



UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF DELAWARE, )
DEPARTMENT OF NATURAL )
RESOURCES & )
ENVIRONMENTAL CONTROL, )
Petitioner, )
v. )
UNITED STATES )
ENVIRONMENTAL )
PROTECTION AGENCY, )
Respondent. )

Docket No.: 18-1301

Petition for Review

ORIGINAL

PETITION FOR REVIEW

Pursuant to Rule 15 of the Federal Rules of Appellate Procedure and Section 307(b) of the Clean Air Act (42 U.S.C. § 7607(b)), Petitioner, the State of Delaware, Department of Natural Resources & Environmental Control ("Delaware"), hereby petitions the Court for review of the final rule of Respondent, the United States Environmental Protection Agency ("EPA"), entitled, "Response to Clean Air Act Section 126(b) Petitions from Delaware and Maryland," published in the Federal Register on October 5, 2018 (83 FR 50444). A copy of EPA's final rule is attached to this petition for review as Attachment A.

\*Signature on following page.

**STATE OF DELAWARE,  
DEPARTMENT OF JUSTICE**



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Date: November 2, 2018

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**CERTIFICATE OF SERVICE**

I hereby certify that on November 2, 2018, I filed the foregoing Petition for Review with the Clerk for the Court of Appeals for the District of Columbia Circuit and that, pursuant to Federal Rule of Appellate Procedure 15(c), I sent the foregoing Petition for Review by Certified Mail, Return Receipt Requested, to the following:

Andrew Wheeler  
Acting Administrator  
Office of the Administrator (1101A)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

The Honorable Jeff Sessions  
Attorney General  
U.S. Department of Justice  
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**STATE OF DELAWARE,  
DEPARTMENT OF JUSTICE**



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Date: November 2, 2018

*Attorney for Petitioner, State of Delaware,  
Department of Natural Resources &  
Environmental Control*

**Attachment A**

**Response to Clean Air Act Section 126(b) Petitions from Delaware and  
Maryland,**

**83 Federal Register 50444 (October 5, 2018)**

**ENVIRONMENTAL PROTECTION AGENCY**

[EPA-HQ-OAR-2018-0295; FRL-9984-32-OAR]

RIN 2060-AT40, 2060-AT39, 2060-AT38, 2060-AT37, 2060-AT36

**Response to Clean Air Act Section 126(b) Petitions From Delaware and Maryland**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice of final action on petition.

**SUMMARY:** The Environmental Protection Agency (EPA) is denying four petitions submitted by the state of Delaware and one petition submitted by the state of Maryland under Clean Air Act (CAA or Act) section 126(b). The petitions were submitted between July and November 2016. Each of Delaware's four petitions requested that the EPA make a finding that emissions from individual sources in Pennsylvania or West Virginia are significantly contributing to Delaware's nonattainment of the 2008 and 2015 8-hour ozone national ambient air quality standards (NAAQS). Maryland's petition requested that the EPA make a finding that emissions from 36 electric generating units in Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia are significantly contributing to ozone levels that exceed the 2008 8-hour ozone NAAQS in Maryland, and, therefore, are interfering with nonattainment and maintenance of the 2008 ozone NAAQS. The EPA is denying the petitions based on the best information available to the agency at this time, and particularly in light of an existing regulation already addressing emissions from these facilities: The Cross-State Air Pollution Rule Update for the 2008 ozone NAAQS (CSAPR Update). The EPA's denial finds that Delaware has not demonstrated that the named sources emit or would emit in violation of the CAA's "good neighbor" provision. Further, the agency's independent analysis indicates that the identified sources in Delaware's and Maryland's petitions do not currently emit and are not expected to emit pollution in violation of the good neighbor provision for either the 2008 or 2015 ozone NAAQS.

**DATES:** This final action is effective on October 5, 2018.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2018-0295. All documents in the docket are listed and publicly available at <http://www.regulations.gov>. Although listed in

the index, some information is not publicly available, *i.e.*, Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in the docket or in hard copy at the EPA Docket Center, William Jefferson Clinton (WJC) West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Office of Air and Radiation Docket and Information Center is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** Questions concerning this final action should be directed to Mr. Lev Gabrilovich, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Policy Division, Mail Code C539-01, Research Triangle Park, NC 27711, telephone (919) 541-1496; email at [gabrilovich.lev@epa.gov](mailto:gabrilovich.lev@epa.gov).

**SUPPLEMENTARY INFORMATION:** The information in this document is organized as follows:

- I. Executive Summary of the EPA's Decision on CAA Section 126(b) Petitions From Delaware and Maryland
- II. Background
  - A. Ozone and Public Health
  - B. The CAA Section 126(b) Petitions From Delaware
  - C. The CAA Section 126(b) Petition From Maryland
  - D. Summary of the EPA's May 31, 2018, Proposal
  - E. Historical Regional Analyses of Good Neighbor Obligations Related to Ozone
- III. CAA Sections 126 and 110 and Standard of Review for This Action
  - A. Statutory Authority Under CAA Sections 126 and 110(a)(2)(D)(i)(I)
  - B. Reasonableness of Applying the Four-Step Transport Framework for This Action
- IV. The EPA's Final Response to Delaware's and Maryland's CAA Section 126(b) Petitions
  - A. The EPA's Evaluation of Whether the Petitions Are Sufficient To Support a CAA Section 126(b) Finding
  - B. The EPA's Independent Analysis of the Petitions Consistent With the CSAPR Update
- V. Determinations Under CAA Section 307(b)(1)
- VI. Statutory Authority

**I. Executive Summary of the EPA's Decision on CAA Section 126(b) Petitions From Delaware and Maryland**

In 2016, the states of Delaware and Maryland submitted a total of five petitions requesting that the EPA make findings pursuant to CAA section 126(b) that emissions from numerous upwind sources significantly contribute to nonattainment and/or interfere with maintenance of the ozone NAAQS in violation of CAA section 110(a)(2)(D)(i)(I), otherwise known as the "good neighbor" provision. Delaware submitted four petitions, each alleging good neighbor violations by individual sources located in Pennsylvania or West Virginia with respect to the 2008 and 2015 ozone NAAQS. Maryland submitted a single petition alleging good neighbor violations by 36 electric generating units (EGUs) in five states with respect to the 2008 ozone NAAQS. On May 31, 2018, the EPA issued a proposal to deny all five CAA section 126(b) petitions. 83 FR 26666 (June 8, 2018). The agency solicited comments on the proposal and hosted a public hearing on June 22, 2018, where nine speakers testified. The EPA also received 117 written comments submitted to the docket on the proposed denial. This **Federal Register** notice addresses certain significant comments the agency received. The remaining comments are addressed in the Response to Comments (RTC) document available in the docket for this action.

As described in further detail in this notice, the EPA is finalizing the denial of the CAA section 126(b) petitions submitted by the states of Delaware and Maryland. Generally, the Delaware and Maryland petitions (and commenters who were supportive of the EPA's granting these petitions) suggest that Delaware and Maryland residents are exposed to unhealthy levels of ground-level ozone pollution. They identify certain EGUs in upwind states, most with post-combustion nitrogen oxides (NO<sub>x</sub>) controls,<sup>1</sup> that historically were not optimally operating for pollution abatement. The petitions ask EPA to impose federally enforceable short-term, rate-based emissions limits on these EGUs to ensure that the NO<sub>x</sub> controls are optimally operated. The EPA proposed to deny these petitions in May of 2018, and has considered public

<sup>1</sup> In the case of one facility, Brunner Island Steam Generating Station in Pennsylvania, Delaware cites, the facility's ability to combust natural gas in electricity generation and thereby reduce NO<sub>x</sub> relative to combusting coal at the facility.

comments on that proposal in crafting this final action.

