPA had discretion under the statute to disregard the upcoming 2021 deadline, EPA's reasons for doing so here do not withstand scrutiny. EPA ignored 2021 because it found that no cost-effective controls were available by that year. But, for several reasons, that conclusion was arbitrary, capricious, and "counter to the evidence before the agency." *State Farm*, 463 U.S. at 43.

#### **A. EPA's Use of the Update's Cost Threshold to Eliminate Feasible Controls Was Arbitrary and Capricious.**

In the Close-Out Rule, EPA arbitrarily declined to consider implementation of controls costing more than \$1,400 per ton of nitrogen oxides removed. In characterizing more expensive controls as not

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analysis for the next attainment deadline. 81 Fed. Reg. 58,849, 58,850/1 (Aug. 26, 2016). More broadly, in its previous regional rulemakings, EPA has always aligned its modeling approach and emission-reductions requirements with impending attainment deadlines. Even in the 2005 Clean Air Interstate Rule that this Court found unlawful in *North Carolina*, EPA included modeling for the then-upcoming 2010 attainment deadline and provided some (if not all necessary) upwind emissions reductions by that deadline. See 531 F.3d at 903.

“feasible,” 83 Fed. Reg. at 65,893/2, 65,897/3, EPA relied solely on the earlier Update, where it determined that controls available at or below a \$1,400-per-ton threshold were most cost-effective “relative to other near-term control strategies.”<sup>13</sup> 83 Fed. Reg. at 65,893/3, 65,908/3; *see also* 81 Fed. Reg. at 74,508/1-2, 74,550/1-2.

In the Update, however, EPA applied that cost-effectiveness threshold for a limited purpose—prioritizing immediate, partial controls that the Update sought to implement by 2017—and expressly disclaimed any intent to preclude consideration of more expensive controls if the Update proved insufficient. *See id.* at 74,522/3, 74,553/3. Thus, EPA declared in the Update that it did “not intend—nor does it believe it would be justified in doing so in any event—that the cost-level-based determinations in this rule impose a constraint for selection of cost levels in addressing transported pollution” in future regional rulemakings. EPA expressly anticipated that “different cost levels may be appropriate” for

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<sup>13</sup> The controls that met that standard were (a) increasing use of already-operating selective catalytic reduction equipment (at \$800/ton) and (b) restarting idled selective catalytic reduction equipment and installing state-of-the-art nitrogen oxide combustion controls (each at \$1,400/ton). 81 Fed. Reg. at 74,541.

future rulemakings if the Update proved ineffective in fully resolving upwind States' Good Neighbor obligations. *Id.* While EPA thus found in 2016 that controls available at or below the \$1,400-per-ton threshold were cost-effective “relative to other near-term control strategies,” 83 Fed. Reg. at 65,893/3, 65,897/3, EPA never made any determination—in the Update or at any other time—that other controls that EPA admits can be employed reasonably quickly are not also cost-effective.<sup>14</sup> To the contrary, EPA’s Regulatory Impact Analysis for the Update found that applying an even higher cost threshold than the \$1,400-per-ton level EPA adopted would lead to greater net benefits. *See* Cross-State Update Regulatory Impact Analysis, EPA-HQ-OAR-2015-0500-0580 (Sept. 2016), at ES-19, Table ES-7, JA-\_\_\_\_. Data since the Update confirm that

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<sup>14</sup> EPA erroneously used its cost threshold as a reason to decline to require, for example, that facilities already equipped with selective non-catalytic reduction controls more intensively operate those controls, or that facilities without those controls install them. *See* 83 Fed. Reg. at 65,894/1, 65,901. While EPA also objected to the new installation of non-catalytic controls as purportedly interfering with the installation of more cost-effective selective catalytic reduction controls in the longer term, EPA explicitly dismissed as infeasible the option of requiring installation of that latter class of controls. 83 Fed. Reg. at 65,901/3. While a comparative cost-effectiveness analysis may justify prioritizing the most cost-effective remaining controls, it cannot justify eliminating all available controls.

the measures EPA adopted in that partial solution have not, by themselves, been sufficient to achieve full compliance with the Good Neighbor Provision.

