NOT YET SCHEDULED FOR ORAL ARGUMENT

No. 19-1019
(and consolidated cases)

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF NEW YORK, ET AL.,
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ET AL.,
Respondents.

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

RESPONDENT EPA'S INITIAL BRIEF

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June 14, 2019

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to D.C. Circuit Rule 28(a)(1), the undersigned counsel certifies as follows:

A. Parties and Amici.

All parties and intervenors appearing in this Court are listed in the Briefs for State Petitioners (Doc. 1783918) ("State Br."), and Citizen Petitioners (Doc. 1783919) ("Citizen Br."), with the exception of the Institute for Policy Integrity at New York University School of Law, which has joined the case as amicus curiae in support of Petitioners.

B. Rulings Under Review.

The agency action under review is a final rule 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.

There are no related cases. However, a pending matter involving issues that are also pertinent to this case, *State of Wisconsin v. EPA* (D.C. Cir. No. 16-1406, and consolidated cases), was argued before this Court on October 3, 2018.

/s/ Chloe H. Kolman
CHLOE H. KOLMAN

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GLOSSARY

Close-Out Rule	Determination Regarding Good Neighbor Obligations for the 2008 Ozone National Ambient Air Quality Standard, 83 Fed. Reg. 65,878 (Dec. 21, 2018)
CSAPR	Cross-State Air Pollution Rule, 76 Fed. Reg. 48,208 (Aug. 8, 2011)
CSAPR Update	Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, 81 Fed. Reg. 74,504 (Oct. 26, 2016)
EPA	United States Environmental Protection Agency
Good Neighbor Provision	42 U.S.C. § 7410(a)(2)(D)(i)(I)
NAAQS	National Ambient Air Quality Standard
NO_X	Nitrogen Oxides
ppb	Parts Per Billion
lbs/mmBtu	Pounds per million British thermal units

INTRODUCTION

This is the latest in a series of cases challenging EPA's implementation of the Clean Air Act's Good Neighbor Provision. Under this provision, upwind states are required to issue implementation plans to eliminate emissions that "contribute significantly" to downwind air quality problems or "interfere with maintenance" of clean air. After certain states failed to submit adequate plans to address their impacts on downwind states' attainment and maintenance of a 2008 ozone standard, EPA assumed that obligation. But EPA's action was delayed by pending litigation over the Cross-State Air Pollution Rule ("CSAPR"), including challenges to the framework EPA uses to assess upwind obligations. By the time EPA had sufficient legal certainty to promulgate a rule, the first date for downwind areas to attain the standard in "Marginal" nonattainment areas had already passed, and the next attainment date, for "Moderate" nonattainment areas, was rapidly approaching.

To make progress toward improving downwind air quality despite the delay, EPA proceeded incrementally. First, EPA promulgated the 2016 "CSAPR Update," which imposed only those control strategies available before the next attainment date. In this first step, EPA explained that it would undertake an additional rulemaking to assess whether further upwind reductions were required. This case concerns that additional rulemaking, known as the CSAPR "Close-Out Rule." In the Close-Out Rule, EPA did what it said. It assessed the need for further upwind reductions under the Good Neighbor Provision. EPA determined that by 2023 – the date when

remaining controls could be feasibly imposed – all downwind areas will attain the 2008 ozone standard. Accordingly, EPA concluded that reductions from the CSAPR Update had, in fact, been sufficient to fully resolve upwind states' Good Neighbor obligations. Thus no additional emission controls were required in upwind states. EPA's conclusion was reasonable and should be upheld.

STATEMENT OF JURISDICTION

The Court has jurisdiction under 42 U.S.C. § 7607(b)(1).

STATEMENT OF THE ISSUES

1. Did EPA reasonably interpret the Good Neighbor Provision to permit consideration of both the phased dates by which downwind areas are expected to reach attainment and the timeframes by which meaningful controls could be implemented?
2. Did EPA reasonably determine that fully addressing upwind states' Good Neighbor obligations required structuring its analysis around a 2023 analytic year, where that year presented the first opportunity for imposing meaningful controls before an upcoming attainment date?
3. Did EPA take appropriate account of future emissions and of alternative modeling results in finding that no downwind areas would remain in nonattainment for the 2008 ozone standard by 2023?

PERTINENT STATUTES AND REGULATIONS

All pertinent statutes and regulations are reproduced in Petitioners' addenda.

STATEMENT OF THE CASE

I. Statutory background

The Clean Air Act, 42 U.S.C. §§ 7401-7671q (the "Act"), directs EPA to set National Ambient Air Quality Standards ("NAAQS") for widely-occurring pollutants, including ozone, that establish permissible concentrations of those pollutants in the ambient air. *Id.* § 7409(b)(1). Once EPA promulgates a NAAQS, EPA must designate areas as being in "attainment" or "nonattainment" of the NAAQS, or "unclassifiable." *Id.* § 7407(d). For ozone, nonattainment is further split into five classifications based on the severity of the violation – Marginal, Moderate, Serious, Severe, or Extreme – each with progressively more time to attain. *Id.* § 7511. If an area fails to attain the NAAQS by the attainment date associated with its classification, it is "bumped up" to the next classification. *Id.*

All states, whether or not they have nonattainment areas, must adopt state plans to implement, maintain, and enforce the NAAQS; states with nonattainment areas must also develop attainment plans to bring these areas into compliance. *Id.* §§ 7410(a), 7502, 7511-7511a. If states fail to adopt adequate implementation plans, EPA must adopt a federal implementation plan. *Id.* § 7410(c)(1).

However, certain states may have problems attaining and maintaining the NAAQS due, in part, to emissions transported from other states. This is particularly true for ozone, which is formed by chemical reactions between nitrogen oxides ("NO_X") and volatile organic compounds in the atmosphere in the presence of

sunlight. Accordingly, under the Act's "Good Neighbor Provision," state implementation plans must also prohibit any in-state emissions that will "contribute significantly" to downwind nonattainment "or interfere with maintenance" in downwind areas. *Id.* § 7410(a)(2)(D)(i)(I). The Good Neighbor Provision does not specify a timeframe for implementing upwind reductions. It does require that they be prohibited "consistent with the provisions of this subchapter," referring to Title I of the Act governing, *inter alia*, the NAAQS program as a whole. *Id.* § 7410(a)(2)(D)(i).

II. Regulatory background

A. Good Neighbor implementation under earlier ozone NAAQS

EPA has addressed the Good Neighbor Provision's requirements for various updates of the ozone NAAQS in a series of rulemakings addressing NO_X (a significant contributor to downwind ozone) since 1998. *See* 63 Fed. Reg. 57,356 (Oct. 27, 1998) (the "NO_X SIP Call"); 70 Fed. Reg. 25,162 (May 12, 2005) (the "Clean Air Interstate Rule"); 76 Fed. Reg. 48,208 (Aug. 8, 2011) (CSAPR). In each rule, EPA has either allowed or required use of an inter-state trading program to reduce NO_X emissions in upwind states. Each rule was also challenged in this Court, and in one instance an appeal was taken to the Supreme Court. The resulting precedents have shaped the four-step framework EPA now uses to address upwind states' obligations regarding ozone transport.

Under its framework, EPA first identifies downwind "receptors" (air quality monitoring sites) that will not attain or will struggle to maintain the NAAQS based on

air quality modeling projections ("Step One"). 83 Fed. Reg. at 65,886. This requires that EPA first determine the "analytic year" in which it will model and assess air quality. EPA selects the analytic year to match the year when emission reductions will be implemented, considering downwind attainment dates and the feasibility of implementing appropriate controls. *Id.* at 65,889; *see North Carolina v. EPA*, 531 F.3d 896, 913-14 (D.C. Cir. 2008) (upholding EPA's use of a future analytic year).

At Step Two, EPA determines which upwind states "contribute" to each identified downwind air quality problem.[1] A state "contributes" if its share of downwind pollution at a receptor in the analytic year is at or above a chosen "contribution threshold" (in the CSAPR Update, EPA used a threshold of one percent of the 2008 standard, or 0.75 parts per billion). 81 Fed. Reg. 74,504, 74,537 (Oct. 26, 2016).

EPA then evaluates, at Step Three, which emissions contributing to downwind air quality problems are "significant" and must be prohibited. EPA considers the total tons of upwind NO_X that could be eliminated by applying controls available at different cost thresholds, alongside the improvement in downwind air quality that would result from implementing those controls at certain sources in the analytic year. 83 Fed. Reg. at 65,886. It then selects the cost-per-ton control level that maximizes

[1] This test is applied both to significant contributions to nonattainment and interference with maintenance of the ozone standard; in this brief, we use "significant contribution" to describe both "prongs" of the Good Neighbor obligation.

cost-effectiveness given these factors and determines the emission reductions that each upwind state can achieve at that control level, producing a state emission budget for the covered sources. *Id.* For states whose emissions cannot be reduced at that control level, those emissions are not considered "significant."

Finally, at Step Four, EPA implements the emission budgets, typically through a multi-state allowance trading program that allocates states' budgets among in-state sources through allowances that can be bought, sold, and banked. *Id.* The Supreme Court upheld this approach to implementing the Good Neighbor Provision as consistent with the statute and workable, efficient, and equitable. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1607 (2014).

This Court's and the Supreme Court's consideration of prior ozone transport rules has also established important guardrails for EPA's implementation of the Good Neighbor Provision. In particular: (1) that the requirement that states and EPA achieve Good Neighbor emission reductions "consistent with the provisions of [Title I of the Clean Air Act]" includes giving consideration to attainment dates for downwind areas, *North Carolina*, 531 F.3d at 911-12; (2) that EPA may reasonably consider the cost-effectiveness of controls to determine which upwind contributions are "significant," *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000) (upholding the NO_X SIP Call's uniform cost threshold); *EME Homer*, 134 S. Ct. at 1603-10 (upholding CSAPR's cost-threshold approach); and (3) that EPA does not have authority to "over-control" any upwind state's emissions relative to downwind air quality by

eliminating more pollution than necessary either to bring the upwind state's contribution at every receptor below the contribution threshold or to bring into attainment all of the downwind receptors to which that upwind state contributes, *EME Homer*, 134 S. Ct. at 1608; *see EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118, 129-38 (D.C. Cir. 2015) ("*EME Homer II*") (considering "over-control" on remand).

B. Good Neighbor implementation under the 2008 ozone NAAQS

EPA lowered the ozone NAAQS (i.e., making it more stringent) from 80 to 75 parts per billion ("ppb") in 2008, triggering implementation plan requirements. However, challenges to EPA's interstate transport framework were not resolved until 2015. *See EME Homer II*, 795 F.3d at 118. EPA's promulgation of a rule to address Good Neighbor obligations under the 2008 standard was thus delayed until 2016. This was after the 2015 Marginal attainment date had already passed and with the 2018 Moderate attainment date imminent. Given the compressed timing, EPA divided its implementation of Good Neighbor obligations into two rulemakings: the 2016 CSAPR Update and the 2018 Close-Out Rule challenged here.

1. The CSAPR Update

The CSAPR Update, 81 Fed. Reg. 74,504 ("CSAPR Update" or "Update"), addressed the emissions of 22 eastern states that contribute significantly to nonattainment or interfere with maintenance of the 2008 ozone NAAQS. However, EPA was mindful that the CSAPR Update would be finalized shortly before the 2017

ozone season (May through September) – the last period for measuring compliance with the 2018 Moderate attainment date. Accordingly, EPA structured the rule around those NO_X controls that could be implemented before the 2017 ozone season. *Id.* at 74,521-22. EPA acknowledged that fully addressing Good Neighbor obligations might require additional emission reductions and committed to considering that question in a second rulemaking. *Id.* at 74,522. But EPA determined that bifurcating its consideration of upwind emissions under the 2008 ozone NAAQS reasonably balanced the need to expeditiously reduce upwind emissions with the feasible implementation of NO_X control strategies, some of which could not be applied by 2017. *Id.* at 74,523.

In the Update, EPA determined that three types of control strategies could not be implemented by 2017: new selective catalytic reduction controls ("catalytic controls") and new selective non-catalytic reduction controls ("non-catalytic controls") at power plants, and controls on units other than power plants ("non-power plant controls").[2] EPA also determined that four types of control strategies could be feasibly implemented at power plants by 2017: installing new low-NO_X burners, optimizing existing catalytic controls, optimizing existing non-catalytic controls, and shifting generation from higher- to lower-emitting sources. *Id.* at

[2] In the record, catalytic controls and non-catalytic controls are referred to as "SCR" and "SNCR" controls respectively; non-power plant controls are referred to as "non-EGU" controls.

74,540-42. EPA's Step Three analysis concluded that optimizing existing non-catalytic controls (at $3,400 per marginal ton of NO_X reduced) would achieve only minimal reductions and air quality improvement, and so was insufficiently cost-effective for addressing Good Neighbor obligations under the 2008 ozone NAAQS. *Id.* at 74,550. Instead, EPA set emission budgets for power plants in its cap-and-trade program based on the control level associated with optimizing existing catalytic controls ($1,400 per ton) – modeling the amount of emission reduction that could be accomplished at that level of control stringency, including through limited generation shifting, starting in 2017. *Id.*

A number of industry, state, and environmental petitioners challenged the CSAPR Update in *Wisconsin v. EPA*, D.C. Cir. No. 16-1406 (and consolidated cases), with some alleging that the Update was too stringent and others that it was not stringent enough. Certain petitioners, including some Petitioners in this case, also challenged EPA's authority to begin with a near-term, "partial" resolution of Good Neighbor obligations. *See id.* at ECF No. 1725811. Oral argument was heard in *Wisconsin* on October 3, 2018, and the case is still pending.