Consistent with the EPA's proposal and based on the best data available to the agency at this time, the agency is finalizing its denial of these petitions. The EPA's denial for Delaware is based on its findings that air quality modeling of ozone levels in 2017 from the Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS<sup>2</sup> (CSAPR Update) and more recent air quality modeling of ozone levels in 2023 show no air quality problems in the state with regard to the 2008 and 2015 ozone NAAQS, respectively. For both the Delaware and Maryland petitions, the EPA's denial is also based on the fact that the agency has already evaluated the ozone transport issues and NO<sub>x</sub> control strategies raised in the petitions and finalized the CSAPR Update to implement the NO<sub>x</sub> control strategies achievable in states upwind of Delaware and Maryland, including at the specific EGUs named in both Delaware's and Maryland's petitions. 81 FR 74504. Although the CSAPR Update only explicitly addressed the 2008 ozone NAAQS, the EPA's conclusion in that action as to the control strategies available at the named sources is relevant to its analysis of Delaware's and Maryland's petitions with regard to both the 2008 ozone NAAQS (addressed in all five petitions) and the 2015 ozone NAAQS (addressed in the Delaware petitions) because the EPA's determination that the cost-effective control strategy is already being implemented at the named sources in the context of the CSAPR allowance trading program applies regardless of which NAAQS is being addressed, as explained below.

Because the CSAPR Update is a final rule in which the EPA has evaluated substantially the same environmental issues and concerns as those that Delaware and Maryland raise in their CAA section 126(b) petitions, the agency has reviewed those petitions in light of, among other factors, the CSAPR Update record analysis and the findings made therein. In doing so, the EPA found that the named EGUs do not have further cost-effective<sup>3</sup> NO<sub>x</sub> reduction

potential beyond the level of NO<sub>x</sub> control stringency already finalized in the CSAPR Update emissions budgets. In other words, the agency determines that the CSAPR Update appropriately quantified the cost-effective NO<sub>x</sub> reduction potential from the EGUs named in the CAA section 126(b) petitions and the EPA does not find any further NO<sub>x</sub> reductions that may be available from these EGUs at more stringent levels of NO<sub>x</sub> control to be cost effective considering additional relevant factors such as NO<sub>x</sub> reduction potential and air quality impacts.

Further, the EPA finds that the CSAPR Update is, in fact, controlling emissions from the named EGUs specifically and from all EGUs collectively in the named upwind states that impact ozone concentrations in Delaware and Maryland. Based on the 2017 ozone season emissions data, the CSAPR Update reduced regional ozone season NO<sub>x</sub> emissions by approximately 77,000 tons (21 percent) from 2016 levels. Additionally, the average 2017 ozone season NO<sub>x</sub> emissions rate across the EGUs named in the Delaware or Maryland petitions was 0.116 pounds/one million British thermal units (lbs/mmBtu) compared with average rates of 0.257 and 0.208 lbs/mmBtu in 2015 and 2016, respectively. Thus, the best data that the agency has available at this time—2017 emissions data—indicate that the CSAPR Update ozone season allowance trading program is reducing summer-time NO<sub>x</sub> emissions and these data suggest that the units named in the CAA section 126(b) petitions are collectively controlling their NO<sub>x</sub> emissions consistent with the NO<sub>x</sub> control strategies identified in the petitions.

The agency does not at this time find adequate technical or legal grounds for granting the Delaware or Maryland CAA section 126(b) petitions in light of the existing and effective CSAPR Update regulation. The agency, therefore, denies these petitions due to the lack of further cost-effective controls relative to the emissions reductions already required by the CSAPR Update and based on the best available information—2017 emissions data—indicating that the CSAPR Update is being appropriately implemented to reduce NO<sub>x</sub> emissions regionally and from the named EGUs. The EPA also notes several technical

agency considered these NO<sub>x</sub> reduction strategies to be cost effective at marginal cost of \$1,400 per ton. The EPA selected this level of control stringency by applying a multi-factor test, which indicated that this level of control stringency maximized NO<sub>x</sub> reductions and air quality improvement relative to cost, as compared to the other control levels evaluated.

deficiencies in the Delaware analyses. As further described in this notice, the EPA is, therefore, denying Delaware's petitions based on the petitioner's failure to meet its burden under CAA section 126(b) to establish a basis for the finding requested. The EPA additionally is denying both Delaware's and Maryland's petitions based on the agency's own independent analysis of the interstate transport of ozone pollution conducted for the CSAPR Update, which rebuts several assertions in these petitions, as well as additional technical analysis regarding current unit operations. Finally, the EPA is also denying Delaware's petitions for the 2015 ozone NAAQS based on its own recent analyses projecting emissions levels to a relevant future year, which found no expected nonattainment or maintenance problems in Delaware for that NAAQS. In making this final decision, the EPA reviewed the incoming petitions, the public comments received, the relevant statutory authorities, and other relevant materials. Accordingly, the EPA denies the CAA section 126(b) petitions from Delaware and Maryland.

The remainder of this notice is organized as follows: Section II of this notice provides background information, a summary of the relevant issues raised in Delaware's and Maryland's CAA section 126(b) petitions, and a summary of the EPA's May 31, 2018, proposed action; Section III of this notice provides information regarding the EPA's approach to addressing the interstate transport of ozone and the statutory authority under CAA sections 110(a)(2)(D)(i) and 126(b); and Section IV of this notice details the basis for the EPA's final action to deny these petitions, including responses to significant comments received on the proposal.

## II. Background

### A. Ozone and Public Health

Ground-level ozone is not emitted directly into the air but is a secondary air pollutant created by chemical reactions between NO<sub>x</sub> and volatile organic compounds (VOCs) in the presence of sunlight. These precursor emissions can be transported downwind directly or, after transformation in the atmosphere, as ozone. As a result, ozone formation, atmospheric residence, and transport can occur on a regional scale (*i.e.*, hundreds of miles). For further discussion of ozone-formation chemistry, the regional nature of interstate transport of ozone pollution, and health effects, *see* the CSAPR Update, 81 FR 74513–14.

<sup>2</sup> 81 FR 74504 (October 26, 2016).

<sup>3</sup> In the CSAPR Update, the EPA evaluated several levels of EGU NO<sub>x</sub> control stringency and represented those levels using an estimated marginal cost per ton of NO<sub>x</sub> reduced. The final CSAPR Update action selected the level of control stringency that included operating and optimizing existing SCR post-combustion controls, installing state-of-the-art NO<sub>x</sub> combustion controls, and shifting generation to existing units with lower NO<sub>x</sub> emission rates within the same state. This level of NO<sub>x</sub> control stringency was represented by a marginal cost of \$1,400 per ton. In other words, the

On March 12, 2008, the EPA promulgated a revision to the ozone NAAQS, lowering both the primary and secondary standards to 75 parts per billion (ppb).<sup>4</sup> On October 1, 2015, the EPA further revised the ground-level ozone NAAQS to 70 ppb.<sup>5</sup>

#### *B. The CAA Section 126(b) Petitions From Delaware*

In 2016, the state of Delaware, through the Delaware Department of Natural Resources and Environmental Control (Delaware), submitted four petitions alleging that emissions from the Conemaugh Generating Station (Conemaugh), the Homer City Generating Station (Homer City), and the Brunner Island Steam Generating Station (Brunner Island) in Pennsylvania, and the Harrison Power Station (Harrison) in West Virginia, significantly contribute to exceedances of the 2008 and 2015 8-hour ozone NAAQS in the state of Delaware.<sup>6</sup>

The petitions identify a total of 59 exceedance days in Delaware for the 2008 ozone NAAQS in the six ozone seasons between 2010 and 2015. Furthermore, Delaware contends that if the 2015 8-hour ozone NAAQS had been in effect during this period, Delaware would have experienced a total of 113 exceedance days in those ozone seasons. As discussed in Section III.D of the proposal, each of the Delaware petitions alleges that an individual source significantly contributes to nonattainment of the 2008 and 2015 8-hour ozone NAAQS in Delaware based on two common arguments. First, all four petitions allege that the EPA's modeling conducted in support of the CSAPR Update shows that the states in which these sources are located contribute one percent or more of the 2008 8-hour ozone NAAQS to ozone concentrations in Delaware. Second, all four petitions point to additional modeling to support these same claims. The Brunner Island and Harrison petitions cite an August 6, 2015 technical memorandum from Sonoma Technology, Inc. (STI), which describes contribution modeling results. The Conemaugh and Homer City petitions cite to October 24, 2016 modeling documentation from the Comprehensive Air Quality Model with

Extensions (CAMx), but Delaware did not submit this documentation with its petitions or otherwise provide it to the EPA. Based on the August 6, 2015 technical memorandum from STI and the October 24, 2016 CAMx modeling documentation, the petitions claim that all four named sources had modeled contributions above one percent of the 2008 8-hour ozone NAAQS to locations in Delaware on select days during the 2011 ozone season.<sup>7</sup>