EPA's use of the Update's cost-effectiveness threshold for a purpose the Update expressly disavowed—without any further analysis of the costs and benefits of controls—was thus arbitrary and capricious. Moreover, EPA's improper use of the cost threshold from its prior, admittedly partial remedy violates EPA's "statutory obligation to avoid under-control" of upwind sources. *EME Homer City*, 572 U.S. at 523. To meet their nonattainment obligations, see 42 U.S.C. § 7511a, State Petitioners have implemented in-state controls at per-ton costs ranging from three to *more than thirty* times EPA's \$1,400 threshold. AG Comments at 19-20, JA-\_\_\_\_-\_\_\_\_ (detailing controls undertaken from \$5,000 to \$44,000/ton). EPA's refusal to impose far cheaper controls on sources in upwind States will only exacerbate this disparity, requiring downwind States to even further tighten controls on in-state sources to timely attain clean air. EPA fails to offer any explanation for how a given control can be characterized as economically infeasible under the Good

Neighbor Provision when that control is substantially *less* expensive than controls required of downwind States.

**B. EPA's Rejection of Additional, Concededly Cost-Effective Controls Available Before 2023 Was Arbitrary.**

Even accepting EPA's flawed decision to eliminate from consideration any controls exceeding the Update's cost threshold, EPA irrationally failed to require further use of selective catalytic reduction controls—a measure that EPA has found to reduce emissions at or below the Update's \$1,400-per-ton threshold. EPA could have achieved further reductions by (1) tightening upwind States' emissions budgets that, at current allotment levels, have not compelled sources to fully utilize optimized selective catalytic reduction controls; or (2) requiring sources to use those controls through measures other than regional cap-and-trade programs. EPA acted arbitrarily and capriciously in declining to require further use of controls that satisfy even its unduly restrictive \$1,400 threshold.



1. **Data show that further reductions from selective catalytic reduction controls are available.**
  - a. **EPA arbitrarily rejected data demonstrating that many sources are not achieving EPA's previously promulgated rates.**

In the Update, EPA calculated necessary emissions reductions from upwind States and used those as a basis for setting emissions budgets. But EPA did not actually require that selective catalytic reduction equipment at individual units be operated. Record data from 2017 show that many sources already equipped with catalytic reduction controls are not achieving the level of emission reductions that EPA determined they could achieve—for \$1,400 or less—by properly operating those controls. EPA thus acted arbitrarily in declining to tighten upwind States' emission budgets to compel sources to fully utilize these controls.

In the 2016 Update, EPA determined that the upwind power plants equipped with selective catalytic reduction controls that were emitting at over 0.10 lb/mmBtu could reduce their emissions to that rate. *See* 81 Fed. Reg. at 74,543/3. But in 2017, those units were still emitting at an

average rate of 0.12 lb/mmBtu<sup>15</sup>—a full twenty percent above the rate EPA determined reflects optimized controls.<sup>16</sup> 83 Fed. Reg. at 65,898/3, *see also* Maryland Comments at 9, JA-\_\_\_\_. Indeed, about half of these plants continued to emit at rates above EPA’s 0.10 lb/mmBtu benchmark. *See* AG Comments at 23, JA-\_\_\_\_; New York Comments, Detailed Comments at 1-2 & Attachment at 1-2, JA-\_\_\_\_-\_\_\_\_, \_\_\_\_-\_\_\_\_. For example, Unit 1 at the W.H. Zimmer Generating Station in Ohio emitted at an average 0.193 lb/mmBtu rate in 2017, resulting in 1,432 more tons of pollution than if it had achieved 0.10lb/mmBtu.<sup>17</sup> New York Comments, Detailed Comments at 1 & Attachment at 1, JA-\_\_\_\_, \_\_\_\_.