Meanwhile, the CSAPR Update has proven highly effective at reducing NO_X emissions. In 2017, the Update's first year, ozone season NO_X emissions from covered units dropped more than 77,500 tons, or 21 percent. Altogether, the upwind states addressed by the Update emitted 294,394 tons of NO_X – well below the cap of

316,464 tons. 83 Fed. Reg. at 65,893. Preliminary data from 2018 confirms these results. *Id.* at 65,893 n.70.

2. The CSAPR "Close-Out Rule"

Pursuant to its commitment in the CSAPR Update, in December 2018 EPA issued the Rule challenged here – the CSAPR "Close-Out Rule." This addressed those upwind Good Neighbor obligations that remained, *if any*, following implementation of the Update.[3] "Determination Regarding Good Neighbor Obligations for the 2008 Ozone National Ambient Air Quality Standard," 83 Fed. Reg. 65,878 (Dec. 21, 2018) (the "Close-Out Rule" or "Rule"). EPA's analysis proceeded under its four-step transport framework. But to model air quality at Step One, EPA first had to select the appropriate analytic year for assessing air quality and seeking reductions. The 2017 analytic year and 2018 attainment date relied upon in the CSAPR Update had already passed. The next downwind attainment dates were 2021 (for Serious nonattainment areas) and 2027 (for Severe nonattainment areas), so EPA considered whether potential Good Neighbor obligations could be addressed in time for the 2021 date (that is, by the 2020 ozone season), or only for the 2027 date. *See id.* at 65,892.

[3] EPA finalized the Rule by December 6, 2018, consistent with a district court order concerning Good Neighbor obligations for five states. *See New York v. Pruitt*, No. 18-cv-406 (S.D.N.Y), ECF No. 34.

Because the CSAPR Update had assessed all available short-term control strategies, EPA anticipated that its consideration in the Close-Out Rule would focus on the three categories of long-term controls that it had been unable to assess in the first rulemaking: new catalytic and non-catalytic controls for power plants, and controls on non-power plants. *See id.* at 65,893. But EPA further assessed all NO_X control strategies to see whether they could provide a basis for structuring the Rule around a 2020 analytic year. It determined they could not. *Id.* at 65,892-910. EPA concluded that power plants' existing catalytic controls were already fully optimized under the CSAPR Update. *Id.* at 65,893. EPA reaffirmed its 2016 conclusion that optimizing existing non-catalytic controls was insufficiently cost-effective and that the emissions that could be eliminated therefore did not constitute "significant contribution." *Id.* at 65,893-94. And EPA determined that generation shifting did not constitute an independent basis for the Rule absent other control options. *See id.* at 65,894.

Although the remaining control strategies presented new opportunities for significant emission reductions, EPA found they could not be installed by the 2020 ozone season. New catalytic controls represent by far the most efficacious control strategy available for power plants. But, fleet-wide, they would take 48 months to install. *See id.* at 65,895. New non-catalytic controls were unlikely to be implemented in time for the 2020 ozone season and, in any case, could be counterproductive by precluding installation of better catalytic controls. *See id.* at 65,901. Finally, reductions

from non-power plants likely could not be implemented by 2020 and could take four years or more. *See id.* at 65,903.

EPA thus determined that controls could not be implemented to resolve Good Neighbor obligations before the 2021 attainment date. But EPA also concluded that controls could be installed well before the 2027 attainment date, with expeditious installation occurring by 2023. *Id.* at 65,904-05. Accordingly, EPA structured the Rule around a 2023 analytic year and began its four-step consideration of Good Neighbor obligations.

As part of the multi-month process of modeling air quality under Step One, EPA developed comprehensive emissions inventories for the 2023 analytic year from all sources of NO_X, including natural, mobile, international, and industrial sources. *Id.* at 65,912. For power plants, EPA used 2016 emissions data and then made limited adjustments to reflect announced fleet changes (i.e., retirements, retrofits, conversions, upgrades, and new units) and "on-the-books" state and federal emission limits, including the CSAPR Update. *Id.* at 65,912-13. Based on these emission inventories, EPA's longstanding model identified how emissions from each source would interact in the atmosphere, predicting both the locations and concentrations of downwind ozone in 2023. *Id.* at 65,911.

Once completed, the Step One modeling showed that *all* downwind areas in the CSAPR Update region would be in attainment by 2023, when controls would otherwise be imposed. *Id.* at 65,917. The Close-Out Rule thus concluded that the

NO_X controls imposed under EPA's first rulemaking, the CSAPR Update, had been sufficient to fully resolve upwind Good Neighbor obligations for the 2008 ozone NAAQS. *Id.* at 65,921.

III. Procedural background

Fourteen parties filed three petitions for review challenging the Close-Out Rule. On March 4, 2019, Petitioners jointly filed a motion to expedite consideration of their petitions, which was granted on April 1, 2019. ECF No. 1780502.

SUMMARY OF ARGUMENT

In the Close-Out Rule, EPA fulfilled the commitment it made in the CSAPR Update and completed its consideration of upwind Good Neighbor obligations under the 2008 ozone NAAQS. Considering the record and applying its longstanding ozone transport framework, EPA reasonably concluded that no further upwind emission reductions are necessary.

First, EPA reasonably interpreted the Good Neighbor Provision. Petitioners contend that the Provision compels EPA to impose emission controls by the next attainment date. But Petitioners' reading is at odds with the Act's text and goals. In circumstances like these, their reading would foreclose consideration of superior emission controls with more extended installation timeframes. By contrast, EPA's reading harmonized the ambiguous text, taking into account both downwind attainment dates and feasible upwind controls to ensure that upwind states' efforts to

reduce their contributions to ozone pollution could be both expeditious and efficacious.

Second, EPA reasonably concluded that considering air quality and imposing controls before the 2021 attainment date – on the basis of technologies already applied (or rejected) in the CSAPR Update – could not yield meaningful additional emission reductions. Accordingly, EPA structured the Rule around a 2023 analytic year. This represents the most expeditious timeframe for installing meaningful emission controls before the 2027 attainment date. Contrary to Petitioners' contentions, this decision was not based on cost or an underestimate of available emission reductions. EPA's determinations were technology-specific, unrelated to the CSAPR Update's cost threshold, and supported by the record. A 2023 analytic year also appropriately advanced protection of public health and the environment. It ensured that EPA's transport framework could impose, as necessary, the most efficacious emission controls available in upwind states.

Third, EPA's projections of downwind air quality in 2023 were sound. Petitioners' claim that EPA's projections were inaccurate because they took account of "voluntary" emission reductions and used an unreasonably low emission rate for certain units is unavailing. EPA appropriately accounted for known fleet changes, reasonably applied an emission rate that represented compliance with the CSAPR Update, and otherwise followed its air-quality modeling guidance. Contrary to

Petitioners' claims, EPA also thoroughly weighed alternative modeling before reaching its conclusion.

Accordingly, EPA's conclusion that downwind states will uniformly have ozone levels that meet the 2008 standard in 2023, when upwind emission reductions might otherwise be imposed, is the product of reasoned decision-making. It should be upheld.

STANDARD OF REVIEW

Under the applicable standard of review, 42 U.S.C. § 7607(d)(9), the court asks whether the challenged action was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." This standard of review "is a narrow one," and the court is not "to substitute its judgment for that of the agency." *Citizens to Pres. Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971). The pertinent question is "whether the [agency's] decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (citation omitted). Particular deference is given to an agency with regard to technical matters within its area of expertise. *Balt. Gas & Elec. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 103 (1983); *West Virginia v. EPA*, 362 F.3d 861, 867-68 (D.C. Cir. 2004).

Courts apply the two-step framework announced in *Chevron* v. *Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-45 (1984), when reviewing an agency's interpretation of a statute it administers. Under step one, if Congress has "directly

spoken to the precise question at issue," that intent must be given effect. *Id.* at 842-43. However, under step two, "if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." *Id.* at 843; *see also EME Homer*, 134 S. Ct. at 1603-04.

ARGUMENT

I. EPA reasonably interpreted the statute to set an analytic year under the Good Neighbor Provision.

In completing its analysis of Good Neighbor obligations under the 2008 ozone NAAQS, EPA reasonably interpreted the statute's ambiguity to allow selection of an analytic year that considered both impending attainment dates and the feasibility of controls necessary to reduce upwind emissions. This approach was consistent with both the statutory text and with this Court's precedents. These inform, but do not dictate, the appropriate date for achieving – and thus assessing – upwind reductions.

A. The Good Neighbor Provision is ambiguous.

EPA's selection of the analytic year for the Close-Out Rule depended first on interpreting the ambiguous language of the Good Neighbor Provision. This language does not set a deadline for upwind emission reductions. Petitioners essentially contend that because the relevant subchapter – Clean Air Act Title I – includes a table of dates for downwind areas to reach attainment depending on their classification, the Act unambiguously requires EPA to eliminate upwind contributions to downwind air

quality problems before the next upcoming date. State. Br. 24-29; Citizen Br. 20-22. But Petitioners over-read the statutory language and misread this Court's opinion in *North Carolina*.

As Petitioners admit, the Good Neighbor Provision itself does not specify a timeframe on which upwind emissions "significantly contributing" to downwind air quality problems must be assessed or eliminated. *See* 42 U.S.C. § 7410(a)(2)(D)(i). The Provision is facially ambiguous on this point. 83 Fed. Reg. at 65,905. The instruction that Good Neighbor reductions be prohibited "consistent with" the provisions of Title I does not resolve this ambiguity. First, the remainder of Title I, like the Good Neighbor Provision, does not provide deadlines for states' elimination of their significant contributions. Instead, Petitioners point to dates applying to *downwind* areas in Part D of the Title, claiming that because the Good Neighbor provision (in Part A) is meant to be applied "consistent with" that provision, it follows that upwind states are unambiguously bound in all circumstances to address their "significant contribution" by those same dates. State Br. 25; Citizen Br. 20-21; *see* 42 U.S.C. §§ 7502, 7511(a)-(b). But Sections 7502 and 7511 make no reference at all to upwind states or their obligations – so Petitioners' reading is at most one interpretation of how Title I's provisions should be harmonized, not a necessary feature of the plain language.

As EPA explained in the Close-Out Rule, courts have "routinely held" that "consistent with" is itself an ambiguous phrase that invites agency interpretation. 83

Fed. Reg. at 65,905-06. In *Environmental Defense Fund, Inc. v. EPA*, this Court interpreted a Clean Air Act provision disallowing certain transportation programs except where they provided for "timely implementation" of transportation control measures "consistent with schedules" in states' implementation plans. 82 F.3d 451, 457 (D.C. Cir. 1996) ("*EDF*"). The petitioners claimed this language required implementation of the measures "in strict compliance with the [implementation plan] schedules," but this Court disagreed, explaining that the phrase "consistent with" is "flexible statutory language" that "does not require exact correspondence . . . but only congruity or compatibility," and that entitled EPA to deference. *Id.*; *see also Nat. Res. Def. Council, Inc. v. Daley,* 209 F.3d 747, 754 (D.C. Cir. 2000) (requirement that fishing quotas be "consistent with" a fishery management plan was ambiguous); *NL Indus. Inc. v. Kaplan,* 792 F.2d 896, 898–99 (9th Cir. 1986) (acting "consistent with the national contingency plan" "does not necessitate *strict compliance* with [the plan's] provisions"). Under *EDF*, how to implement Good Neighbor reductions "consistent with" the broad sweep of Title I is left to EPA's reasoned discretion, provided its approach ensures "compatibility." *See Chevron*, 467 U.S. at 843.

Petitioners argue that the inherent ambiguity of an instruction to act "consistent with" other provisions is made unambiguous here by the fact that EPA must act consistent with the attainment dates. Citizen Br. 21. But the statutory language in *EDF* also required consistency with specific dates. *See EDF*, 82 F.3d at 457. And in any case, Petitioners misread the Good Neighbor Provision. EPA is *not*

instructed to act consistent with "the dates in Section 7511," but rather with Title I generally. 42 U.S.C. § 7410(a)(2)(D)(i). That includes the attainment dates, but it also includes numerous provisions addressing NAAQS implementation that allow for modification and adjustment of those dates. As EPA explained, "[t]he general timeframes provided for attainment in ozone nonattainment areas in the section [7511(a)(1)] table may be (and often are) modified pursuant to other provisions in section [7512], considering factors such as measured ozone concentrations and the feasibility of implementing additional emission reductions." 83 Fed. Reg. at 65,906.[4]

For example, Section 7511(a)(5) would allow EPA to extend the six-year timeframe for attainment of the 2008 ozone NAAQS in moderate areas until 2020. 42 U.S.C. § 7511(a)(5). Section 7511(b)(2) establishes a process for resetting attainment dates in any downwind area where feasible controls have been insufficient to attain the NAAQS, through a "bump up" to the next classification and attainment date. Under this provision, an area might not be required to attain the NAAQS until 2032, with even that date subject to further extensions of up to two years under Section 7511(a)(5). *Id.* § 7511(b)(2); *see* 83 Fed. Reg. at 65,906.