All four petitions contend that the absence of short-term NO<sub>x</sub> emissions limits cause the named sources to significantly contribute to Delaware's nonattainment of the 2008 and 2015 ozone NAAQS. The petitions ask the EPA to implement short-term NO<sub>x</sub> emissions limits as a remedy under CAA section 126(c) to ensure optimal operation at these units. The petitions identify existing regulatory programs aimed at limiting NO<sub>x</sub> emissions at the sources but argue that these programs are not effective at preventing emissions from significantly contributing to downwind air quality problems in Delaware. In the case of Brunner Island, Homer City, and Conemaugh, Delaware argues that the Pennsylvania regulations addressing the reasonable available control technology (RACT) requirements for NO<sub>x</sub><sup>8</sup> include a 30-day averaging period for determining compliance with emissions rates, which will allow the facilities to emit above the rate limit on specific days while still meeting the 30-day average limit. Furthermore, the state argues that, although all four facilities named in their petitions have been subject to several NO<sub>x</sub> emissions allowance trading programs that effectively put a seasonal NO<sub>x</sub> emissions mass cap on the fleet of subject units, the subject units are not required to limit their NO<sub>x</sub> emissions over any particular portion of the ozone season as long as they are able to obtain sufficient NO<sub>x</sub> allowances to cover each unit's actual ozone season NO<sub>x</sub> mass emissions. The state alleges that the sources have, therefore, been able to comply with the allowance trading program requirements without having to make any significant reductions in their ozone season average NO<sub>x</sub> emissions rates.

Notably, each of the facilities is equipped with combustion and/or post-combustion controls. Harrison is equipped with low NO<sub>x</sub> burners (LNBs), overfire air (OFA), and selective catalytic reduction (SCR) for control of

NO<sub>x</sub> emissions at all three coal-fired units. Homer City is equipped with LNBs, OFA, and SCR for control of NO<sub>x</sub> emissions at all three coal-fired units. Conemaugh is equipped with LNBs, close-coupled and separated overfire air (CC/SOFA), and SCR for control of NO<sub>x</sub> emissions at both coal-fired units. Brunner Island is equipped with LNBs and combustion air controls and has the ability to burn coal, gas, or both to provide steam to its generators. Delaware acknowledges that Brunner Island can use natural gas as fuel at all three units, lowering the units' NO<sub>x</sub> emissions, but argues that Brunner Island's ability to also use coal indicates that, without a short-term NO<sub>x</sub> emissions limit, the units will continue to significantly contribute to nonattainment or interfere with maintenance of the ozone NAAQS in Delaware. In the case of Conemaugh, Harrison, and Homer City, Delaware similarly contends that current NO<sub>x</sub> emissions regulations applicable to sources in Pennsylvania and West Virginia do not prevent significant contribution to Delaware's nonattainment of the ozone NAAQS. As indicated in this notice, these EGUs all have SCR to control NO<sub>x</sub> emissions. Delaware argues that a review of emissions rates since the SCRs were installed indicates that the SCRs were at times turned off or operated at reduced levels of effectiveness in the ozone season. Thus, in Delaware's view, these sources also need a short-term NO<sub>x</sub> emissions limit to implement effective and consistent NO<sub>x</sub> control operation. For more information on the sources identified in the petitions, see Sections III.D and III.E of the proposal.

Subsequent to receiving the petitions, the EPA published notices extending the statutory deadline for the agency to take final action on all four of Delaware's CAA section 126(b) petitions. CAA section 126(b) of the Act requires the EPA to either make a finding or deny a petition within 60 days of receipt of the petition and after holding a public hearing. However, any action taken by the EPA under CAA section 126(b) is subject to the procedural requirements of CAA section 307(d). See CAA section 307(d)(1)(N). CAA section 307(d) requires the EPA to conduct notice-and-comment rulemaking, including issuance of a notice of proposed action, a period for public comment, and a public hearing before making a final determination whether to make the requested finding. In light of the time required for notice-and-comment rulemaking, CAA section 307(d)(10) provides for a time extension,

<sup>4</sup> See National Ambient Air Quality Standards for Ozone, Final Rule, 73 FR 16436 (March 27, 2008).

<sup>5</sup> See National Ambient Air Quality Standards for Ozone, Final Rule, 80 FR 65292 (October 26, 2015).

<sup>6</sup> See Petitions from the state of Delaware under CAA section 126(b) requesting that the EPA find that Conemaugh, Homer City, Brunner Island, and Harrison are emitting air pollutants in violation of the provisions of CAA section 110(a)(2)(D)(i) of the CAA with respect to the 2008 and the 2015 ozone NAAQS, available in the docket for this action.

<sup>7</sup> See 83 FR 26670.

<sup>8</sup> Additional RACT Requirements for Major Sources of NO<sub>x</sub> and VOC; 25 Pa Code 129.96–100 (also known as the "RACT II rule").



under certain circumstances, for rulemakings subject to the CAA section 307(d) procedural requirements. In accordance with CAA section 307(d)(10), the EPA determined that the 60-day period for action on Delaware's petitions would be insufficient for the EPA to complete the necessary technical review, develop an adequate proposal, and allow time for notice and comment, including an opportunity for public hearing. In 2016, the EPA published notices extending the deadlines to act on all four of Delaware's petitions by 6 months. The notices extending these deadlines can be found in the docket for this rulemaking.

### C. The CAA Section 126(b) Petition From Maryland

On November 16, 2016, the state of Maryland, through the Maryland Department of the Environment, submitted a CAA section 126(b) petition alleging that emissions from 36 EGUs significantly contribute to ozone levels that exceed the 2008 ozone NAAQS in Maryland and, therefore, significantly contribute to nonattainment and interfere with maintenance of the NAAQS.<sup>9</sup> These sources are coal-fired EGUs located in Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia, which Maryland notes are states that EPA has already determined are significantly contributing to nonattainment in Maryland under the 2008 ozone NAAQS. Maryland indicates that all of these sources have SCR or selective non-catalytic reduction (SNCR) to control NO<sub>x</sub> emissions. In addition, Maryland's technical support document discusses modeling conducted by the University of Maryland, which claims to show that ozone concentrations would be reduced if these EGUs were to optimize running their SCR and SNCR controls. Maryland argues that these projected reductions in ozone concentrations at Maryland monitors demonstrate that optimizing the post-combustion controls at the 36 units with SCR or SNCR would allow Maryland to attain, or come very close to attaining, the 2008 8-hour ozone NAAQS. Maryland also provides the results of control optimization modeling scenarios which project the ozone impacts of optimizing emissions controls in 2018. Maryland suggests, by way of using its

<sup>9</sup> See Petition to the United States Environmental Protection Agency Pursuant to Section 126 of the Clean Air Act for Abatement of Emissions from 36 Coal-Fired Electric Generating Units at 19 Plants in Five States that Significantly Contribute to Nonattainment of, and Interfere with Maintenance of, the 2008 Ozone National Ambient Air Quality Standard in the State of Maryland, available in the docket for this action.

own state regulation as an example, that optimizing controls means operating controls consistent with technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions.

The petition further alleges that Maryland's proposed remedy—discussed further below—will influence how areas in Maryland and other Mid-Atlantic states are designated under the new 2015 ozone NAAQS. According to Maryland, the proposed remedy, if implemented in 2017, would most likely allow the Baltimore area and the Washington, DC, multi-state area, which includes portions of Maryland, to both be designated attainment for the 2015 ozone NAAQS.

Maryland alleges that, although the 36 named EGUs have existing post-combustion control mechanisms that should prevent significant contribution, the facilities have either ceased to operate the controls regularly during the ozone season or have chosen to operate them in a sub-optimal manner. Maryland presents an analysis based on 2005–2015 ozone-season data to support this contention.<sup>10</sup> Maryland argues that whether controls are optimally run can be determined by comparing current ozone season average emissions rates to the lowest ozone season average emissions rate achieved either after 2005 or after the unit installed SCR or SNCR, whichever is later. Maryland further alleges that NO<sub>x</sub> emissions rates at the 36 EGUs have increased significantly since the SCR and SNCR installation and initial testing, indicating that these EGUs are not operating their post-combustion controls efficiently on each day of the ozone season.