These data showed that, notwithstanding the Update’s emission budgets, many upwind sources still are not fully utilizing selective catalytic reduction controls. In reaching the contrary conclusion, EPA

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<sup>15</sup> The Update applied the 0.10 lb/mmBtu rate to 83 plants that had not achieved that rate in 2016 and were still operating in 2017. 83 Fed. Reg. at 65,898/1, 65,912/3.

<sup>16</sup> Preliminary data showed that these plants’ emissions rates had actually worsened in 2018, to 0.121 lb/mmBtu. 83 Fed. Reg. at 65,898 n. 94.

<sup>17</sup> Historical data indicate a far lower emissions rate is available even at this source. *See* Maryland Comments Appendix A at 6, JA-\_\_\_\_ (0.0562 lb/mmBtu rate in 2006).

relied on data showing that these sources' 2017 emissions rates were below *0.20 lb/mmBtu*. 83 Fed. Reg. at 65,898/3. But EPA failed to explain why it was reasonable to presume that sources were fully operating catalytic reduction controls when emitting at up to *double* the rate EPA identified as achievable.

**b. EPA failed to account for recent data showing that sources already equipped with cost-effective controls can achieve lower emissions rates.**

EPA also failed in the Close-Out to account for data showing that power plants already equipped with selective catalytic reduction equipment could achieve lower emissions rates than EPA had previously assumed. Updated data showed that EPA, in calculating upwind States' emission budgets, had been too conservative when it used the 0.10 lb/mmBtu rate as a "ceiling" for a plant's achievable rate. *See* 81 Fed. Reg. at 74,520/3, 74,532-33, 74,543/3-44/2. As EPA has acknowledged, the most recent data—including 2017 emissions information reflecting implementation of the Update—demonstrates that sources equipped with selective catalytic reduction controls can achieve rates significantly lower than 0.10 lb/mmBtu by properly operating those controls. 83 Fed. Reg. at 65,898/3, 65,899/1 (equipped sources achieved nationwide

average 2017 rate of 0.088 lb/mmBtu); *see also id.* at 65,898 n.94 (preliminary 2018 data showing sources in Update region achieved average rate of 0.086 lb/mmBtu). EPA thus should have reevaluated its benchmark emission rate, and tightened upwind States' emission budgets accordingly. *See Flyers Rights Educ. Fund, Inc. v. FAA*, 864 F.3d 738, 745 (D.C. Cir. 2017) (“Agency reasoning . . . must adapt as the critical facts change.”).

**2. EPA could have required further use of cost-effective controls through mandates to continuously use such controls or through imposing unit-specific short-term rates.**

EPA also took an arbitrarily narrow view of the remedies available to it under the Good Neighbor Provision. *See* 83 Fed. Reg. at 65,898. The type of regional cap-and-trade program that EPA has used in previous ozone transport rules, including the Update, is not the only avenue available to EPA to timely reduce upwind emissions. EPA provided no adequate explanation for ignoring other available means to ensure compliance with the Good Neighbor Provision.

In particular, while the Update only requires power plants to meet a *seasonal* emissions budget, EPA failed to reasonably explain why it rejected proposals that it mandate that units equipped with selective

catalytic reduction controls optimize the use of those controls *every day* during the ozone season. *See* 83 Fed. Reg. at 65,898/2; *see also* Discussion of Short-term limits, EPA-HQ-OAR-2018-0225-0396, JA-\_\_\_\_. This mandate could be effected through a rule requiring the continuous use and optimization of controls, or by imposing daily emissions-rates limits on particular sources based on historical data about rates those sources have achieved.<sup>18</sup> Either approach would provide emission reductions at cost-effective levels, as EPA has found that using selective catalytic reduction controls will reduce emissions at \$1,400 or less per ton.