[4] Petitioners also assert that EPA's interpretation is impermissible because it "collaps[es]" requirements that states attain as "expeditiously as practicable" and "not later than" the attainment dates. Citizen Br. 22. But this language from Section 7511(a)(1) again pertains only to downwind attainment dates. EPA's analysis is thus the same for both this language and the dates themselves.

Petitioners' insistence that emission reductions be implemented by the next attainment date also ignores that the Good Neighbor Provision is not concerned solely with eliminating emissions that significantly contribute to nonattainment, but also emissions "interfer[ing] with maintenance" of the NAAQS. 42 U.S.C. § 7410(a)(2)(D)(i)(I). As EPA pointed out, "there is no deadline for maintenance of the standard comparable to an attainment date for downwind [nonattainment] areas." 83 Fed. Reg. at 65,906. The statute does not unambiguously demand that upwind states contributing only to maintenance receptors address their emissions on a schedule that does not apply to those areas. *Id.*

Petitioners do not attempt to defend these flaws in their argument. Instead, they assert that the Court's opinion in *North Carolina* "squarely conflicts" with EPA's action here. State Br. 26; *see* Citizen Br. 20. In *North Carolina*, the Court faulted EPA for failing to give *any* consideration to an upcoming 2010 attainment date when setting a 2015 "Phase Two" compliance date for upwind states' Good Neighbor obligations. 531 F.3d at 911-12. But in that case, EPA's compliance deadline for upwind emissions was "based solely on reasons of feasibility," *id.* at 911, and "did not make any effort to harmonize [that deadline] with the attainment deadlines." *Id.* at 912. *North Carolina* did not hold, however, that EPA was required to set compliance deadlines under the Good Neighbor Provision that matched those in Section 7511 or to ignore feasibility concerns. To the contrary, the Court acknowledged that EPA might be able to justify a decision to set upwind compliance in 2015 notwithstanding

the 2010 attainment date. *Id.* at 930 ("[EPA] must decide what date, whether 2015 or earlier, is as expeditious as practicable for states to eliminate their significant contributions to downwind nonattainment."). As explained below, EPA reasonably interprets *North Carolina* to allow EPA, when applying the Good Neighbor Provision, to consider feasibility, provided it also gives due consideration to the attainment dates and explains how efforts will address Good Neighbor obligations as expeditiously as practicable.

B. EPA's interpretation of the Good Neighbor Provision reasonably harmonizes the statutory language and purpose.

Consistent with *North Carolina* and the Good Neighbor Provision's ambiguity, EPA's interpretation in the Close-Out Rule reasonably "harmonize[s]" the language and goals of the statute with respect to both upwind and downwind states. Under EPA's interpretation, the Agency "require[s] good neighbor emission reductions as expeditiously as practicable to benefit downwind areas, taking into account their attainment dates as well as how expeditiously upwind controls could feasibly be implemented." 83 Fed. Reg. at 65,907. Under this interpretation, "where the EPA [is] able to identify substantial upwind emission reductions available by the upcoming attainment date, as in the CSAPR Update, the EPA implement[s] those reductions." *Id.* But where no such reductions are available before the next attainment date, "it [is] appropriate to analyze air quality in the future year that represents the most

expeditious timeframe for implementation of such controls after that date, but before the following attainment date." *Id.*

Considering feasibility in this manner ensures that EPA's application of the Good Neighbor Provision is not impeded where controls are not immediately available. It also accords with the Act's use of feasibility considerations to determine *downwind* responsibilities. Part D of Title I, which defines the control strategies downwind states must implement by the attainment dates, "incorporat[es] considerations of technological feasibility at each stage." *Id.* at 65,906. For example, Section 7502 requires state attainment plans to implement "all *reasonably available* control measures as expeditiously as practicable" to attain the NAAQS. 42 U.S.C. § 7502(c)(1) (emphasis added). Likewise, Section 7511a exempts states from certain requirements when their implementation plans include "all measures that can *feasibly* be implemented in the area, *in light of technological achievability*," *id.* § 7511a(b)(1)(A)(ii)(III), (c)(2)(B)(ii) (emphasis added); *see id.* § 7502(c)(2); *see also Whitman* v. *Am. Trucking Ass'ns, Inc.,* 531 U.S. 457, 493-94 (2001) (Breyer, J., concurring) (considerations of costs and technological feasibility may affect attainment dates imposed on states).

Considering feasibility also accords with the Supreme Court's and this Court's recent rulings rejecting "over-control" of upwind emissions. *EME Homer*, 134 S. Ct. at 1608; *EME Homer II*, 795 F.3d at 126; 83 Fed. Reg. at 65,889, 65,907. Over-control occurs when a rule imposes emissions reductions that are more than necessary for

downwind areas to attain and maintain the NAAQS. *Id.*; *see infra* pp. 32-33. Considering air quality in the same year that emission reductions can feasibly be implemented ensures that those reductions will be necessary to resolve air quality problems when they actually come into effect. 83 Fed. Reg. at 65,907-09. By contrast, if EPA selected an analytic year *before* an attainment date – notwithstanding that emission controls were only feasible some years *after* the attainment date – EPA's air quality modeling in the analytic year would provide little, if any, basis for concluding that air quality problems would still exist years later when reductions were finally implemented. *Id.* This mismatch could trigger the Court's concern with over-control and render those reductions unlawful. *Id.* at 65,908; *see EME Homer II,* 795 F.3d at 130 (remanding upwind reduction requirements where EPA had information indicating there would be no air quality problems when those reductions could be implemented).[5]

The only alternative to avoid over-control concerns, absent considering feasibility, is reading the statute to restrict EPA's consideration of Good Neighbor reductions to those that can be accomplished by the next attainment date. *See* 83 Fed. Reg. at 65,909. This would result in rules that either under-control upwind emissions

[5] Petitioners do not argue that over-control is an impermissible concern as a matter of statutory interpretation. Petitioners challenge EPA's reliance on over-control only on the fact-specific basis that EPA lacked a record indicating over-control here. State Br. 29; *see infra* Section II.A.

because longer-term control strategies cannot be considered, or that impose those longer-term controls immediately notwithstanding that EPA knows sources cannot reasonably comply – "an obligation not imposed on downwind nonattainment areas." *Id.* at 65,907. Given these possible consequences, EPA reasonably concluded that it could consider feasibility when determining a future analytic year for evaluation of upwind controls that was "consistent with" the Act. *See id.* at 65,889-90.

Moreover, unlike downwind states' obligation to attain the NAAQS, eliminating upwind states' "significant contribution" is a statutory obligation that EPA applies by weighing cost and air quality improvements. *See EME Homer*, 134 S. Ct. at 1603-10 (upholding EPA's interpretation of "significant" contribution). EPA's Good Neighbor framework thus only regulates in the first place those emissions that can be eliminated by available, cost-effective controls. *See* 83 Fed. Reg. at 65,884, 65,886. Considering feasibility when determining the appropriate timeframe for imposing upwind reductions mirrors this element of the Good Neighbor framework and ensures that EPA, if it reaches Step Three, has available at least some emission controls that can be used to identify the emissions that can be cost-effectively eliminated. *Id.* at 65,890.

Petitioners' argument that EPA's consideration of feasibility is at odds with precedent is unavailing. Citing *Sierra Club* v. *EPA*, 294 F.3d 155, 161 (D.C. Cir. 2002), they argue that the downwind attainment dates "leave no room for claims of technological or economic infeasibility." State Br. 29; *see* Citizen Br. 23-24. *Sierra Club*

considered whether EPA could extend an area's attainment date without reclassifying the area, where the area's nonattainment was related to upwind emissions. 294 F.3d at 159. The Court held that the attainment dates could not be adjusted based on ozone transport problems. *Id.* at 161.

But *Sierra Club* merely affirmed the Act's plain text, which requires reclassification when a state is not attaining the NAAQS. *See id.* (explaining that attainment dates should "remain intact, complete with additional program obligations in the event of nonattainment" because that was the Act's "plain meaning"). This holding does not bear upon EPA's ability to consider feasibility here, where the statutory text provides neither a deadline nor any other process for Good Neighbor emission reductions. Moreover, the *Sierra Club* Court agreed that downwind states are obligated to do only what is "reasonably available" and affirmed EPA's discretion to consider whether controls "would not advance the attainment date, would cause substantial widespread and long-term adverse impacts, or would be economically or technologically infeasible." *Id.* at 162-63. *Sierra Club* thus supports EPA's position that feasibility is an appropriate consideration for upwind obligations as well. 83 Fed. Reg. at 65,907.[6]

[6] Petitioners' citations to *Natural Resources Defense Council, Inc. v. EPA*, 777 F.3d 456 (D.C. Cir. 2014) ("*NRDC*"), and *Union Electric Co. v. EPA*, 427 U.S. 246 (1976), also do not foreclose considering feasibility. In *NRDC*, EPA sought to extend to December 31st the ozone attainment dates in Section 7511 to allow states to use data from that year's ozone season in demonstrating attainment. 777 F.3d at 465. The Court held that Section 7511 did not provide that particular flexibility, but it did not

Petitioners further contest EPA's reading by claiming it reflects a "policy preference" to burden downwind rather than upwind States. State Br. 28, 33-34. But EPA was not deciding whether to impose controls on upwind states, it was assessing whether there would be any feasible controls to impose in the first place. Even if EPA had selected a 2020 analytic year, its determination would have remained the same: that there were no feasible controls that could be implemented to reduce upwind states' "significant contributions" before the 2021 attainment date. *See* 83 Fed. Reg. at 65,908-09. The burden on downwind states in 2021 would remain the same either way. More fundamentally, the Good Neighbor Provision does not require that upwind states continue to reduce emissions until downwind states are in attainment, only that they prohibit those emissions that significantly contribute to or interfere with downwind air quality. *See* 42 U.S.C. § 7410(a)(2)(D)(i)(I). So while the Good Neighbor Provision is intended to help equalize the respective burdens, in the absence of available, cost-effective upwind controls, downwind states must continue to employ any required controls to meet attainment consistent with the Act's design.

Finally, there is no merit to Petitioners' claim that EPA was required and failed to consider the impacts of its interpretation on environmental justice communities

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speak to Title I's flexibilities generally or to upwind states' obligations. *Id.* *Union Electric*, meanwhile, was decided before the Act was amended to allow additional consideration of economic and technological feasibility. *See Union Electric*, 427 U.S. at 249-50; *see also* 83 Fed. Reg. at 65,907 n.109.

and ecosystems. Citizen Br. 25-31. As a preliminary matter, Petitioners' comments on the Rule did not assert any failure to comply with a supposed statutory command to consider environmental justice and ecosystems effects when interpreting the ambiguous phrase "consistent with." As a result, these arguments are waived. 42 U.S.C. § 7607(d)(7)(B) ("Only an objection to a rule . . . raised with reasonable specificity during the period for public comment . . . may be raised during judicial review."); *Nat'l Ass'n of Clean Air Agencies v. EPA*, 489 F.3d 1221, 1231 (D.C. Cir. 2007).

In any case, Petitioners again mistake the effect of EPA's interpretation. Considering feasibility of controls in selecting an analytic year does not allow the Agency to delay feasible reductions that would otherwise benefit the public and the environment; it recognizes that when reductions are infeasible by the next attainment date, then the Agency must compel reductions as expeditiously as practicable thereafter, and before the next attainment date. 83 Fed. Reg. at 65,907. Where this allows EPA to consider efficacious emission controls that are unavailable by the earlier attainment dates, considering feasibility is in service of reducing the harmful effects Petitioners cite.

Protecting vulnerable communities and ecosystems from the harmful effects of ozone is also inherent to the Act's goal of reaching attainment with the NAAQS, *see* 42 U.S.C. § 7409(b). So these considerations do not represent *additional* statutory factors for EPA's consideration on top of the general provisions of Title I, which seek

attainment with the NAAQS and which provide the flexibilities described above.[7] *Cf. Protecting Arizona's Res. & Children v. FHA*, No. CV-15-00893-PHX, 2016 WL 5339694 at *9 (D. Ariz. Aug. 19, 2016) (holding that agency projects consistent with NAAQS implementation plans need not separately consider sensitive groups already considered in setting the NAAQS).