Maryland also submitted a number of technical memoranda to support its argument. Maryland submitted analyses of control technology optimization for coal-fired EGUs in eastern states, which they contend demonstrate that NO<sub>x</sub> emissions rates at specific EGUs are well above what is considered representative of an EGU running post-combustion controls efficiently; that 2015 and 2016 EPA data show that many EGUs have not been running their post combustion controls as efficiently as they have in the past during the ozone season; and that the EPA should, therefore, ensure these controls are operating during the 2017 ozone season by including requirements that each named EGU to minimize emissions by

<sup>10</sup> Maryland Petition, Appendix A, Part 2, available in the docket for this action.

optimizing existing control technologies, enforced through use of a 30-day rolling average rate.<sup>11</sup>

Maryland also submitted the following documents: A review of its own NO<sub>x</sub> regulations for coal fired EGUs;<sup>12</sup> a study conducted by Maryland and the University of Maryland regarding regional ozone transport research and analysis efforts in Maryland;<sup>13</sup> an August 6, 2015 STI report alleging that source apportionment modeling indicates that emissions from Brunner Island (a source not specifically addressed in Maryland's petition) contribute significantly to ozone formation in Pennsylvania and neighboring states during the modeled ozone season;<sup>14</sup> a list of recommended language for the EPA to include in federal orders related to the named EGUs to remedy significant contribution;<sup>15</sup> and an evaluation of cost savings Maryland alleges the units have incurred in 2014 by not fully running their controls compared with the cost of running their controls at full efficiency.<sup>16</sup>

Maryland supplemented its petition with several further appendices submitted in 2017. Maryland submitted an additional optimization analysis comparing NO<sub>x</sub> emissions rates in 2006, 2015, and 2016 for EGUs listed in its petition;<sup>17</sup> an analysis comparing 2016 ozone season average emissions rates to the lowest demonstrated ozone season average emissions rates between 2005 and 2015 at 369 coal-fired EGUs in 29 states identified as the Eastern Modeling Domain;<sup>18</sup> an analysis comparing of average emissions data at 21 units in Pennsylvania in the first quarter of 2017 to the lowest demonstrated ozone season average emissions rate between 2005–2016;<sup>19</sup> and additional photochemical modeling conducted by the University of Maryland regarding the impact of the 36 named EGUs in the five upwind states on ozone concentrations in Maryland, which concludes that emissions from these units significantly contribute to ozone concentrations in Maryland and, therefore, contribute to nonattainment and interfere with the maintenance of the 8-hour ozone NAAQS.<sup>20</sup>

Maryland's petition requests a remedy that will compel the named EGUs to

<sup>11</sup> See *id.*

<sup>12</sup> *Id.* Appendix B.

<sup>13</sup> *Id.* Appendix C.

<sup>14</sup> *Id.* Appendix D.

<sup>15</sup> *Id.* Appendix E.

<sup>16</sup> *Id.* Appendix F.

<sup>17</sup> *Id.* Supplemental Appendix A.

<sup>18</sup> *Id.* Supplemental Appendix B.

<sup>19</sup> *Id.* Supplemental Appendix C.

<sup>20</sup> *Id.* Supplemental Appendix D.

optimize their SCR and SNCR. Maryland indicates that its petition is focused on ensuring controls are run at the units every day of the ozone season. According to Maryland, the CSAPR Update, earlier federal allowance trading programs, and many state regulations allow for longer compliance periods, which means that controls do not necessarily need to be run effectively every day to comply with these requirements. Maryland claims that this has resulted in situations where sources in the five upwind states have not run their controls efficiently on many days with high ozone, and, therefore, these sources are impacting Maryland in violation of CAA section 110(a)(2)(D)(i)(I). Maryland also claims that, on some of those days, the 36 EGUs in these states emitted in the aggregate over 300 more tons of NO<sub>x</sub> than they would have if they had run their control technologies efficiently. Additionally, Maryland states that these days are often the same days where downwind ozone levels are likely to be highest because of hot, ozone-conducive weather. Maryland supports its claim by alleging that over the entire ozone season, the relief requested in its petition could result in very large reductions. Maryland contends that in 2015, approximately 39,000 tons of NO<sub>x</sub> reductions could have been achieved in the ozone season if the 36 EGUs had simply run their controls efficiently. Therefore, Maryland states that, based on the EPA's past approaches to establishing significant contributions based on cost-effective controls, the NO<sub>x</sub> emissions from these 36 EGUs must be abated on each day of the ozone season starting in May of 2017.

Maryland contends that emissions at the 36 named EGUs can be reduced at reasonable cost, or with potentially no actual new costs to the EGUs at all,<sup>21</sup> because this requested remedy rests on the use of existing control equipment. Maryland suggests two methods to ensure optimized use of controls at these sources. First, Maryland requests that the EPA include language in federal and state regulations or operating permits requiring the owners or operators of the relevant EGUs to use all installed pollution control technology consistent with technological

<sup>21</sup> Although Maryland suggests emissions could potentially be reduced with no actual new costs to the EGUs, Maryland does not provide further information supporting its suggestion that zero-cost reductions may be available. To the contrary, Maryland states that the cost per ton range would be from \$670 to \$1,000, depending on whether the SCR systems are in partial operation or totally idled. See Maryland Petition Appendix F, available in the docket for this action.

limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices. Second, Maryland requests that the EPA enforce this requirement by comparing each unit's maximum 30-day rolling average emissions rate to the unit's lowest reported ozone emissions rate. Maryland also requests that this remedy be implemented by 2017 to help areas in Maryland achieve attainment in time to inform area designations in the state for the 2015 ozone NAAQS.

Consistent with CAA section 307(d), as discussed in Section III.D of the proposal, the EPA determined that the 60-day period for responding to Maryland's petition is insufficient for the EPA to complete the necessary technical review, develop an adequate proposal, and allow time for notice and comment, including an opportunity for public hearing, on a proposed finding regarding whether the 36 EGUs identified in the petition significantly contribute to nonattainment or interfere with maintenance of the 2008 ozone NAAQS in Maryland. On January 3, 2017, the EPA published a notice extending the deadline for acting on Maryland's CAA section 126(b) petition to July 15, 2017.<sup>22</sup>

#### D. Summary of the EPA's May 31, 2018, Proposal

In Section IV of the proposal, the EPA explained its bases for proposing to deny the CAA section 126(b) petitions from Delaware and Maryland. Given that ozone is a regional pollutant and that the EPA had recently evaluated regional ozone pollution in the CSAPR Update, the EPA proposed to evaluate the petition consistent with the same four-step regional analytic framework—described in more detail in the following section—that the EPA has used in previous regulatory actions to evaluate regional interstate ozone transport. Within this framework, the EPA also proposed to evaluate whether the sources named in the petitions emit or would emit in violation of the good neighbor provision based on both current and future anticipated emissions levels. The EPA identified multiple bases for the proposed denial.

The EPA noted that the agency's historical approach to evaluating CAA section 126(b) petitions looks first to see whether a petition, standing alone, identifies or establishes a technical basis for the requested CAA section 126(b) finding. 83 FR 26674. In this regard, the agency proposed to find that several aspects of Delaware's analyses are

<sup>22</sup> 82 FR 22 (January 3, 2017).

insufficient to support Delaware's conclusion that the four sources named in the petitions emit or would emit in violation of the good neighbor provision. First, the EPA proposed to find that Delaware does not provide sufficient information to indicate that there is a current or expected future downwind air quality problem in the state with respect to either the 2008 and 2015 ozone NAAQS. *Id.* at 26676. Second, the EPA proposed to find that the emissions information Delaware relies upon for its air quality modeling is not representative of current or future projected emissions levels at the named EGUs. *Id.* Third, the EPA proposed to find that Delaware's analyses regarding ozone contributions to modeled and/or measured ozone levels are unclear and, therefore, insufficient to support Delaware's position that the named sources are significantly contributing to nonattainment or interfering with maintenance of the NAAQS on specific days. *Id.* The EPA also proposed to find that material elements of the analysis provided in Maryland's petition are technically deficient. *Id.* at 26677.