One substantial benefit of this approach is that it would ensure that sources operate their controls on the days air quality is worst—i.e., the days that are used to determine downwind States’ ozone attainment status. *See* 83 Fed. Reg. at 65,882; Maryland Comments at 5-7, JA-\_\_\_\_-\_\_\_\_; OTC Comments at 5-6, JA-\_\_\_\_-\_\_\_\_. Because the Update requires only seasonal compliance, units may emit pollution in excessive amounts on individual days—including the days when ozone concentrations are highest—consistent with their allotment of allowances. Units may also

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<sup>18</sup> *See* Maryland Comments at 5-6, Appendix B at 35, 40, 42, 44-45, JA-\_\_\_\_-\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_-\_\_\_\_\_.

emit on those days by using emission allowances banked under previous cap-and-trade programs or by purchasing allowances on the market, which are currently priced at extremely low rates (well below \$1,400 per ton). AG Comments at 21-22, JA-\_\_-\_\_\_\_; see Delaware Comments, at 9, 11, JA-\_\_\_\_, \_\_\_\_ (many units are purchasing allowances rather than use cost-effective controls). Indeed regardless of sources' average *seasonal* emissions rates, on which EPA focuses,<sup>19</sup> data show that some units had excessive emission rates precisely during the high-electricity-demand periods associated with the high-ozone days most likely to determine nonattainment.<sup>20</sup> Continuous or daily controls would avoid this problem.

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<sup>19</sup> As reflected by power plants' failure to achieve even the inflated emission-rate benchmark set by EPA of 0.10 lb/mmBtu (see *supra* Point II.B.1.a), EPA is simply wrong to assert that the seasonal data supports a conclusion that units are consistently using installed selective catalytic reduction controls. See 83 Fed. Reg. at 65,898/3. Furthermore, historical data showed that specific units had previously achieved much lower rates than 0.10 lb/mmBtu, demonstrating that these sources are not fully operating their existing controls. Earthjustice Comments at 20-24, JA-\_\_-\_\_.

<sup>20</sup> For example, units at the Homer City facility emitted at a rate of 0.203 lb/mmBtu during times of high electricity demand, more than double the rate EPA determined indicated operation of selective catalytic reduction controls. Discussion of short-term limits, at 5 Table 2, JA-\_\_\_\_. While EPA asserts that most units had lower-than-average emissions rates on days when electricity demand was highest, EPA conducted no

**C. EPA Unreasonably Failed to Consider Reductions Available from Generation Shifting and from Sources Other Than Power Plants.**

State Petitioners hereby adopt and incorporate Citizen Petitioners' arguments that the Close-Out Rule arbitrarily failed to incorporate emission reductions from generation shifting and from sources other than power plants. *See* Citizen Petitioners' Opening Br. at 34-38.

**POINT III**

**EPA'S RELIANCE ON FLAWED 2023 MODELING WAS  
ARBITRARY AND CAPRICIOUS**

In determining that no downwind States will have air quality problems under the 2008 ozone standard by 2023, EPA relied on modeling conducted in 2017 that projected downwind attainment and maintenance by narrow margins. EPA's modeling is flawed in several respects, and fails to provide a reasonable basis to support EPA's conclusion.

Because an agency's use of predictive modeling can be "imperfect and subject to manipulation," the usefulness of a model hinges on how closely its assumptions reflect reality. *Sierra Club v. Costle*, 657 F.2d 298,

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comprehensive analysis focusing on units in upwind States. *Id.* at 1-2 & Tbl. 1 & 2 (only examining units in six East Coast States).

332 (D.C. Cir. 1981). An agency must “explain the assumptions and methodology” it uses in its models, and must “provide a complete analytic defense” if the model’s methodology is challenged. *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983) (quotation marks omitted). The agency must demonstrate “a rational connection between the factual inputs, modeling assumptions, modeling results and conclusions.” *Sierra Club v. Costle*, 657 F.2d at 333. EPA failed to do so here.

**A. EPA’s Modeling Erroneously Projected Attainment in 2023 Based on Unreasonable and Unenforceable Assumptions about Regulated Entities’ Voluntary Behavior.**

In projecting future downwind air quality in 2023, EPA relied on an assumption that 2023 ozone-season emissions by power plants would be *10 percent lower* than required by federally enforceable emission limitations. 83 Fed. Reg. at 65,914/1. EPA assumes that upwind sources will continue to reduce emissions beyond the reductions required by law by making voluntary choices to burn fuels other than coal, retire plants, install new controls, and increase use of existing controls.