Ultimately, unlike downwind attainment, the Act does not address upwind emissions through a multi-phase process with multiple, staged attainment dates and delineated procedures for problems not resolved by reasonable controls. Instead, the Act states only that upwind states must prohibit their significantly contributing emissions and is silent regarding exactly when and how this will be accomplished. EPA has reasonably interpreted the Good Neighbor Provision to allow it to balance expeditious attainment with feasibility considerations, consistent with the flexibility built into downwind states' obligations. This interpretation ensures that the Good Neighbor Provision can be effectuated even in circumstances where emission controls

[7] Petitioners claim EPA cannot rely on "claims it made with respect to" Executive Orders governing these matters as a justification for its interpretation; Petitioners then attack statements made under those Orders. Citizen Br. 27-28. But as Petitioners acknowledge, "EPA never suggested that the claims it made with respect to the executive orders were relevant to its statutory interpretation." Citizen Br. 27. EPA's compliance with these Executive Orders is not subject to judicial review, *see* 59 Fed. Reg. 7629, 7632-33 (Feb. 11, 1994) ("Section 6-609. Judicial Review"); 62 Fed. Reg. 19,885, 19,888 (Apr. 21, 1997) ("Section 7-701"); *Cmtys. Against Runway Expansion, Inc. v. FAA*, 355 F.3d 678, 689 (D.C. Cir. 2004), so statements under those Orders are irrelevant here.

are not immediately available, satisfying the statutory mandate and providing for meaningful emission reductions – and public benefits – as expeditiously as practicable. As a reasonable interpretation of Congress's silence, EPA's interpretation is due deference. *See Chevron*, 467 U.S. at 843.

II. EPA's application of the statute in the Close-Out Rule was appropriate.

In this Rule, EPA applied the Good Neighbor Provision to select a 2023 analytic year for consideration of air quality problems and any upwind emission reductions necessary to address them. EPA weighed both the upcoming attainment dates in 2021 and 2027 and the control strategies that could be implemented before those dates. Based on these factors, EPA reasonably determined that structuring the Rule around a 2023 analytic year was necessary to allow consideration of the longer-term and more efficacious technologies excluded from the CSAPR Update. By contrast, the record demonstrated that any further emission reductions available from short-term control strategies already deployed (or rejected) in the CSAPR Update would be insufficient to ensure the Agency could fully resolve upwind Good Neighbor obligations. EPA's determination thus reflected a reasoned balance of the statutory factors and sought to ensure, not impede, application of the Good Neighbor Provision.

A. EPA reasonably selected a 2023 analytic year, in consideration of upcoming attainment dates and feasible controls.

In this Rule, EPA reasonably considered upcoming attainment dates and the

feasibility of available controls and concluded that the Rule should be structured around a 2023 analytic year. Petitioners claim EPA's selection of 2023 did not give effect to the attainment dates, unreasonably limited consideration of controls based on cost, improperly assessed over- and under-control concerns, and failed to weigh impacts on public health and the environment. But Petitioners miss the mark: EPA's evaluation of the proper analytic year was grounded in the statute and the record, and reasonably selected the year that would allow consideration – and, if necessary, imposition – of efficacious controls as expeditiously as practicable.

Contrary to Petitioners' arguments, *see* State Br. 24-25; Citizen Br. 20, EPA's selection of the analytic year was guided first by the upcoming attainment dates in 2021 and 2027. 83 Fed. Reg. at 65,892. In assessing control strategies that could be implemented by 2020 and 2026 (the last compliance measuring periods for those attainment dates, *id.*), EPA determined that little, if any, additional air quality benefit would be available from short-term controls, as these controls were already implemented (or rejected) by the CSAPR Update. *Id.* at 65,893-94. While EPA acknowledged that some minimal reductions might be available by 2020, *see infra* Section II.B, pursuing these negligible reductions would come at the expense of EPA's ability – as Petitioners acknowledge – to "evaluat[e] . . . *complete* and *longer-term* control measures," State Br. 23 (emphasis in original). *See* 83 Fed. Reg. at 65,894-95.

EPA's assessment of the longer-term controls omitted from the Update affirmed these controls have far more substantial emission reduction potential.

Especially effective are new catalytic controls, the "engineering gold-standard" of power plant NO_X controls. *Id.* at 65,904. EPA further determined that, although unavailable by the 2021 attainment date, these controls could be installed "as expeditiously as practicable" by 2023, before the 2027 nonattainment date. *Id.* at 65,905. "Given the limited availability of potential emission reductions by the 2020 attainment date," EPA thus reasonably chose to structure the Rule around the analytic year, 2023, when controls could result in "meaningful improvements in downwind areas." *Id.* at 65,909.[8]

Petitioners do not challenge EPA's conclusion that the controls feasible after 2020 presented far more emission reduction potential that those available before that date. Instead, Petitioners attempt to distract from this critical fact with a series of misguided arguments. First, Petitioners assert that EPA's application of the statute was impermissible because "EPA's 'feasibility' argument is entirely about costs[,]" State Br. 28, and "relied solely" on the cost threshold from the CSAPR Update to reject controls costing more than $1,400 per ton. *Id.* at 31. But EPA's consideration of available control strategies did not consider cost at all, save with respect to existing non-catalytic controls. 83 Fed. Reg. at 65,908. And EPA did not reject reductions

[8] Petitioners' assertion that EPA's selection of 2023 "appears to be a result-driven approach," State Br. 26 n.10, is unfounded. EPA did not know what its modeling would show for either 2020 or 2023 when it selected the analytic year. 83 Fed. Reg. at 65,909. Indeed, the only air quality modeling EPA had at that time showed air quality concerns remaining in 2023. *See* 82 Fed. Reg. 1733, 1737 (Jan. 6, 2017).

from existing non-catalytic controls as a basis for the analytic year because they cost more than $1,400 per ton. EPA rejected this control strategy because it would achieve very little air quality improvement at more than twice that cost.[9] *Id.* at 65,893-94; *see supra* Section II.B.2.

Second, Petitioners argue that EPA's selection of 2023 was not justified by concerns about "over-control" because EPA failed to model "ozone levels or upwind contributions for 2021," and so had "no record basis" to find over-control in that year.[10] State Br. 29. Petitioners are incorrect. The Rule explains that "[g]enerally, NO_X emissions levels are expected to decline in the future" because of existing local, state, and federal emission reduction programs and "changing market conditions." 83 Fed. Reg. at 65,890; *id.* at 65,908-09. Given these uncontested facts, EPA reasonably

[9] Petitioners similarly claim EPA's rejection of controls above $1,400 per ton was contrary to the CSAPR Update Regulatory Impact Analysis showing net benefits above that threshold. State Br. 32. This argument is irrelevant for the reasons above: EPA did not employ a cost threshold here and rejected non-catalytic controls because of their limited air quality benefit. Moreover, many of these Petitioners disputed the relevance of a formal cost-benefit analysis to EPA's selection of controls as intervenors in the Update litigation. *See Wisconsin v. EPA*, No. 16-1406 (D.C. Cir.), ECF No. 1725791 at 12-14.

[10] Petitioners claim this failure to model was a "departure from [EPA's] recent practice" in rejecting New York's implementation plan, and because previous transport rules "always aligned" modeling and reductions with attainment dates. State Br. 29 n.12. However, EPA rejected New York's plan because it had failed to *either* model the next attainment date *or* show that reductions were only feasible thereafter. Response to Comment ("RTC"), EPA-HQ-OAR-2018-0225-0423 at 84, JA___. EPA's prior transport rules, meanwhile, did not present the unique timing concern here, where short-term reductions were already implemented and long-term controls could not be implemented before the next attainment date.

concluded that it could not rationally select a *2020* analytic year when efficacious controls were not available until *2023* because the Agency could not assert that reductions would still be necessary at that point. *Id.* at 65,908-09. To do otherwise – imposing controls on the basis of air quality problems three years prior – would raise an unreasonable risk of over-control, especially given the prevailing trends. *Id.*; *see EME Homer*, 134 S. Ct. at 1608. At the same time, EPA was practically constrained to modeling a single year, *see* 83 Fed. Reg. at 65,908-09, and under both a statutory and a court-ordered deadline to take an action that would *fully* resolve Good Neighbor obligations for the 2008 ozone NAAQS, *see id.* at 65,909. Structuring the Rule around a 2023 analytic year was thus the only way to allow consideration of controls that had the potential to fully address upwind Good Neighbor obligations.

Third, Petitioners contest (without record support) that EPA failed to avoid "under-control" of upwind sources. State Br. 33. Petitioners' argument relies on a logical fallacy. They claim because EPA ultimately found no air quality concerns remaining in 2023, it should have modeled 2020 air quality instead. But EPA selected 2023 without knowing what its Step One air quality modeling would project. 83 Fed. Reg. at 65,909. And in any case, the basis for EPA's selection of 2023 was that the limited control strategies feasible by 2020 would be unlikely to fully address upwind Good Neighbor obligations, i.e., might under-control upwind sources. *Id.*

Fourth, Petitioners claim that the Rule will require downwind states to employ even more expensive controls to meet the 2021 attainment date. State Br. 33. This

argument is both unsupported and beside the point. EPA concluded that "the agency would not have been able to identify any cost-effective emission reductions that could be implemented in [2020]," so "any downwind air quality problems projected in 2020" – and any downwind obligations arising as a result – "would remain." 83 Fed. Reg. at 65,909. Furthermore, Petitioners' related claim that downwind controls far exceed the costs of upwind controls compares apples to oranges. State Br. 33. The Update's $1,400-per-ton cost threshold was the cost per ton of *operating existing* controls (where sources had already incurred installation costs), and reflected the *generalized* cost across the fleet. EGU NO_X Mitigation Strategies Technical Support Document ("TSD"), EPA-HQ-OAR-2018-0225-0006 at 5-6, JA___-___. Petitioners' $44,000 example is the cost per ton of *installing new* controls at *peaking* units (i.e., where limited operation makes the cost per ton higher than for regularly operating units, even if total installation cost is comparable). Comments of State of New York, EPA-HQ-OAR-2018-0225-0318 at 19 n.73, JA___. These figures thus do not demonstrate the inequity Petitioners claim.

Finally, Petitioners allege that EPA failed to weigh the harms to the public and the environment from forgoing reductions in 2020. Citizen Br. 25-31. As EPA explained, *supra*, public health and environmental considerations are implicit in, and appropriately served by, implementing upwind reductions "as expeditiously as practicable." But in any case, Petitioners' arguments are off target. Petitioners' claim that EPA "committed" in the Chesapeake Bay water quality plan to NO_X reductions

that bear upon this Rule misrepresents that plan. *See* Citizen Br. 30-31. The plan – which is not part of the record here – states that "EPA relied on *current laws and regulations under the [Clean Air Act]*," in particular EPA's 2005 Clean Air Interstate Rule, to determine how much NO_X in the overall pollution budget for the waterway should be attributed to air sources. Chesapeake Bay Total Maximum Daily Load at 6-28 (emphasis added).[11] This reasonably presumed that upwind sources would make the reductions required by that 2005 rule. But the document does not suggest, let alone compel, that EPA should consider impacts on the Chesapeake Bay's pollution budget under the Clean Water Act when taking new Good Neighbor actions under the Clean Air Act.

Meanwhile, Petitioners' assertion that EPA was required to determine health impacts from forgone ozone reductions between 2020 and 2023, Citizen Br. 26, once again ignores that EPA concluded that no meaningful emission reductions were possible before 2023. So health impacts would look the same regardless of the chosen analytic year. 83 Fed. Reg. at 65,909. At the same time, a 2023 analytic year was the only way to allow for assessment of highly efficacious catalytic controls, which can reduce NO_X emissions by up to 90 percent. *Id.*; *see also id.* at 65,894. It is hard to imagine these same Petitioners would be advocating for a 2020 analytic year at

[11] Available at: https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document.

the expense of considering new catalytic controls if EPA had ultimately found remaining air quality problems in 2023. The fact that new catalytic controls were not ultimately imposed – because downwind states will *attain and maintain* the 2008 NAAQS in 2023 – does not retroactively make EPA's decision arbitrary; given the information available to inform its choice, EPA's selection of 2023 was rational.

B. The record supports EPA's conclusion that upwind obligations could not be addressed by 2020.

Petitioners specifically challenge EPA's consideration of four control strategies in the Close-Out Rule that it found could not address Good Neighbor obligations by 2020: optimization of existing catalytic controls, optimization of existing non-catalytic controls, controls for non-power plants, and generation shifting. EPA's conclusions were sound.

1. Upwind sources have already optimized existing catalytic controls.

a. The CSAPR Update effectively incentivized available reductions from existing catalytic controls.

In support of their claim that EPA should have structured the Close-Out Rule around a 2020 analytic year, Petitioners assert that the CSAPR Update failed to compel sources to optimize their existing catalytic controls. State Br. 35-37; Citizen Br. 32-33. Petitioners' assertions are contradicted by the record, which demonstrates that the CSAPR Update budgets have incentivized operation of catalytic controls and achieved far more emission reductions than anticipated. Accordingly, the record

affirms that no additional meaningful emission reductions can reasonably be secured from further optimization.