The EPA further proposed to rely on its own independent analysis to evaluate the requested CAA section 126(b) findings. *Id.* First, the EPA proposed to find that its independent analysis provides no basis to conclude that any of the sources named by Delaware are linked to a downwind air quality problem with regard to the 2008 ozone NAAQS in steps one and two of the four-step framework. The EPA explained that, based on the modeling conducted in support of the CSAPR Update, Delaware was not projected to have any nonattainment or maintenance receptors in 2017 with respect to the 2008 ozone NAAQS, and, therefore, the states named in Delaware's petitions are not linked to a downwind air quality problem in the state under that standard. *Id.* at 26678. Furthermore, both to confirm the projections in the CSAPR Update modeling and in response to the petition's assertion that current air quality data show that Delaware has a downwind problem for the 2008 ozone NAAQS, the EPA examined Delaware's 2014–2016 design values and found that no monitors were violating the 2008 ozone NAAQS. *Id.* The EPA also proposed to find that available future year modeling data do not suggest that Delaware will have air quality problems by the relevant attainment date for the 2015 ozone NAAQS.

Second, the EPA evaluated whether there are further cost-effective NO<sub>x</sub> emissions reductions available at the specific sources named in the petitions,

consistent with step three of the four-step framework. For units in the Delaware and Maryland petitions already equipped with SCRs, the EPA proposed to determine that the CSAPR Update emissions budgets already reflect emissions reductions associated with the turning on and optimizing of existing SCR controls at the EGUs that are the subject of the petitions for the 2008 ozone NAAQS, which is the same control strategy identified in the petitions as being both feasible and cost effective. *Id.* at 26679. Therefore, the EPA proposed to determine that all identified cost-effective emission reductions have already been implemented with respect to these sources, and therefore that those sources neither emit nor would emit in violation of the good neighbor provision for the 2008 NAAQS. The EPA proposed to determine that this conclusion is also appropriate with regard to the 2015 ozone NAAQS for those sources addressed in the Delaware petitions because the EPA's determination that the cost-effective control strategy is already being implemented applies regardless of which NAAQS is being addressed. In other words, because the strategy of optimizing existing controls relative to the 2008 ozone NAAQS has already been implemented via the CSAPR Update for the sources Delaware named for the 2015 NAAQS, the EPA proposed there are no additional control strategies available to further reduce NO<sub>x</sub> emissions at these sources to address this standard. *Id.*

To the extent that the Delaware and Maryland petitions also identify sources without SCR, the EPA also proposed to deny the petitions. Maryland cited two sources operating selective non-catalytic reduction post-combustion controls (SNCR). The EPA proposed to deny Maryland's petition with respect to these sources based on its conclusion in the CSAPR Update that fully operating with SNCR is not a cost-effective NO<sub>x</sub> emission reduction strategy with respect to addressing transport obligations for the 2008 ozone NAAQS. The EPA, therefore, proposed to find that these sources do not emit and would not emit in violation of the good neighbor provision with respect to the 2008 ozone NAAQS. Additionally, one of Delaware's petitions alleges significant contribution from the Brunner Island facility, which currently has neither SCR nor SNCR installed. The EPA proposed to determine that an independent step three analysis still provides a basis for denying Delaware's Brunner Island petition. The EPA explained that the facility primarily

burned natural gas with a low NO<sub>x</sub> emission rate in the 2017 ozone season and that the EPA reasonably expects the facility to continue operating primarily by burning natural gas in future ozone seasons. *Id.* at 26680. As such, the EPA proposed to deny the Brunner Island petition because the agency found that there are no additional feasible and cost-effective NO<sub>x</sub> emission reductions available at Brunner Island.

#### *E. Historical Regional Analyses of Good Neighbor Obligations Related to Ozone*

As explained in the proposal, given that formation, atmospheric residence, and transport of ozone occur on a regional scale (*i.e.*, hundreds of miles) over much of the eastern United States, the states and the EPA have historically addressed interstate transport of ozone pursuant to the good neighbor provision through a series of regional rulemakings focused on the reduction of NO<sub>x</sub> emissions. These rulemakings have included findings that downwind states' problems attaining and maintaining the ozone NAAQS result, in part, from the contribution of pollution from multiple upwind sources located in different upwind states. Specifically, to support each historical action, an evaluation of the extent of the ozone transport problem (*i.e.*, the breadth of downwind ozone problems and the contributions from upwind states) was performed. Historically, these assessments have found interstate ozone transport to be an interconnected system of upwind and downwind ozone transport such that a regional trading program would be effective at implementing the CAA's good neighbor requirements.<sup>23</sup>

#### 1. Description of the Four-Step Transport Framework

The EPA has promulgated several transport rulemakings that have addressed the good neighbor provision, including four addressing interstate transport with respect to various ozone NAAQS. Each of these rulemakings essentially followed the same four-step transport framework to quantify and implement emission reductions necessary to address the interstate transport requirements of the good neighbor provision. These steps are:

(1) Identifying downwind air quality problems relative to the NAAQS. The EPA has identified downwind areas with air quality problems (referred to as "receptors") considering monitored air quality data, where appropriate, and air

quality modeling projections to a future compliance year. The EPA has focused its analysis on a future year in light of the forward-looking nature of the good neighbor obligation in CAA section 110(a)(2)(D)(i)(I). Specifically, the statute requires that states prohibit emissions that "will" significantly contribute to nonattainment or interfere with maintenance of the NAAQS in any other state. The EPA has reasonably interpreted this language as permitting states and the EPA in implementing the good neighbor provision to prospectively evaluate downwind air quality problems and the need for further upwind emissions reductions. *See North Carolina v. EPA*, 531 F.3d 896, 913–14 (D.C. Cir. 2008) (affirming as reasonable the EPA's interpretation of "will" to refer to future, projected ozone concentrations). The agency has thus identified areas expected to be in nonattainment with the NAAQS and those areas that may struggle to maintain the NAAQS;

(2) Determining which upwind states are linked to these identified downwind air quality problems and warrant further analysis to determine whether their emissions violate the good neighbor provision. In the EPA's most recent transport rulemakings for the 2008 ozone NAAQS, the agency identified such upwind states to be those modeled to contribute at or above a threshold equivalent to one percent of the applicable NAAQS;

(3) For upwind states linked to downwind air quality problems, identifying on a statewide basis emissions (if any) that will significantly contribute to nonattainment or interfere with maintenance of a standard, based on cost and air quality factors evaluated in a multi-factor test. In all four of the EPA's prior rulemakings for ozone, the agency apportioned emission reduction responsibility among multiple upwind states linked to downwind air quality problems using several particular cost- and air quality-based factors to quantify the reduction in a linked upwind state's emissions that the rulemaking would require pursuant to the good neighbor provision; and

(4) For states that are found to have emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS downwind, implementing the necessary emission reductions within the state. When the EPA has promulgated federal implementation plans (FIPs) addressing the good neighbor provision for the ozone NAAQS in prior transport rulemakings, the EPA has typically required affected sources in upwind states to participate in allowance trading

<sup>23</sup> The Supreme Court has also concurred with the EPA's assessment regarding the complexity and interconnectivity underpinning ozone transport. *See EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1593–94 (2014).

programs to achieve the necessary emission reductions.<sup>24</sup> In addition, the EPA has also offered states the opportunity to participate in similar EPA-operated allowance trading programs to achieve the necessary emission reductions through state implementation plans (SIPs).

## 2. Prior Regional Rulemakings Under the Good Neighbor Provision

The EPA's first regional rulemaking regarding interstate transport, the NO<sub>x</sub> SIP Call, addressed the 1979 ozone NAAQS. 63 FR 57356 (October 27, 1998). The NO<sub>x</sub> SIP Call was the result of the analytic work and recommendations of the Ozone Transport Assessment Group (OTAG), which was organized by and led by states in consultation with the EPA and other stakeholders. The EPA used this collaboratively developed analysis to conclude in the NO<sub>x</sub> SIP Call that "[t]he fact that virtually every nonattainment problem is caused by numerous sources over a wide geographic area is a factor suggesting that the solution to the problem is the implementation over a wide area of controls on many sources, each of which may have a small or unmeasurable ambient impact by itself." 63 FR 57356, 57377 (October 27, 1998). The NO<sub>x</sub> SIP Call promulgated statewide emission budgets and required upwind states to adopt SIPs that would decrease their NO<sub>x</sub> emissions by a sufficient amount to meet these budgets, thereby prohibiting the emissions that significantly contribute to nonattainment or interfere with maintenance of the ozone NAAQS in downwind states. The EPA also promulgated a model rule for a regional allowance trading program called the NO<sub>x</sub> Budget Trading Program that states could adopt in their SIPs as a mechanism to achieve some or all of the required emission reductions. All of the jurisdictions covered by the NO<sub>x</sub> SIP Call ultimately chose to adopt the NO<sub>x</sub> Budget Trading Program into their SIPs. The NO<sub>x</sub> SIP Call was upheld by the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) in all pertinent respects. See *Michigan v. EPA*, 213 F.3d 663 (2000).