EPA’s assumptions are not only speculative, they are refuted by existing data. In assuming that power plants will emit ten percent below



required levels in 2023, EPA first assumed that each power plant equipped with selective catalytic reduction controls would emit at or below 0.10 lb/mmBtu “beginning in 2017.” 83 Fed. Reg. at 65,912/3. But as explained above (*supra* Point II.B.1.a), and as EPA was aware when issuing the Close-Out, many plants emit well above that rate. There is no basis to assume that, in the future, power plants will exceed federal emission standards they have yet to meet, when no enforceable mechanism requires them to do so. *See Chem. Mfrs. Ass’n v. EPA*, 28 F.3d 1259, 1265-66 (D.C. Cir. 1994) (rejecting models that lack a rational relationship to known behavior or rely on “speculative factual assertion[s]”).<sup>21</sup>

EPA’s speculation about polluters’ voluntary behavior also contravenes the Clean Air Act, which requires that any implementation plan—including an EPA-promulgated federal plan—achieve necessary emission reductions through “*enforceable* emission limitations.” 42

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<sup>21</sup> At the same time it speculated over-compliance with current law, EPA unreasonably refused to account for its own proposed deregulatory actions that directly impact ozone levels and undercut its narrow predictions of attainment. 83 Fed. Reg. at 65,915/2-3; AG Comments at 24-25, JA-\_\_\_-\_\_\_; Earthjustice Comments at 31-32, JA-\_\_\_-\_\_\_.

U.S.C. § 7410(a)(2)(A) (emphasis added); *id.* § 7410(a)(2)(C) (plans must contain an enforcement program); *id.* § 7502(c)(6) (nonattainment plans must include enforceable limitations). Notably, EPA may redesignate an area as in attainment only when “permanent and enforceable reductions in emissions” are in place to assure continued attainment. 42 U.S.C. § 7407(d)(3)(E)(iii). Thus, the Act contemplates that no party may satisfy its obligation to address nonattainment by assuming that unenforceable reductions will occur. EPA’s modeling violates this principle by assuming that private actors who are currently contributing to downwind nonattainment in significant amounts will voluntarily reduce emissions.

EPA argued in the Rule that this approach is permissible because it mirrors how EPA makes initial attainment designations based on current actual air quality, irrespective of regulated entities’ mandatory legal obligations, which may affect future air quality. 83 Fed. Reg. at 65,887/1. But that analogy does not hold: in the Close-Out, EPA was not measuring current real-world conditions, as it does for purposes of determining attainment status, but projecting future air quality. In these circumstances, the Act requires plans that impose enforceable obligations on emission sources, not speculation about how those sources might

voluntarily reduce emissions. *See* 42 U.S.C. §§ 7410(a)(2)(A) & 7502(c)(6) (State must demonstrate future attainment and compliance with Good Neighbor obligations based on enforceable emission limitations).

EPA's interpretation is also counter to the agency's past practice. In 2008, for example, EPA rejected the Good Neighbor portion of a New York State plan, in part because "the submission did not demonstrate that the emission rates at which [power plants] in the state operated were a result of enforceable emission limits or other mandatory programs." 81 Fed. Reg. at 58,850/1. EPA should not be permitted to take a contrary approach here, and to apply a more lenient rule to the upwind States who have failed to submit plans consistent with their Good Neighbor obligations.

**B. EPA's Failure to Follow Its Own Modeling Guidance When It Declined to Consider Additional Data Sources Beyond the Single Set of Projections It Had Modeled Was Arbitrary and Capricious.**

Recognizing the uncertainty inherent in future modeling, EPA's internal guidance calls for modeling results to be used in concert with observed air quality data and supplemented with other available models. *See Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze* (Dec. 2014), at 180-

83, JA-\_\_. The agency is instructed to apply a “weight of evidence” assessment, and to make conservative predictions based on the array of evidence before it about whether each area is likely to achieve timely attainment. *Id.* at 179-80, JA-\_\_-\_\_. In the Close-Out Rule, however, EPA arbitrarily defied this guidance. The agency irrationally relied on a single model’s projections of 2023 downwind attainment—by the narrowest of margins (0.1 ppb)—despite measured data and modeling that, at a minimum, created significant uncertainty about that result.