Between 2016 and 2017, total ozone season NO_X emissions from all power plants covered by the Update fell by 77,512 tons, or 21 percent. 83 Fed. Reg. at 65,893. The improvement was dramatic among "higher-emitting" units equipped with catalytic controls that did not appear to be fully optimized before the Update (i.e., those units operating in 2016 at emission rates above 0.10 lb/mmBtu). Those higher-emitting units' efforts to optimize catalytic controls reduced their emission rates by 45 percent in the first ozone season after the Update's implementation, from 0.22 lb/mmBtu in 2016 to 0.12 lb/mmBtu in 2017. *Id.* at 65,898. Preliminary data for the 2018 ozone season affirms these trends, with a subset of the *highest*-emitting units maintaining an average emission rate of 0.121 lb/mmBtu. *Id.* In addition, the average emission rate of all catalytic control-equipped power plants covered by the Update in 2018 was 0.086 lb/mmBtu. *Id.* at 65,898 n.94. Meanwhile, over the 2018 ozone season, the total tons of NO_X emitted by covered units declined another 5,572 tons – already approaching emission levels EPA projected for *2023*. "CSAPR Update Budgets vs Emissions" Spreadsheet ("Budgets vs Emissions"), EPA-HQ-OAR-2018-0225-0422 at Cells C27 & D27, JA___; *see* 83 Fed. Reg. at 65,914.

Notwithstanding this evidence that the CSAPR Update significantly reduced emissions at catalytic-controlled units, Petitioners contend that the Update has failed to optimize catalytic controls and that EPA could have required additional reductions

from these sources before 2021. Petitioners assert two divergent bases for this conclusion. First, they assert that higher-emitting Update units have an average emission rate of 0.12 lb/mmBtu, which is above EPA's assumption in the Update that older units with optimized catalytic controls could reach 0.10 lb/mmBtu. State Br. 35-36; Citizen Br. 32-33. Second, they assert that while EPA set budgets based on that 0.10 lb/mmBtu optimization rate, actual average performance across all catalytic-controlled Update units – including higher-emitting units – has been lower, at 0.086 lb/mmBtu. State Br. 37-38.

As a preliminary matter, Petitioners' suggestion that budgets should be reset based on the current fleet-wide performance average of 0.086 lb/mmBtu mistakes basic principles of averaging. In the Update, EPA drew on data from all catalytic-controlled units nationwide to determine that 0.10 lb/mmBtu was a reasonable parameter for representing optimized performance of catalytic controls. *See* EGU NO_X Mitigation Strategies TSD at 5-6, JA___-___. To set the Update's emission budgets, EPA's calculation presumed that any Update unit presently operating above 0.10 lb/mmBtu in 2016 (the higher-emitting units) could reach that rate. 83 Fed. Reg. at 65,897. For units already below that rate, EPA's calculation held the unit to its actual, better emission rate. *Id.* Given this formulation, current data on the average emission rate of all catalytic-controlled units in the CSAPR Update after the higher-emitting units have made significant improvements cannot logically be used to infer that the higher-emitting units could further improve their performance to achieve a

0.086 lb/mmBtu rate. An improvement in the average performance of the *total* fleet will always follow from an improvement in the performance of the highest-emitting *subset* of units comprising only a portion of that average. So an improving fleet average cannot be used on its own to justify further reducing rates from the group of higher-emitting units – especially where those units have already improved their performance by 45 percent.

In any event, EPA never intended the 0.10 lb/mmBtu rate as a talisman for whether higher-emitting units, or the program as a whole, were achieving the necessary reductions. First, looking only at emission rates does not tell us how much a unit actually emitted, since a unit's emissions depend on both its emission rate and how much it operates. Emission rates also typically go up in hours when a unit is operating below a certain fraction of its capacity, so rates might be higher not because of a failure to optimize controls but due to a reduced level of operation. CSAPR Update Discussion of Short-Term Limits TSD ("Short-Term Limits TSD"), EPA-HQ-OAR-2018-0225-0396 at 1, JA___. The latter result would accomplish the Update's purpose of reducing emissions, even if that fact was not evident looking only at performance rates. This is relevant because the CSAPR Update is a mass-based program, setting limits on total tons of NO_X that states could emit. 81 Fed. Reg. at 74,508; *cf.* 42 U.S.C. § 7410(a)(2)(D)(i) (calling for elimination of "amounts" of pollution). Regardless of actual emission rates, or the methods of compliance chosen by sources, the record shows that the program has achieved the reductions it expected

when it presumed, in its budget-setting process, that higher-emitting units could reach emission rates of 0.10 lb/mmBtu. 83 Fed. Reg. at 65,893. EPA reasonably considered this fact in the Close-Out, alongside the fact that higher-emitting units have cut their emission rates by nearly half, to conclude that the CSAPR Update is incentivizing the optimization of catalytic controls. *Id.* at 65,898.

Second, the 0.10 lb/mmBtu rate was always intended to be a tool, not a benchmark. The 0.10 lb/mmBtu rate was calculated considering optimal performance of all catalytic-controlled units nationwide, including newer and best-performing units. *Id.* at 65,897. As an average, it indicated that some units would in fact optimize controls at rates below 0.10 lb/mmBtu, while some would optimize controls at rates above 0.10 lb/mmBtu. *Id.* It is true that EPA nonetheless set CSAPR Update budgets based on the reductions achievable if all higher-emitting units reached that presumptive fleet-wide average at current operating capacities. But that was an assumption intended to galvanize behavior in a trading program where individual units would have additional compliance options should reaching a rate of 0.10 lb/mmBtu prove a less economic or infeasible option in their particular circumstances. *Id.*; *see* 81 Fed. Reg. at 74,544 (calling this "generally achievable" rate "appropriate for the EPA's budget-setting purposes"). It does not follow that EPA expected all higher-emitting units to actually meet that threshold. The fact that higher-emitting units' actual average performance remains slightly above EPA's presumptive rate does not undermine the presumptive rate's effectiveness as a

regulatory tool, which has succeeded in incentivizing the necessary emission reductions and the improved use of catalytic controls.

Petitioners attempt to support their argument by citing high emission rates at Unit 1 of the W.H. Zimmer Generating Station in Ohio. State Br. 36. But operation at an individual unit does not indicate whether the Rule could require additional *fleet-wide* optimization of catalytic controls and does not establish that EPA could have reasonably structured the Close-Out Rule around further near-term optimization of catalytic controls. *See* RTC at 117, JA___ (identifying numerous factors relevant to performance of catalytic controls). EPA recognized when establishing the parameters used in the CSAPR Update, including the presumptive 0.10 lb/mmBtu optimization rate, that these parameters did not represent what every unit would actually achieve. 83 Fed. Reg. at 65,897. Rather, they represented a generalized expectation that would exert pressure on the covered units and incentivize them to improve their rate performance directly or choose other methods of compliance. *See id.* at 65,897-99; RTC at 124, JA___. Indeed, the Zimmer unit has improved its performance under the CSAPR Update, albeit not as much as EPA expected from units across the fleet on average. *See* "274 SCR Coal Units" Spreadsheet, EPA-HQ-OAR-2018-0225-0386,

at Row 186, JA___ (improving from 0.227 lb/mmBtu in 2015 to 0.193 lb/mmBtu in 2017).[12]

Petitioners' final claim that EPA unreasonably sought to justify its conclusion by "rel[ying] on data showing that these sources' 2017 emissions rates were below *0.20 lb/mmBtu*," State Br. 37 (emphasis in original), also misses the mark. In addition to the other information EPA provided in the Rule preamble, EPA noted that nearly every catalytic-controlled power plant nationwide was operating under an emission rate of 0.20 lb/mmBtu.[13] 83 Fed. Reg. at 65,898. This rate generally reflects a threshold below which EPA anticipates that a unit is operating catalytic controls: rates above 0.20 lb/mmBtu suggest catalytic controls are idle (or not installed), while rates below 0.20 lb/mmBtu indicate that controls are operating. *See* Short-Term Limits TSD at 1, JA___. In 2016, the average emission rate across higher-emitting units in the CSAPR Update was 0.22 lb/mmBtu. 83 Fed. Reg. at 65,898. By 2017, EPA data showed that of the 202 catalytic-controlled units in the CSAPR Update, 194 were below 0.20 lb/mmBtu (with many well below, as the averages referenced earlier demonstrate). *Id.* Preliminary data from 2018 suggest that of the remaining eight

[12] Meanwhile, in 2018, Ohio was more than 2000 tons below its Update budget. "Budgets vs Emissions" at Row 19, JA___.

[13] Petitioners mistakenly state that this statistic referred to the subset of Update units whose average performance in 2017 was 0.12 lb/mmBtu. *See* State Br. 37.

units, one has since retired and another five are now operating below that threshold. *Id.*

EPA never claimed this data alone proves that catalytic controls are optimized, as Petitioners appear to suggest. But in tandem with other evidence that sources have succeeded in reducing emissions by the amount expected and have dramatically improved their emission rates from pre-Update levels, this evidence supports EPA's conclusion that the Update has generally succeeded in optimizing catalytic controls at covered units. Accordingly, Petitioners have failed to demonstrate that EPA could meaningfully tighten NO_X budgets through further optimization of catalytic controls before 2021 and thus should have structured the Close-Out Rule around that year.

b. The record demonstrates that source-specific short-term emission limits are not necessary.

Petitioners also claim that EPA should have imposed additional, unit-specific emission controls to ensure catalytic control optimization on a daily basis. State Br. 38-40. However, the notion that such controls would achieve additional emission reductions by 2020 is unsupported by the record. In addition to the evidence above that units are operating their catalytic controls to substantially reduce their NO_X emission rates and total emissions, EPA specifically evaluated commenters' suggestion that units were not maintaining optimized controls throughout the ozone season and, in particular, on high-ozone days. Upon examination of hourly NO_X emission data, EPA "did not observe a significant number of instances of units selectively turning

down or turning off their emission control equipment" during high-demand periods. 83 Fed. Reg. at 65,899; *see also* Short-Term Limits TSD at 1-6, JA___-___.

Instead, EPA found that "[catalytic]-controlled units generally operated with lower emission rates during high generation hours, suggesting [catalytic controls] generally were in better operating conditions – not worse condition, let alone idling – during those days/hours." 83 Fed. Reg. at 65,899. All told, average NO_X rates during high-demand days (when Petitioners claim controls are under-used, State Br. 40) were, if anything, better than overall ozone-season rates. 83 Fed. Reg. at 65,899; Short-Term Limits TSD at 2, JA___. EPA also evaluated average daily emission rates at catalytic-controlled units and found that in 2017, emission rates were lower on every one of the 153 days in the ozone season as compared to those sources' rates in 2016. 83 Fed. Reg. at 65,899. This suggests increases in total emissions on high-demand days were not the product of optimized units loosening their emission controls, but were "generally the result of additional units that do not normally operate coming online to satisfy increased energy demand and units that do regularly operate increasing hourly utilization." *Id.*

From this data, EPA concluded that additional limitations were not necessary to incentivize units to run controls on a daily basis. *Id.* Petitioners are thus incorrect that EPA "failed to reasonably explain" why requiring continuous controls or daily limits was inappropriate here. *See* State Br. 38. While Petitioners claim that "some units" had higher emission rates during high-demand periods, their citation in support

of this assertion is a single example. It does not undermine EPA's comprehensive assessment that the CSAPR Update has effectively incentivized daily catalytic controls. *See id.* at 40 & n.20.

Furthermore, EPA has long used trading programs to comprehensively address and allocate responsibility for interstate ozone pollution in the eastern United States, consistent with Section 7410. *See* 42 U.S.C. § 7410(a)(2)(A) (allowing trading programs). While Petitioners appear to suggest that EPA could impose additional controls on top of existing trading programs, *see* State Br. 38-40, daily limits at individual units would add unnecessary and potentially disruptive features to these programs by locking individual units into particular methods and magnitudes of compliance. EPA explained the virtues of continuing to rely on a regional trading program with statewide emission caps on the record here, and Petitioners have not shown that this policy analysis is arbitrary or capricious. *See* 83 Fed. Reg. at 65,898-900; RTC at 124-25, JA___-___.

Finally, Petitioners' suggestion that continuous or daily limits would be cost-effective because EPA found (in the Update) that catalytic controls "will reduce emissions at $1,400 or less per ton" is irrelevant and incorrect. *See* State Br. 39. EPA was not attempting to determine cost-effectiveness in this Close-Out Rule; it was considering whether further optimization of catalytic controls could yield sufficient emission reductions to support assessing states' remaining Good Neighbor obligations in 2020. And in any case, EPA's conclusion in the CSAPR Update that

catalytic controls could be optimized for $1,400 per ton did not purport to conclude that this cost was achievable at *every* facility. *See* EGU NO_X Mitigation Strategies TSD at 4-5, JA___-___. Consequently, Petitioners fail to support that imposing continuous or daily limits on a source-specific basis would be cost-effective absent the added compliance flexibility afforded by the Update's trading program.

2. Optimizing existing non-catalytic controls in the short-term would not resolve upwind states' "significant contribution."

EPA also concluded that optimizing existing non-catalytic controls at power plants, which it had rejected in the CSAPR Update, did not provide a basis for structuring the Rule around a 2020 analytic year. In the Update, EPA found that non-catalytic controls were installed at only 12 percent of coal-fired generating capacity in the region. 83 Fed. Reg. at 65,895. Unsurprisingly, the Update calculated that optimizing non-catalytic controls would do little to reduce emissions or improve downwind air quality despite a cost of up to $3,400 per ton. 81 Fed. Reg. at 74,550. Accordingly, EPA found in that rule that optimizing non-catalytic controls "did not maximize NO_X reduction potential and air quality improvement relative to cost." 83 Fed. Reg. at 65,898. Therefore, EPA reasonably concluded that this emission reduction strategy was not appropriate to impose on upwind states under the Good Neighbor Provision. *Id.* at 65,894. Not one of Petitioners challenged that conclusion in the Update. *See Wisconsin v. EPA*, No. 16-1406 (D.C. Cir.).