In coordination with the NO<sub>x</sub> SIP Call rulemaking under CAA section 110(a)(2)(D)(i)(I), the EPA also

<sup>24</sup> While the EPA has chosen to implement emission reductions through allowance trading programs for states found to have a downwind impact, upwind states can choose to submit a SIP that implements such reductions through other enforceable mechanisms that meets the requirements of the good neighbor provision, such as the enforceable mechanisms that petitioners apparently favor and argue for in their petition.

addressed several pending CAA section 126(b) petitions submitted by eight northeastern states regarding the same air quality issues addressed by the NO<sub>x</sub> SIP Call (*i.e.*, interstate ozone transport for the 1979 ozone NAAQS). These CAA section 126(b) petitions asked the EPA to find that ozone emissions from numerous sources located in 22 states and the District of Columbia had adverse air quality impacts on the petitioning downwind states. Half of the petitioning states requested that the NO<sub>x</sub> reductions to address regional interstate ozone pollution transport be implemented using an allowance trading program.<sup>25</sup> Based on analysis conducted for the NO<sub>x</sub> SIP Call regarding upwind state impacts on downwind air quality, the EPA in May 1999 made technical determinations regarding the claims in the petitions, but did not at that time make the CAA section 126(b) findings requested by the petitions. 64 FR 28250 (May 25, 1999). In making these technical determinations, the EPA concluded that the NO<sub>x</sub> SIP Call would fully address and remediate the claims raised in these petitions, and that the EPA would, therefore, not need to take separate action to remedy any potential violations of the CAA section 110(a)(2)(D)(i) prohibition. 64 FR 28252. However, subsequent litigation over the NO<sub>x</sub> SIP Call led the EPA to "de-link" the CAA section 126(b) petition response from the NO<sub>x</sub> SIP Call, and the EPA made final CAA section 126(b) findings for 12 states named in the petitions and the District of Columbia. The EPA found that sources in these states emitted in violation of the prohibition in the good neighbor provision with respect to the 1979 ozone NAAQS based on the affirmative technical determinations made in the May 1999 rulemaking. In order to remedy the violation under CAA section 126(c), the EPA required affected sources in the upwind states to participate in a regional allowance trading program whose requirements were designed to be interchangeable with the requirements of the optional NO<sub>x</sub> Budget Trading Program model rule provided under the NO<sub>x</sub> SIP Call. 65 FR 2674 (January 18, 2000). The EPA's action on these CAA section 126(b) petitions was upheld by the D.C. Circuit. See *Appalachian Power Co. v. EPA*, 249 F.3d 1032 (D.C. Cir. 2001).

The EPA next promulgated the Clean Air Interstate Rule (CAIR), 70 FR 25162

<sup>25</sup> Connecticut, Maine, New York, and Pennsylvania requested an allowance trading program to reduce NO<sub>x</sub> emissions and remedy regional interstate ozone transport. 63 FR 56297.

(May 12, 2005) to address interstate transport under the good neighbor provision with respect to the 1997 ozone NAAQS, as well as the 1997 fine particulate matter (PM<sub>2.5</sub>) NAAQS. 70 FR 25172. The EPA adopted the same framework for quantifying the level of states' significant contribution to downwind nonattainment in CAIR as it used in the NO<sub>x</sub> SIP Call, based on the determination in the NO<sub>x</sub> SIP Call that downwind ozone nonattainment is due to the impact of emissions from numerous upwind sources and states. 70 FR 25162, 25172 (May 12, 2005). The EPA explained that "[t]ypically, two or more States contribute transported pollution to a single downwind area, so that the 'collective contribution' is much larger than the contribution of any single State." 70 FR 25186. CAIR included two distinct regulatory processes: (1) A rulemaking to define significant contribution (*i.e.*, the emission reduction obligation) under the good neighbor provision and provide for submission of SIPs eliminating that contribution, 70 FR 25162 (May 12, 2005); and (2) a rulemaking to promulgate, where necessary, FIPs imposing emission limitations in the event states did not submit SIPs. 71 FR 25328 (April 28, 2006). The FIPs required EGUs in affected states to participate in regional allowance trading programs, which replaced the previous NO<sub>x</sub> Budget Trading Program.

In conjunction with the second CAIR rulemaking, which promulgated backstop FIPs, the EPA acted on a CAA section 126(b) petition received from the state of North Carolina on March 19, 2004, seeking a finding that large EGUs located in 13 states were significantly contributing to nonattainment and/or interfering with maintenance of the 1997 ozone NAAQS and the 1997 PM<sub>2.5</sub> NAAQS in North Carolina. Citing the analyses conducted to support the promulgation of CAIR, the EPA denied North Carolina's CAA section 126(b) petition in full based on determinations either that the named states were not adversely impacting downwind air quality in violation of the good neighbor provision, or that such impacts were fully remedied by implementation of the emission reductions required by the CAIR FIPs. 71 FR 25328, 25330 (April 28, 2006).

The D.C. Circuit found that EPA's approach to CAA section 110(a)(2)(D)(i)(I) in CAIR was "fundamentally flawed" in several respects, and the rule was remanded in July 2008 with the instruction that the EPA replace the rule "from the ground up." *North Carolina*, 531 F.3d at 929.

The decision did not find fault with the EPA's general multi-step framework for addressing interstate ozone transport, but rather concluded the EPA's analysis and compliance mechanisms did not address all elements required by the statute. The EPA's separate action denying North Carolina's CAA section 126(b) petition was not challenged.

On August 8, 2011, the EPA promulgated CSAPR to replace CAIR. 76 FR 48208 (August 8, 2011). CSAPR addressed the same (1997) ozone and PM<sub>2.5</sub> NAAQS as CAIR and, in addition, addressed interstate transport for the 2006 PM<sub>2.5</sub> NAAQS by requiring 28 states to reduce sulfur dioxide (SO<sub>2</sub>) emissions, annual NO<sub>x</sub> emissions, and/or ozone season NO<sub>x</sub> emissions that would significantly contribute to other states' nonattainment or interfere with other states' ability to maintain these air quality standards. Consistent with prior determinations made in the NO<sub>x</sub> SIP Call and CAIR, the EPA again found that multiple upwind states contributed to downwind ozone nonattainment in multiple downwind states. Specifically, the EPA found "that the total 'collective contribution' from upwind sources represents a large portion of PM<sub>2.5</sub> and ozone at downwind locations and that the total amount of transport is composed of the individual contribution from numerous upwind states." 76 FR 48237. Accordingly, the EPA conducted a regional analysis, calculated emission budgets for affected states, and required EGUs in these states to participate in new regional allowance trading programs to reduce statewide emission levels.<sup>26</sup> CSAPR was subject to nearly 4 years of litigation. Ultimately, the Supreme Court upheld the EPA's approach to calculating emission reduction obligations and apportioning upwind state responsibility under the good neighbor provision, but also held that the EPA was precluded from requiring more emission reductions than necessary to address downwind air quality problems, or "over-controlling" upwind state emissions. *See EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1607–09 (2014) (*EME Homer City*).<sup>27</sup>

<sup>26</sup> The CSAPR trading programs included assurance provisions to ensure that emissions are reduced within each individual state, in accordance with North Carolina, 531 F.3d at 907–08 (holding the EPA must actually require elimination of emissions from sources that contribute significantly to nonattainment and interfere with maintenance in downwind areas). Those provisions were also included in the CSAPR Update and went into effect with the 2017 CSAPR compliance periods.