EPA had substantial reason to consider additional data beyond its own models, given that actual 2017 ozone concentrations were in many cases significantly higher than EPA’s model projected. *See* Connecticut Comments at 4, Tbl. 2, JA-\_\_. For example, EPA predicted that the Westport, Connecticut, monitor would register 2017 concentrations of 76.5 ppb, but the actual measured value was over 6 ppb higher, at 83 ppb. *Id.*; *see also* Earthjustice Comments at 6, Tbl. 2, JA-\_\_ (EPA underestimated actual concentrations at nine monitors).

To be sure, EPA was still entitled to rely largely on its own modeling. But what EPA could not do was simply disregard additional modeling data in the record. Commenters submitted to EPA the results

of another EPA-approved modeling platform—the Community Multiscale Air Quality Modeling System—whose outputs more closely matched real-world measurements than EPA’s modeling. *See* OTC Comments at 15, Tbl. 2, JA-\_\_ (correctly predicting measurements at Westport). That model, unlike EPA’s, projected continued nonattainment in the New York Metro area through 2023, with two monitors in the area remaining significantly above the 75 ppb standard. *Id.* at 14, Tbl. 1, JA-\_\_ (projecting Westport, Connecticut at 81.1 ppb and Susan Wagner, New York at 76.9 ppb).

Had EPA given any weight to these results, EPA could not have reached the same conclusion about full attainment in 2023 given the tiny 0.1 ppb margin by which its own modeling projects attainment in the largest metropolitan area. EPA’s decision to disregard more accurate modeling was arbitrary, and contrary to the guidance instructing EPA to weigh all available evidence and to take a conservative approach when projecting possible attainment.

EPA’s technical arguments fail justify its choice. EPA states that one metric in its model—maximum anticipated concentrations at monitors—came closer to reflecting measured data than its standard

metric for assessing nonattainment (the average “design value”). 83 Fed. Reg. at 65,918/2. But even EPA’s maximum projections underestimated ozone levels at critical monitors in ways that the modeling EPA disregarded did not. Connecticut Comments at 4, Tbl. 2, JA-\_\_ (maximum projection underestimated Westport concentrations by 3 ppb); Earthjustice Comments at 6, Tbl. 2, JA-\_\_\_ (maximum projection underestimated concentrations at eight monitors). While EPA contended that the two models were consistent in certain respects, 83 Fed. Reg. at 65,918, that is not a valid reason to discard the other model’s differing projections. *Sierra Club v. Costle*, 657 F.2d at 334 (agency must account for model limitations).

## CONCLUSION

For the reasons above, EPA's Close-Out Rule should be vacated and the matter remanded to EPA to promulgate a replacement in time for the 2020 ozone season.

Dated: April 19, 2019

Respectfully submitted,

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The undersigned attorney hereby certifies:

1. This document complies with the type-volume limitations of Fed. R. App. P. 32(a)(7)(B)(i) and this Court's order dated April 1, 2019 granting expedition and setting a brief schedule (Doc. No. 1780502). According to the word processing system used in this office, this document, exclusive of the sections excluded by Fed. R. App. P. 32(f) and Circuit Rule 32(e)(1), contains 9,108 words and that when combined with the word count of the brief of the other petitioners, the total does not exceed 18,000 words.

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**CERTIFICATE OF SERVICE**

I hereby certify that on this 19th day of April, 2019, the foregoing Opening Proof Brief for State Petitioners was electronically filed with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit through the Court's CM/ECF system, which effected service upon counsel of record through the Court's system.

Dated: April 19, 2019

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