In the Close-Out Rule, EPA explained that "[it] is not aware of any significant changes in the fleet characteristics of existing [non-catalytic controls] and their operation since promulgation of the CSAPR Update[.]" 83 Fed. Reg. at 65,894. EPA noted that in 2017, non-catalytic controls were already operating at an average emission rate of 0.14 lb/mmBtu, "indicating that existing [non-catalytic]-controlled units are already widely operating and would likely provide little opportunity for additional reductions." *Id.* at 65,898, 65,908 n.110; *see also* CSAPR Update SNCR Units, EPA-HQ-OAR-2018-0225-0421, JA___ (total ozone season emissions from non-catalytic control-equipped units only 18,483 tons in 2017 (sum of column H)). EPA therefore affirmed its conclusion from the CSAPR Update and found that it would not be "reasonable to base its selection of a future analytic year" on optimizing these controls. *Id.* at 65,894.

Petitioners argue that EPA arbitrarily rejected these controls because even if they did not "maximize cost-effectiveness," they were still "practicable." Citizen Br. 33. They further argue that EPA's conclusion was "in conflict with the [A]gency's decision to focus on a *more expensive* control measure," new catalytic controls, in selecting the analytic year. *Id.* at 34; *see* State Br. 32 n.14. Amicus the Institute for Policy Integrity similarly argues that EPA was obligated to perform a new cost-effectiveness analysis because the CSAPR Update was a "partial remedy" but the Close-Out Rule sought to fully resolve upwind obligations. Amicus Br. 6-11.

First, the figures above demonstrate that there is little additional emission reduction to be gained from existing non-catalytic controls. Further, the question was not whether this control strategy was generally "practicable." It was whether it could feasibly address upwind Good Neighbor obligations by 2020. EPA reasonably concluded that it could not. The Good Neighbor Provision requires only that upwind states eliminate those emissions "significantly contributing" to non-attainment. 42 U.S.C. § 7410(a)(2)(D)(i)(I). EPA assesses which emissions contribute "significantly" – that is, which emissions can be regulated under the Good Neighbor Provision at all – using an approach upheld by the Supreme Court in *EME Homer*. 134 S. Ct. at 1604-07. This encompasses not only the cost-per-ton, but the amount of reductions available and the attendant air quality improvement. *See* RTC at 108-09, JA___-___. By determining that optimization of non-catalytic controls in the short-term was not "cost-effective" under this test, EPA effectively found that the emissions that could be reduced by this control strategy do not "significantly contribute" to downwind nonattainment. There is no evidence in the record – or Petitioners' briefs – suggesting that the amount of emission reductions available regionally from optimizing non-catalytic controls has changed since the Update and could support a different conclusion. *See* RTC at 109, JA___. Thus it was reasonable for EPA not to select a future analytic year based on a control strategy that could not address "significant contribution."

This conclusion is not at odds with EPA's consideration of the timeframe for installing new catalytic controls. As Amicus the Institute for Public Integrity explains, "a more expensive technology would be cost-effective if the cheaper one does not lead to attainment of the goal." Amicus Br. 10. EPA whole-heartedly agrees. EPA reasonably concluded that notwithstanding that new catalytic controls are more expensive per ton of avoided emissions than optimizing existing non-catalytic controls, new catalytic controls provide the potential for substantially more air quality benefit. *See* 83 Fed. Reg. at 65,894-95, 65,897-98. EPA thus reasonably concluded that structuring the Rule around the timeframe for highly efficacious new catalytic controls was likely to be the most cost-effective choice between these two technologies for addressing any Good Neighbor obligations that might remain.

The Institute provides a useful analogy for understanding EPA's conclusions here when it asks the Court to imagine a homeowner insulating an old house. *See* Amicus Br. 12. In the analogy, the homeowner uses inexpensive $5 tape in the first winter to achieve some insulation right away, but spends significantly more on new windows in the second winter to achieve better insulation. The new windows are cost-effective, notwithstanding the substantial cost increase over the tape, because they accomplish more. *Id.* at 12-13. EPA does not disagree: while the short-term measures in the CSAPR Update were cost-effective at $1,400 per ton, the Close-Out Rule analysis was specifically geared towards ensuring EPA could consider installing "new windows": highly efficacious, albeit more expensive, new catalytic controls.

But the Institute's conclusion, Amicus Br. 12, that its analysis demonstrates that EPA should have optimized *existing non-catalytic controls* – a far less cost-effective option – mistakes the value of its analogy. Imagine that in the first year the homeowner could use the $5 tape *or* purchase $350 "quick-install" windows, which are only marginally more insulating than the roll of tape. The homeowner could reasonably reject the "quick-install" windows the first winter, given the negligible improvement they provide over the much cheaper technology, while still reasonably deciding to spend $500 on much higher performing windows the next winter. The $500 high-performance windows are cost-effective, while the $350 "quick-install" windows are not. So too with optimizing existing non-catalytic controls: EPA reasonably determined they were not cost-effective in the CSAPR Update because they provided relatively little air quality benefit at greater cost, 81 Fed. Reg. at 74,550. That determination remained reasonable when EPA rejected optimization of non-catalytic controls as a basis for the timing of the Close-Out Rule in favor of more efficacious new catalytic controls.

The Institute is likewise incorrect that EPA was obligated to reconsider optimizing non-catalytic controls because the CSAPR Update and the Close-Out Rule had "different goals." Amicus Br. 4. The CSAPR Update limited its consideration to short-term control strategies and ultimately found that those controls might not fully eliminate upwind states' significant contribution. 81 Fed. Reg. at 74,521-22. But the goal in both rules was to fully resolve upwind reductions to the extent circumstances

allowed. In both cases, short-term optimization of non-catalytic controls presented too minimal a benefit, at too significant a cost, to support finding upwind obligations fully satisfied. Continuing the analogy, the homeowner's goal is insulating the house, and that goal does not change if $500 high-performance windows are unavailable the first year. The homeowner can use $5 tape the first year and reassess what further improvements, *if any*, are required the next winter.

3. Reductions from non-power plant sources would likely not be available by 2020.

EPA also considered whether emission reductions available from sources other than power plants provided a basis to structure the Rule around a 2020 analytic year. It concluded that it was unlikely meaningful reductions could be secured from these sources by 2020. 83 Fed. Reg. at 65,901-04. Petitioners claim this conclusion was at odds with the record and that EPA impermissibly relied on a purported lack of information to reject non-power plant reductions. Citizen Br. 37-38. Petitioners ignore the detailed record of EPA's consideration of non-power plants. EPA did not defer consideration of non-power plants on the basis of insufficient information or uncertainty, but rather reached an affirmative and data-driven conclusion regarding the timeframe required to implement these controls.

EPA's assessment stemmed from data it gathered in support of the CSAPR Update indicating that some control measures could potentially be installed at some non-power plants in one year or less. 83 Fed. Reg. at 65,902; *see* Citizen Br. 37. But,

as Petitioners fail to note, the Close-Out Rule then evaluated whether those installation estimates were sufficiently comprehensive for purposes of securing emission reductions by 2020. EPA concluded they were not.

First, EPA determined that those unit-specific installation estimates "d[id] not account for factors such as multi-boiler installations at a particular source and pre-vendor bid engineering studies," as they considered timing as of "bid evaluation" for "single-unit installation." 83 Fed. Reg. at 65,902-03. Those estimates also did not include additional time necessary for permitting and installation of monitoring equipment. *Id.* at 65,902. EPA's transport rules have required that a source monitor and report emissions on a continuous basis. *See, e.g.*, 81 Fed Reg. at 74,568. Most power plants are equipped to do so, as they are already subject to EPA's monitoring requirements under a Clean Air Act program. But many non-power plants are not presently required to comply with those requirements and so could be obligated, for the first time, to construct, procure, test, program, and seek permits for the various components of the monitoring system. 83 Fed. Reg. at 65,902; Non-EGU NO_X Controls Final TSD ("Non-EGU TSD"), EPA-HQ-OAR-2018-0225-0023 at 20, JA___. The NO_X installation estimates in the record – upon which Petitioners rely – did not include this additional time and burden. 83 Fed. Reg. at 65,902-03; Non-EGU TSD at 11 (Table 3) & n.12-13, JA___.

Second, these single-source estimates were likely not representative of timeframes necessary for sector-wide compliance. 83 Fed. Reg. at 65,902. As EPA

explained, the record's "preliminary estimates" of installation timeframes of less than one year "d[id] not consider time, labor, and materials needed for programmatic adoption of measures," nor did they consider the cumulative impacts of installing controls on multiple sources in more than one, and possibly several, non-power plant sectors at once.[14] *Id.* at 65,902-03; *see also id.* at 65,895-96 (addressing comparable issues for power plants). This is particularly relevant to consideration of non-power plants because they are both smaller and more numerous than power plants, *id.* at 65,903, potentially increasing the number of individual installations of emission controls that would be necessary to achieve any meaningful improvement in air quality. *See* 81 Fed. Reg. at 74,542.

EPA acknowledged that the precise impact of these factors on a given sector or technology was "uncertain," as "the diversity of non-[power plant] sources" made predicting those impacts "complex." 83 Fed. Reg. at 65,903. And EPA specifically acknowledged particular technologies and sectors where it did not have preliminary installation timeframes, though it concluded these would be subject to the same factors it had identified for other sectors and technologies. *Id.* at 65,902-03. But upon review of the information it had gathered – and the relevant gaps – EPA reasonably concluded that "its analysis shows that [reductions from non-power plant

[14] Some of these concerns might also impact the installation of monitoring equipment, further compounding timing under-estimates. *Id.* at 65,903.

controls] could not be feasibly implemented by the 2020 attainment date," *id.* at 65,909; "expeditious implementation" might instead take "four years or more." *Id.* at 65,903.

Notably, Petitioners failed in their comments and their briefs to raise any information disputing EPA's conclusion that available installation timeframes for single-source controls do not capture the total time necessary to secure fleet-wide emission reductions. *Id.* Petitioners have not presented evidence in support of their contention that region-wide reductions from non-power plants can be secured on those short timeframes. Nor can they dispute EPA's conclusions regarding the impacts of monitoring systems, labor and material limitations, and simultaneous multi-source installations.

Ultimately, Petitioners' assertions that EPA "attempt[ed] to rely on a lack of information" and has "treat[ed] this problem with . . . passivity," Citizen Br. 38 (internal quotation omitted), are disproven by the record. EPA's conclusion about the time horizon for non-power plant emission reductions drew on several studies of installations at single power plant units, as well as on EPA's own expertise concerning associated monitoring systems and the unique challenge of regional, programmatic installation of emission controls. EPA was candid about the "significant uncertainty" regarding installation timeframes for any particular sector or technology given the multiplicity of factors, but that does not undercut the conclusions it was able to reach. 83 Fed. Reg. at 65,903-04; *see Sierra Club v. EPA*, 167 F.3d 658, 662 (D.C. Cir. 1999)

("We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to invest the resources to conduct the perfect study." (internal quotation omitted)); *Sierra Club v. EPA*, 884 F.3d 1185, 1201 (D.C. Cir. 2018) (same). And EPA did *not* conclude that reductions from non-power plants were not suitable for consideration or would be infeasible on a longer timeframe. 83 Fed. Reg. at 65,902. To the contrary, EPA cited the timeframe for non-power plant controls as a factor supporting its decision to structure the Rule around a 2023 analytic year. *See id.* at 65,905.

Similarly, Petitioners cannot establish that EPA acted unreasonably because – in their words – "despite states' failure to meet the attainment deadlines, EPA did not require *any* reductions of non-power plant emissions in the Close-Out Rule." Citizen Br. 36 (emphasis in original). The Close-Out Rule did not identify any areas as failing to meet the NAAQS in the analytic year. So EPA had no authority to require reductions – whether from power plants or non-power plants. 83 Fed. Reg. at 65,921. Petitioners' challenge here is limited to whether EPA's decision to consider air quality in 2023 rather than 2020 was arbitrary and capricious; the record shows it was not.

4. Generation shifting does not provide an independent basis for selecting a 2020 analytic year.

EPA also considered the feasibility of selecting the analytic year based on the ability of power plants to shift generation from higher- to lower-emitting units. *Id.* at 65,894. As Petitioners cite, EPA acknowledged in the CSAPR Update that units can

shift generation to lower-emitting sources as an inherent feature of the interconnected electric grid. Citizen Br. 35. Accordingly, EPA included generation shifting in its assessment of achievable emission reductions in that rule. 81 Fed. Reg. at 74,544-45. But Petitioners misconstrue the relevance of that earlier statement for EPA's determination in this Rule. Here, EPA reasonably concluded that generation shifting – even if a potential consideration in setting emission budgets – would not provide an adequate basis for *independently* determining *when* Good Neighbor obligations should be assessed.