<sup>27</sup> On remand from the Supreme Court, the D.C. Circuit further affirmed various aspects of the CSAPR, while remanding the rule without vacatur for reconsideration of certain states' emissions

Most recently, the EPA promulgated the CSAPR Update to address the good neighbor provision requirements for the 2008 ozone NAAQS. 81 FR 74504 (October 26, 2016). The CSAPR Update built upon previous regulatory efforts in order to address the collective contributions of ozone pollution from 22 states in the eastern United States to widespread downwind air quality problems. As was also the case for the previous rulemakings, the EPA evaluated the nature (*i.e.*, breadth and interconnectedness) of the ozone problem and NO<sub>x</sub> reduction potential from EGUs, including those sources named in the Delaware and Maryland CAA section 126(b) petitions. The CSAPR Update is described in more detail in Section IV.B of this final action.

In finalizing the CSAPR Update, the EPA found that it was at that time unable to determine whether the rule fully resolved good neighbor obligations for most of the states subject to that action, including those addressed in Delaware's and Maryland's petitions (Indiana, Kentucky, Ohio, Pennsylvania and West Virginia), and noted that, based on its analysis at that time, the emission reductions required by the rule "may not be all that is needed" to address transported emissions.<sup>28</sup> 81 FR 74521 through 74522. The EPA noted that the information available at that time suggested that downwind air quality problems would remain in 2017 after implementation of the CSAPR Update and that upwind states continued to be linked to those downwind problems at or above the one-percent threshold. However, in the CSAPR Update the EPA could not determine whether, in step three of the four-step framework, the EPA had quantified all emission reductions that may be considered cost effective because the rule did not evaluate non-EGU ozone season NO<sub>x</sub> reductions and further EGU control strategies (*i.e.*, the implementation of new post-combustion controls) that were achievable on timeframes extending beyond the 2017 analytic year.

On July 10, 2018, the EPA proposed to find that, based on the latest available emissions inventory and air quality

budgets where it found those budgets may over-control emissions beyond what was necessary to address the good neighbor requirements. *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118 (2015) (*EME Homer City II*). The EPA addressed the remand in several rulemaking actions in 2016 and 2017.

<sup>28</sup> The EPA determined that the emission reductions required by the CSAPR Update satisfied the full scope of the good neighbor obligation for Tennessee with respect to the 2008 ozone NAAQS. 81 FR 74551–22.

modeling data for a 2023 analytic year, the CSAPR Update fully addresses the good neighbor provision requirements for the 2008 ozone NAAQS for the 20 eastern states (among the 22) previously addressed in the CSAPR Update. 83 FR 31915. The EPA's proposed determination was premised on the finding that there would be no remaining nonattainment or maintenance receptors for the 2008 ozone NAAQS in the eastern U.S. in 2023. The proposed determination applied the four-step CSAPR framework but did not progress past step one since no air quality receptors were identified. Therefore, with the CSAPR Update fully implemented, the EPA has proposed to find that states are not expected to contribute significantly to nonattainment in, or interfere with maintenance by, any other state with regard to the 2008 ozone NAAQS. EPA is currently reviewing comments on the proposed rule and anticipates taking final action by December 2018. The remaining two states were determined to have no remaining good neighbor obligation for the 2008 ozone NAAQS in the CSAPR Update (Tennessee), 81 FR 74540 (October 26, 2016), and in a separate SIP approval (Kentucky), 81 FR 33730 (July 17, 2018).

### III. CAA Sections 126 and 110 and Standard of Review for This Action

The following subsections describe both the statutory authority and the EPA's standard of review for the final action on Delaware's and Maryland's CAA section 126(b) petitions. Section III.A of this notice describes the EPA's authority and interpretation of key terms under both CAA sections 126 and 110(a)(2)(D)(i)(I), including the relationship between the good neighbor provision and CAA section 126(b). Section III.B of this notice describes the reasonableness of applying the four-step framework and certain prior findings under the CSAPR Update as the standard of review in evaluating Delaware's and Maryland's CAA section 126(b) petitions.

#### A. Statutory Authority Under CAA Sections 126 and 110(a)(2)(D)(i)(I)

The statutory authority for this action is provided by CAA sections 126 and 110(a)(2)(D)(i). Section 126(b) of the CAA provides that any state or political subdivision may petition the Administrator of the EPA to find that any major source or group of stationary sources in an upwind state emits or would emit any air pollutant in violation of the prohibition of CAA

section 110(a)(2)(D)(i).<sup>29</sup> Petitions submitted pursuant to this section are commonly referred to as CAA section 126(b) petitions. Similarly, findings by the Administrator, pursuant to this section, that a source or group of sources emits air pollutants in violation of the CAA section 110(a)(2)(D)(i) prohibition are commonly referred to as CAA section 126(b) findings.

CAA section 126(c) explains the effect of a CAA section 126(b) finding and establishes the conditions under which continued operation of a source subject to such a finding may be permitted. Specifically, CAA section 126(c) provides that it is a violation of section 126 of the Act and of the applicable SIP: (1) For any major proposed new or modified source subject to a CAA section 126(b) finding to be constructed or operate in violation of the prohibition of CAA section 110(a)(2)(D)(i); or (2) for any major existing source for which such a finding has been made to stay in operation more than 3 months after the date of the finding. The statute, however, also gives the Administrator discretion to permit the continued operation of a source beyond 3 months if the source complies with emission limitations and compliance schedules provided by the EPA to bring about compliance with the requirements contained in CAA sections 110(a)(2)(D)(i) and 126 as expeditiously as practicable, but in any event no later than 3 years from the date of the finding.

Section 110(a)(2)(D)(i) of the CAA, referred to as the good neighbor provision of the Act, requires states to prohibit certain emissions from in-state sources if such emissions impact the air quality in downwind states. Specifically, CAA sections 110(a)(1) and 110(a)(2)(D)(i)(I) require all states, within 3 years of promulgation of a new or revised NAAQS, to submit SIPs that contain adequate provisions prohibiting any source or other type of emissions activity within the state from emitting any air pollutant in amounts which will contribute significantly to nonattainment in, or interfere with maintenance by, any other state with respect to that NAAQS. As described in the prior section, the EPA has developed a number of regional rulemakings to address CAA section 110(a)(2)(D)(i)(I) for the various ozone

NAAQS. Notably, the EPA's most recent rulemaking, the CSAPR Update, was promulgated to address interstate transport under section 110(a)(2)(D)(i)(I) for the 2008 ozone NAAQS and required implementation of specific emission budgets starting in 2017. 81 FR 74504.

The EPA's historical approach to evaluating CAA section 126(b) petitions evaluates whether a petition establishes a sufficient basis for the requested CAA section 126(b) finding. *See, e.g.*, 76 FR 19662, 19666 (April 7, 2011) (proposed response to petition from New Jersey regarding SO<sub>2</sub> emissions from the Portland Generating Station); 83 FR 16064, 16070 (April 13, 2018) (final response to petition from Connecticut regarding ozone emissions from Brunner Island). The EPA first evaluates the technical analysis in the petition to see if that analysis, standing alone, is sufficient to support a CAA section 126(b) finding. The EPA focuses on the analysis in the petition because the statute does not require the EPA to conduct an independent technical analysis to evaluate claims made in CAA section 126(b) petitions. The petitioner, thus, bears the burden of establishing, as an initial matter, a technical basis for the specific finding requested. The EPA has no obligation to prepare an analysis to supplement a petition that fails, on its face, to include an initial technical demonstration. Such a petition, or a petition that fails to identify the specific finding requested, can be denied as insufficient. Nonetheless, the EPA has the discretion to conduct independent analyses when helpful in evaluating the basis for a potential CAA section 126(b) finding or developing a remedy if a finding is made.

With respect to the statutory requirements of both section 110(a)(2)(D)(i) and section 126 of the CAA, the EPA has consistently acknowledged that Congress created these provisions as two independent statutory processes to address the problem of interstate pollution transport. *See, e.g.*, 76 FR 69052, 69054 (November 7, 2011). Congress provided two separate statutory processes without indicating any preference for one over the other, suggesting it viewed either approach as a legitimate means to produce the desired result. While either provision may be applied to address interstate transport, they are also closely linked in that a violation of the prohibition in CAA section 110(a)(2)(D)(i) is a condition precedent for action under CAA section 126(b) and, critically, significant contribution to nonattainment and interference with maintenance are construed identically

for purposes of both provisions (since the identical terms are naturally interpreted as meaning the same thing in the two linked provisions). *See Appalachian Power*, 249 F.3d at 1049–50.