EPA's conclusion was two-fold. First, EPA explained that generation shifting is ill-suited to form the sole basis for EPA's transport framework. 83 Fed. Reg. at 65,894. Unlike technology-based emission reduction, generation shifting does not represent a single, uniform emission reduction strategy with a discrete installation timeframe and cost per ton. *Id.*; 81 Fed. Reg. at 74,545. Rather, it exists on both a time- and cost-continuum, with the added cost necessary to prompt generation to be re-dispatched from one source to another depending on a variety of factors. 83 Fed. Reg. at 65,894. EPA's framework, however, relies on discrete technological costs to define and compare possible levels of control stringency that could be imposed on upwind states – and to assess the resulting emission and air quality benefits. Lacking discrete cost thresholds, generation shifting standing alone would provide an uncertain basis for EPA's determination that any particular level of control stringency

appropriately captured the emissions that could be considered "significant" under the Good Neighbor Provision.[15] *Id.*

EPA took the same approach in the CSAPR Update. It weighed the possible levels of control stringency using cost thresholds associated with available technology-based options. 81 Fed. Reg. at 74,540-42, 74,545. It considered generation shifting only secondarily, when assessing the emission reductions power plants could achieve at those stringency levels. *Id.* EPA thus noted in the Close-Out Rule that it "does not find it appropriate to solely evaluate the potential for generation shifting (e.g., in isolation from viable combustion or post-combustion control assessments) for purposes of selecting a future analytic year." 83 Fed. Reg. at 65,894.

Second, EPA concluded that generation shifting did not provide a basis for a 2020 analytic year because there was "a limited opportunity, if any" to secure additional short-term emission reductions from generation shifting "beyond that which is already occurring and reasonably expected to occur as a result of other factors." *Id.* at 65,894.[16] EPA specifically cited the implementation of the Update;

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[15] Petitioners' claim that EPA conceded in the Rule that generation shifting "could be implemented in the short term," Citizen Br. 35, takes that phrase out of context. In that quote, EPA was describing anticipated unit behavior under phase one of the original CSAPR. EPA was not making any conclusions regarding generation shifting under the present circumstances. *See id.* at 65,910.

[16] Even where considered in the CSAPR Update, the potential across all units was modest: roughly 1,000 tons or less than 2 percent of total reductions. Ozone Transport Policy Analysis TSD, EPA-HQ-OAR-2018-0225-0014 at 17, JA___.

"[s]ustained, lower natural gas prices that make lower-emitting [gas units] more economic to build and dispatch"; state policies and technological advancements increasing the competitiveness of renewable energy; and a coal fleet increasingly aging out of use – all of which are already shifting generation away from higher-emitting power plants. 83 Fed. Reg. at 65,914-15; RTC at 123, JA___.

Petitioners provide no evidence disputing EPA's conclusion, either demonstrating that EPA was wrong to believe that these market-based trends will continue or demonstrating that significant generation shifting potential exists beyond what the market is capturing. Instead, Petitioners question why these market trends "would prevent the use of regulatory tools to encourage or require generation shifting." Citizen Br. 35. Petitioners mischaracterize EPA's position. EPA never said "market drivers" prevent the use of "regulatory tools." Rather, EPA reasonably concluded that focusing on the substantial reductions available from technologies available in 2023, like new catalytic controls, far outweighed the value of structuring the Rule around reductions that are anticipated to occur without EPA regulation. 83 Fed. Reg. at 65,894.

III. EPA's modeling conclusions were sound.

EPA's conclusion that all downwind areas would reach attainment with the 2008 ozone NAAQS was based on air quality modeling conducted using a longstanding EPA model. *Id.* at 65,911; *see* 81 Fed. Reg. at 74,526. Contrary to Petitioners' arguments, EPA reached this conclusion based on conservative

parameters regarding future power plant emissions and only after thoroughly evaluating its basis for confidence in the model's projections. As air quality modeling is a matter of EPA's particular technical expertise, this conclusion is due "substantial deference." *North Carolina*, 531 F.3d at 925; *see Balt. Gas*, 462 U.S. at 103.

A. EPA's projections of power plant NO_X emissions were conservative and reliable.

Petitioners claim that EPA could not rely on its modeling because its projections showed that emissions in 2023 will be ten percent below the enforceable levels required by the CSAPR Update. State Br. 42. Petitioners further contend that EPA erroneously assumed certain catalytic-controlled units would achieve emission rates of 0.10 lb/mmBtu. *Id.* at 43. In addition, Amicus the Institute for Policy Integrity alleges that EPA unreasonably declined to incorporate the prospective effect of proposed federal rules. Amicus Br. 14-16. These arguments lack merit. EPA's conservative methodology took appropriate account of known fleet changes and used generalized assumptions about unit performance that reasonably reflect compliance with the CSAPR Update. In addition, EPA rationally excluded the speculative emission effects of unpromulgated rules, as instructed by its guidance.

1. EPA appropriately incorporated known fleet changes.

Petitioners' suggestion, State Br. 42-45, that EPA's projections about power plant emissions are unreasonable because they reflect "speculative" "voluntary" performance is unavailing. So is their further contention that considering these

"voluntary" actions contravenes the Act. First, these reductions are far from speculative. EPA's modeling was based on conservative projections about power plant emissions in 2023. EPA began with the most recent measured emissions data, from late 2016, and applied limited adjustments to account for "currently known changes in the power sector." 83 Fed. Reg. at 65,913. EPA specifically addressed "upcoming announced retirements, post-combustion control retrofits, coal-to-gas conversions, combustion controls upgrades, [and] new units," in addition to "on-the-books reductions" required by state and federal law. *Id.* at 65,912. EPA declined to make any less definitive adjustments, noting that "EPA's approach does not account for changes that would be estimated to occur due to economic and other environmental policy factors." *Id.* at 65,913; *cf. id.* at 65,912 & n.120 (describing extensive public comment on EPA's approach).

Excluding these broader market and policy dynamics resulted in more conservative projections than many other common projections of NO_X emissions in 2023. *Id.* at 65,914. Here, EPA predicted power plant NO_X emissions would fall 20 percent below 2016 (pre-CSAPR Update) levels. *Id.* Over that same time period, however, the U.S. Energy Information Administration estimates that those emissions will fall 21 to 32 percent, and EPA's Integrated Planning Model (which incorporates market forces) estimates a decline of 28 percent. *Id.* Compliance to date with the CSAPR Update also suggests that EPA's projections are realistic, if not conservative. As Petitioners note, EPA's 2023 power plant projections assume an additional 10

percent reduction in NO_X beyond the CSAPR Update's budget. *Id.*; *see* State Br. 42-43. But 2017 ozone data showed that emissions had already fallen 7 percent below the Update budget and preliminary 2018 data suggests emissions are close to or perhaps already 10 percent below the Update budget. 83 Fed. Reg. at 65,914. "In other words, the emission levels that commenters" – and Petitioners – "suggest are unreasonable for 2023 may well already have been achieved or nearly achieved" five years ahead of schedule. *Id.*

Likewise, Petitioners' claim that these projections are arbitrary and capricious because the incorporated fleet changes are "voluntary" is unfounded. EPA relied only on *announced* and in some cases *already completed* conversions, retirements, retrofits, and upgrades. *Id.* at 65,912. While perhaps not compelled by law in all cases, these changes are no less real for having been compelled by economics or practicality. Petitioners would require EPA to ignore information it possesses about actual developments in the fleet that will impact future air quality and, in doing so, regulate upwind emissions on the basis of information it knows is inaccurate. *See EME Homer II*, 795 F.3d at 135 (explaining that a model is arbitrary and capricious if it "bears no rational relationship to the characteristics of the data to which it is applied").

In the face of this absurdity, Petitioners double down. They contend that even though these fleet changes reflect reality, considering them "contravenes the Clean Air Act." State Br. 43. In support, Petitioners cite to the Act's provisions requiring state implementation plans to demonstrate the enforceability of their efforts to

remedy NAAQS violations. *See id.* 44; 42 U.S.C. §§ 7410(a)(2)(A) & (C), 7502(c)(6), 7407(d)(3)(E)(iii).[17] But those provisions all concern what happens *after* EPA has determined there is an air quality problem. To determine *whether* there is an air quality problem, EPA does not take into account enforceability – and the Act does not require that it do so. For example, when EPA designates attainment and nonattainment areas, areas attaining the NAAQS are excused from implementing controls regardless of whether their attainment is due to enforceable emission limits or "voluntary" market conditions and unit actions. *See* 42 U.S.C. § 7407(d)(1)(A); 83 Fed. Reg. at 65,887. As EPA explained, the four-step transport framework proceeds by similar steps as the designations process, and both recognize that "not all of the factors" affecting ozone concentrations "can be subject to enforceable limitations." 83 Fed. Reg. at 65,888.

Petitioners say the designations process is not comparable because designations are made based on measured air quality, while assignment of responsibility under the

[17] Petitioners' claim that the Act's redesignation provision establishes that "no party may satisfy its obligation to address nonattainment by assuming that unenforceable reductions will occur" also overstates what the Act requires. *See* State Br. 44. First, upwind states do not have an "obligation to address nonattainment"; they need only address their "significant contribution," which does not require making *all possible* reductions to reach attainment. 83 Fed. Reg. at 65,888. Second, to demonstrate that attainment is due to "permanent and enforceable reductions," EPA only requires that attainment be "reasonably attributable" to enforceable measures, and its interpretation has been upheld by the Seventh Circuit. *Sierra Club v. EPA*, 774 F.3d 383, 393-96 (7th Cir. 2014).

Good Neighbor Provision is based on projected air quality. State Br. 44. But in both cases, EPA determines whether to regulate emitting states and sources by considering the best available information about the air quality that regulation would remedy. In the Good Neighbor context, that requires some predictions about conditions in 2023, but the adjustments EPA made to account for known fleet changes make its modeling *more* realistic, not less. Petitioners' proposal, on the other hand, would ignore real-world conditions altogether. 83 Fed. Reg. at 65,887-88.

It is worth noting that many of the variables and inputs used in air quality modeling – whether performed by EPA or a state – are "unenforceable." *Id.* at 65,888. For example, to accurately project future emissions from mobile sources, modelers consider enforceable emission standards but must also make projections based in part on unregulated consumer behavior, such as the number of vehicles on the road, their age, and how far they will travel. *See, e.g.*, Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations" ("Emissions Inventory Guidance"), EPA-HQ-OAR-2018-0225-0395 at 123, JA___. Though by their nature unenforceable, these variables are necessary components of the emissions projections upon which the model relies; claiming "voluntary" or "unenforceable" elements should be excluded from emissions projections is thus contrary to the fundamental design of air quality modeling.

Ultimately, Petitioners' reading would require EPA to presume that NO_X emissions from power plants will increase by 2023 (as units are already below the legally enforceable CSAPR Update budgets). Assuming a rise in power plant emissions is inconsistent with overwhelming evidence in the record: with actual emissions over the last several decades; with emissions projections developed by other agencies or in other contexts; and with the results of the model that Petitioners themselves rely on to contest other elements of EPA's modeling, *see infra*. As Petitioners explain, "the usefulness of a model hinges on how closely its assumptions reflect reality." State Br. 41-42 (citing *Sierra Club v. Costle*, 657 F.2d 298, 332 (D.C. Cir. 1981)). Unlike EPA's modeling choices, Petitioners' proposed constraint would have no relationship to reality.[18]

2. EPA's use of CSAPR Update emission rates was a reasonable proxy for unit compliance under that rule.

Petitioners also object to EPA's projections on the grounds that EPA assumed that catalytic-controlled units would "emit at or below 0.10 lb/mmBtu beginning in 2017." State Br. 43 (internal quotation omitted). They claim this assumption was

[18] Petitioners claim that EPA's position is contrary to its rejection of New York's 2008 implementation plan. But there, data showed State emissions would contribute to downwind nonattainment yet New York had not evaluated whether its contribution was "significant," instead "assert[ing] that emissions in the state had been reduced over time." RTC at 54, JA___. EPA's statement that the plan failed to demonstrate enforceable reductions was thus in the unrelated context of disputing that these reductions could excuse assessing "significant contribution," not in the context of determining whether air quality problems exist in the first instance. *Id.*

contrary to data showing some catalytic-controlled units are still operating above this rate. *Id.* As noted above, the record does not support an assertion that EPA has over-predicted reductions from catalytic-controlled units. *See supra* Section II.B.1. Moreover, EPA's assumption that higher-emitting catalytic-controlled units would, on average, improve their emission rates to 0.10 lb/mmBtu was reasonable because this parameter served as a proxy for these units' compliance with the CSAPR Update. EPA explained that this average rate reflects "a reasonable compliance pathway in response to the CSAPR Update," notwithstanding that units may well "find an alternative compliance pathway that achieves commensurate emission reductions[.]" 83 Fed. Reg. at 65,914.

Petitioners are thus incorrect that current performance data undermines EPA's projections. Using that average rate effectively captured the total emission reductions generated by the Update, regardless of unit-level compliance choices. It also aligned with how that rate was used in the Update: as a means of calculating and representing total emission reductions available from catalytic-controlled units while avoiding the significant additional uncertainty that would result from attempting to divine the particular reductions feasible at each unit. *See id.*

3. EPA's exclusion of the speculative effects of unpromulgated rules was reasonable and consistent with guidance.

Amicus the Institute for Policy Integrity attacks one additional feature of EPA's modeling. It contends that it impermissibly excluded the presumed emission

effects of proposed federal rules. Amicus Br. 14-16. But EPA reasonably concluded that including these proposals would not provide a sound basis for modeling future conditions: "EPA's normal practice is to only include changes in emissions from final regulatory actions in its modeling because, until such rules are finalized, any potential changes in NO_X . . . emissions are speculative." 83 Fed. Reg. at 65,915.

The Institute contends that EPA cannot reject these proposed rules as "speculative" because their inclusion is required by EPA's "Guidelines for Preparing Economic Analyses" and by the Agency's "normal" practice, which it says is reflected in the Regulatory Impact Analysis developed for the "Clean Power Plan" and the Economic Analysis developed for the "Waters of the United States" rule. Amicus Br. 15 & n.9. But the economic Guidelines it cites are not applicable. Projecting emissions for use in EPA's air quality modeling is governed by separate modeling guidance: EPA's Emissions Inventory Guidance, JA___-___. That guidance explains that "[i]mpacts of proposed [federal] rules are rarely included" in EPA emissions projections "as the changes in emissions impacts can be very large between the proposed and final rules." *Id.* at 116, JA___. Nor is EPA's past practice in economic analyses, which are directed towards assessing the monetary and other impacts of a particular regulatory course, relevant to determining whether air quality problems will occur in a future year.

In any case, the Act provides solutions in the event actual air quality diverges from EPA's projections. If implementation of a new rule or the repeal of an existing

rule were to meaningfully alter actual air quality in 2023, Petitioners could, among other things, petition the Agency for rulemaking or other relief. Given applicable guidance and other statutory tools, EPA reasonably declined to regulate *now* on the basis of future events that may never come to pass.

B. EPA appropriately weighed and rejected alternative ozone projections.

Petitioners also contend that EPA's conclusion that all areas will reach attainment in 2023 was flawed because, contrary to its own guidance, it failed to consider "more accurate" alternative modeling showing two receptors in nonattainment. State Br. 45-48. Petitioners claim this inattention to the alternative modeling undermines EPA's conclusion because EPA's model only found areas attaining the NAAQS "by the narrowest of margins." *Id.* at 46. Petitioners are incorrect on both counts.

First, the record demonstrates that EPA conducted detailed analysis comparing its chosen model with the alternative model cited by Petitioners. EPA began by considering commenters' – and Petitioners' – contention that EPA's chosen model should be rejected in favor of the alternative model because the alternative model better predicted actual air quality results in 2017. Like commenters, Petitioners specifically point to ozone results at the Westport receptor in Fairfield County, Connecticut, where EPA's projected 2017 average design value was 76.5 ppb, but the

measured design value was 83 ppb.[19] By contrast, Petitioners claim, the alternative model "correctly predict[ed] measurements at Westport." State Br. 47; *see* 83 Fed. Reg. at 65,918. In the Rule, EPA addressed this disparity, noting that the comparison of measured ozone concentrations to EPA's *average* – rather than *maximum* – projected design value was inapposite. 83 Fed. Reg. at 65,916. As in its 2023 projections, EPA's air quality projections for 2017 (developed for the CSAPR Update) included both an average design value and a maximum design value. The average design value represents air quality that might be expected with average meteorological conditions. But the maximum design value represents air quality under the kind of recurring weather conditions more conducive to ozone formation.[20] 81 Fed. Reg. at 74,532; 83 Fed. Reg. at 65,916. During the three years comprising the measured 2017 design value, however, "meteorology was more conducive than average for ozone formation" in the Northeast, 83 Fed. Reg. at 65,918 – precisely the conditions the maximum projected design value sought to capture.

Comparing the EPA's 2017 projections for *maximum* design value with ozone concentrations for that year shows that EPA's chosen model quite accurately

[19] EPA's transport framework is based on three-year averages known as "design values" – not a single year of data. 81 Fed. Reg. at 74,531. A 2017 design value would consider measured data from 2015, 2016, and 2017.

[20] In the Update, EPA used "maximum" ozone conditions to identify "maintenance" receptors that could have difficulty maintaining their NAAQS compliance in high-ozone years. 81 Fed. Reg. at 74,531.

anticipated the air quality measured in these high-ozone years. EPA's analysis of its model's results showed broad consistency between projected and measured values across 81 sites in the Northeast. *Id.* On average, EPA's 2017 projected maximum design values were "only 0.5 ppb higher than the corresponding 2017 measured design values." *Id.* The Agency thus concluded that "the results for sites in the Northeast do not, on balance, show a notable bias in the [EPA model's] design value projections." *Id.* Individual under-predictions, such as that at the Westport receptor (whose 79.5 ppb maximum projected design value continued to have the largest gap with its 83 ppb measured design value), do not indicate otherwise, but more likely reflect EPA's inability to predict meteorology at such a granular level. *Id.*

EPA also compared its model's 2023 projections directly to those of the alternative model, finding that the "[the alternative model's] 2023 design values are, in fact, fairly consistent with . . . [EPA's] 2023 projections at nearly all sites." *Id.* On average, the difference between the two models was only 0.15 ppb, *id.* – a number barely larger than the 0.1 ppb margin that Petitioners call "tiny." State Br. 47. With two exceptions, the Westport receptor and the Susan Wagner receptor (Suffolk County, New York), the models agreed that no downwind receptors will remain in nonattainment in 2023. 83 Fed. Reg. at 65,918.

Notwithstanding that results at individual monitors do not validate or invalidate a model, EPA specifically examined whether the alternative model's projections of 2023 air quality problems at the Westport and Susan Wagner receptors warranted

further scrutiny of EPA's own modeling. EPA concluded they did not. EPA noted first that the alternative model's projections for those two receptors were significantly out of step with the alternative model's *own* projections at other, nearby monitors. The alternative model predicted that ozone would only decline 5 percent at the Susan Wagner receptor over the twelve years between 2011 and 2023. 83 Fed. Reg. at 65,919. But at the nearby receptor in Bayonne, New Jersey, that model projects ozone declining 13 percent over that same period of time. The Westport receptor is similarly out of step with its neighbors: while the alternative model projects ozone at Westport to decline only 3 percent, "at other sites along the Connecticut coastline . . . ozone is projected to decline by 10 to 19 percent." *Id.*. Both Westport and Susan Wagner are also inconsistent with other New York City-area receptors, which the alternative model projected as seeing ozone declines of 11 to 18 percent. *Id.*

For comparison, EPA predicted that ozone at Westport will decline by 13 percent, while projecting that its neighboring receptors would decline between 13 and 18 percent. *Id.* Likewise, EPA's projection at Susan Wagner, a decline of 12 percent, aligns with its projection that the neighboring Bayonne receptor will see ozone decline 15 percent. EPA's projections are thus "much more spatially consistent" across this area than the alternative model's projections. *Id.*

The anomalous nature of the alternative model's results at Westport and Susan Wagner suggested that these projections might simply be unreliable. But EPA nonetheless examined possible reasons for the divergence and specifically assessed

whether the alternative model's results might be the more defensible. EPA again concluded they were not. First, EPA considered whether the alternative model's results at Westport and Susan Wagner might be explained by the two receptors' proximity to New York City, since the "non-linear" chemistry involved in ozone formation can increase ozone in areas near a city. *Id.* But the alternative model did not project equally anomalous results at the receptor closest to New York City (Greenwich). *Id.*

Second, EPA investigated whether the divergence might be due to the fact that Westport and Susan Wagner are coastal air quality receptors. Ozone formation over land can differ from ozone formation over water, so the treatment of coastal monitors can be a meaningful component of model design. EPA's review of the record showed that the alternative model might be prone to less reliable results at these coastal receptors. *Id.* at 65,919-20. The Ozone Transport Commission, which had conducted the alternative modeling, also conducted analysis using EPA's chosen model, and thus had conducted a performance evaluation for both models. *See* Ozone Transport Commission TSD, EPA-HQ-OAR-2018-0225-0411 at 6-31, JA___; *see* 83 Fed. Reg. at 65,918. Between the two, the Commission's run of EPA's chosen model had "lower error and higher correlation with measured data" than its run of the alternative model at sites in Connecticut and New York. 83 Fed. Reg. at 65,919. This appeared to be due in part to the fact that, when considering coastal monitors, ozone concentrations used in one part of the alternative modeling diverged from observed

data far more significantly than the comparable concentrations in the Commission's better-performing run of EPA's chosen model. *Id.* Indeed, when the Commission used a tool to limit the influence of "over-water" areas in the alternative model, its 2017 projected concentrations for both Susan Wagner and Westport dropped significantly (from 78 to 72 ppb, and from 83 to 76 ppb respectively). *Id.* at 65,919-20. EPA concluded that this potential inflation of ozone at coastal receptors "call[s] into question the validity of their [alternative] modeling for other future years" like 2023. *Id.* at 65,920. In the absence of a reasoned explanation for the alternative model's anomalous results, EPA concluded that it could not presume those results to be more accurate than those of its own model.

The purported lack of a wide margin of attainment shown in EPA's modeling does not render EPA's conclusion unreasonable. Petitioners claim that "[h]ad EPA given any weight to [the alternative model's] 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*[.]" State Br. 47 (emphasis added). But EPA's modeling predicted that in all areas, average design values – signifying typical meteorological conditions – would attain the NAAQS in 2023 by at least 2.0 ppb, with 12 of 16 receptors attaining by at least 4.0 ppb. 83 Fed. Reg. at 65,917; RTC at 10, JA___. And all but two receptors had maximum design values – signifying ozone-conducive meteorological conditions – that maintained the NAAQS by at least 1.0 ppb. 83 Fed. Reg. at 65,917. Maximum design values at the two exceptions, the Westport and

Stratford receptors in Connecticut, still maintained the NAAQS with a margin of 0.4 ppb and 0.8 ppb respectively. *Id.*

Petitioners' assertion that EPA has found attainment by only 0.1 ppb refers to a single maximum design value EPA calculated under an *alternative* methodology it included in the rule to respond to commenters concerned that predictions for coastal areas were less reliable. *Id.* This 0.1 ppb-projection was not based on EPA's generally applicable "3 x 3" methodology – *and in any case, even the alternative methodology ultimately projected attainment*. Petitioners' attempt to depict EPA's modeling results as on the knife edge of nonattainment willfully ignores these facts in an effort to create "significant uncertainty" about EPA's model. *See* State Br. 46. But on this point, the modeling results speak for themselves.

All told, EPA's actions were consistent with both a reasonable "weight of the evidence" review of available information and with applicable EPA guidance. Petitioners acknowledge that "[t]o be sure, EPA was still entitled to rely largely on its own modeling," so long as it did not "disregard" other modeling results in the record. State Br. 46. EPA did not overstep that boundary here: it thoughtfully compared the results of its model against available alternatives, compared the models' methodology and features, and assessed the particular outlier results in Petitioners' preferred model. After this review, EPA reasonably concluded – based on the totality of that evidence – that it had confidence in its own model projections. That conclusion is due substantial deference. *Balt. Gas*, 462 U.S. at 103; *North Carolina*, 531 F.3d at 925

("[T]he court owes substantial deference to EPA's technical expertise[.]"); *EME Homer II*, 795 F.3d at 135 ("This Court's review of EPA's modeling choices is deferential.").

CONCLUSION

The petitions for review should be denied.[21]

Respectfully submitted,

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[21] Petitioners' arguments in this case lack merit. However, in the event the petitions are granted, Petitioners' request that EPA be ordered to complete a new rulemaking within five months should be rejected as a practical impossibility. It takes approximately six months just to complete air quality modeling under Step One of EPA's transport framework, *see* 83 Fed. Reg. at 65,908, beyond which EPA would need time to complete the remaining steps in that framework, seek public comment under 42 U.S.C. § 7607(d)(3), and finalize a rule in consideration of those comments. If the Court finds any merit in Petitioners' challenges, the United States requests supplemental briefing on the issue of remedy.

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CERTIFICATE OF COMPLIANCE

I hereby certify that this brief complies with the requirements of Fed. R. App. P. 32(a)(5) and (6) because it has been prepared in 14-point Garamond, a proportionally spaced font.

I further certify pursuant to Fed. R. App. P. 32(f) and (g) that this brief contains 17,948, excluding exempted parts of the brief, according to the count of Microsoft Word, and that this brief complies with the type-volume limitation of 18,000 words set forth in the Court's Order of April 1, 2019 (ECF No. 1780502).

/s/ Chloe H. Kolman
CHLOE H. KOLMAN

CERTIFICATE OF SERVICE

I hereby certify that on June 14, 2019, I electronically filed the foregoing brief with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit using the appellate CM/ECF system. The participants in the case are registered CM/ECF users and service will be accomplished by the appellate CM/ECF system.

/s/ Chloe H. Kolman
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