While section 126(b) of the CAA provides a mechanism for states and other political subdivisions to seek abatement of pollution in other states that may affect their air quality, it does not identify specific criteria or a specific methodology for the Administrator to apply when deciding whether to make a CAA section 126(b) finding or deny a petition. Therefore, the EPA has discretion to identify relevant criteria and develop a reasonable methodology for determining whether a CAA section 126(b) finding should be made. Thus, in addressing a CAA section 126(b) petition that addresses ozone transport, the EPA believes it is appropriate to interpret these ambiguous terms consistent with the EPA's historical approach to evaluating interstate ozone pollution transport under the good neighbor provision, and its interpretation and application of that related provision of the statute. This approach is particularly applicable to the Delaware and Maryland petitions because the EPA recently finalized and began implementation of the CSAPR Update, which evaluated and addresses interstate ozone pollution transport, inclusive of the named states' impacts on Delaware and Maryland. As described further in Section II of this notice, ozone is a regional air pollutant and previous EPA analyses and regulatory actions have evaluated the regional interstate ozone transport problem using a four-step analytic framework. The EPA most recently applied this four-step framework in promulgating the CSAPR Update to address interstate transport with respect to the 2008 ozone NAAQS under CAA section 110(a)(2)(D)(i)(I) and believes it may be generally useful in analyzing the 2015 ozone NAAQS. Given the specific cross-reference in CAA section 126(b) to the substantive prohibition in CAA section 110(a)(2)(D)(i), the EPA believes any prior findings made under the good neighbor provision are informative—if not determinative—for a CAA section 126(b) action. Therefore, in this instance, the EPA's decision whether to grant or deny the CAA section 126(b) petitions regarding both the 2008 8-hour ozone and 2015 ozone NAAQS depends on application of the four-step framework. The application of the four-step framework to the EPA's analysis of Maryland's and Delaware's CAA section 126(b) petitions regarding the 2008

<sup>29</sup> The text of CAA section 126 as codified in the U.S. Code cross-references CAA section 110(a)(2)(D)(ii) instead of CAA section 110(a)(2)(D)(i). The courts have confirmed that this is a scrivener's error and the correct cross-reference is to CAA section 110(a)(2)(D)(i). *See Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1040–44 (D.C. Cir. 2001).

ozone NAAQS is, therefore, legally appropriate given the EPA has previously interpreted (and addressed) significant contribution and interference with maintenance under CAA section 110(a)(2)(D)(i) under this framework via the CSAPR Update.

Unlike the 2008 ozone NAAQS, the EPA has not to date engaged in a rulemaking action regarding the good neighbor provision for the 2015 ozone NAAQS. However, the EPA has recently released technical information intended to assist states' efforts in development of SIPs to address this standard.<sup>30</sup> As part of the memo releasing the technical information, the EPA acknowledged that states have flexibility to pursue approaches that may differ from the EPA's historical approach to evaluating interstate transport in developing their good neighbor SIPs. Nonetheless, the EPA's technical analysis and the potential flexibilities identified in the memo generally followed the basic elements of the EPA's historical four-step framework. Thus, in light of the EPA's discretion to identify relevant criteria and develop a reasonable methodology for determining whether a CAA section 126(b) finding should be made, the EPA continues to evaluate the claims regarding the 2015 ozone NAAQS for the specific sources named in Delaware's CAA section 126(b) petitions consistent with the EPA's four-step framework. To the extent that the EPA made determinations in either the CSAPR Update or other analytic exercises that are pertinent to the evaluation of the 2015 ozone NAAQS under the four-step framework for the sources named in the petitions, it is appropriate to consider that relevant information as well.<sup>31</sup>

<sup>30</sup> See "Information on the Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I)" (March 27, 2018), available in the docket for this proposed action. By operation of statute, states are required to submit to the EPA their SIPs to address the good neighbor provision for the 2015 ozone NAAQS in October 2018.

<sup>31</sup> As discussed further in Section IV.B.1 of this notice, in the CSAPR Update the EPA found that it was not at that time able to determine whether the Update fully resolved good neighbor obligations for the 2008 ozone NAAQS for most of the states subject to that action, including those addressed in Delaware's and Maryland's petitions (Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia), and noted that the emission reductions required by the rule may not be all that is needed to address transported emissions. 81 FR 74521. The EPA is not making a final determination regarding any remaining good neighbor obligation for those states as part of this action, other than with respect to emissions from the sources named in the petition with respect to the particular NAAQS at issue. (Any determination made in this final rule is only with respect to the sources specifically named in Delaware's and Maryland's petitions for the

The EPA notes that Congress did not specify how the EPA should determine that a major source or group of stationary sources "emits or would emit" any air pollutant in violation of the prohibition of CAA section 110(a)(2)(D)(i)(I) under the terms of CAA section 126(b). The EPA also believes, given the more regional, rather than localized, impact of NO<sub>x</sub> emissions on downwind ozone concentrations, it is reasonable and appropriate at each step to consider whether the facility "emits or would emit" in light of the facility's current or reasonably anticipated future operating conditions. Therefore, the EPA interprets the phrase "emits or would emit" in the context of acting on Delaware's and Maryland's petitions to mean that a source may "emit" in violation of the good neighbor provision if, based on current emission levels, the upwind state in which the source is located contributes to downwind air quality problems and the individual source may be further controlled as determined through a multi-factor test that includes consideration of cost-effective controls, technical feasibility, and air quality factors. Similarly, in evaluating the sources named under these petitions, a source "would emit" in violation of the good neighbor provision if, based on reasonably anticipated future emission levels (accounting for existing conditions), the upwind state in which the source is located contributes to downwind air quality problems and the individual source could be further controlled as determined through a multi-factor test that includes consideration of cost-effective controls, technical feasibility, and air quality factors. Consistent with this interpretation, the EPA has, therefore, evaluated, in this notice, whether the sources cited in the petitions emit or would emit in violation of the good neighbor provision based on both current and anticipated future emission levels.

In interpreting the phrase "emits or would emit in violation of the prohibition of section [110(a)(2)(D)(i)]," if the EPA or a state has already adopted adequate provisions that eliminate the significant contribution to nonattainment or interference with maintenance of the NAAQS in downwind states, then there simply is no violation of the CAA section 110(a)(2)(D)(i)(I) prohibition, and, hence, no grounds to grant a CAA

applicable NAAQS.) However, the EPA notes that in a separate, pending action, the EPA has proposed to determine that the CSAPR Update fully addresses certain states' good neighbor obligations regarding the 2008 ozone NAAQS. See 83 FR 31915 (July 10, 2018).

section 126(b) petition. Put another way, requiring additional reductions would result in eliminating emissions that do not contribute significantly to nonattainment or interfere with maintenance of the NAAQS, an action beyond the scope of the prohibition in CAA section 110(a)(2)(D)(i)(I) and, therefore, beyond the scope of the EPA's authority to make the requested finding under CAA section 126(b). See *EME Homer City*, 134 S. Ct. at 1604 n.18, 1608–09 (holding the EPA may not over-control by requiring sources in upwind states to reduce emissions by more than necessary to eliminate significant contribution to nonattainment or interference with maintenance of the NAAQS in downwind states under the good neighbor provision).

Thus, for example, if the EPA has already approved a state's SIP as adequate to meet the requirements of CAA section 110(a)(2)(D)(i)(I), the EPA has no basis to find that a source in that state emits or would emit in violation of the prohibition of CAA section 110(a)(2)(D)(i)(I) absent new information demonstrating that the SIP is now insufficient to address the prohibition. Similarly, if the EPA has promulgated a FIP that it has determined fully eliminates emissions that significantly contribute to nonattainment or interfere with maintenance in a downwind state, the EPA has no basis to find that sources in the upwind state are emitting or would emit in violation of the CAA section 110(a)(2)(D)(i)(I) prohibition, absent new information to the contrary.

The EPA notes that the approval of a SIP or promulgation of a FIP implementing CAA section 110(a)(2)(D)(i)(I) means that a state's emissions are adequately prohibited for the particular set of facts analyzed under approval of a SIP or promulgation of a FIP. If a petitioner produces new data or information showing a different level of contribution or other facts not considered when the SIP or FIP was promulgated, compliance with a SIP or FIP may not be determinative regarding whether the upwind sources would emit in violation of the prohibition of CAA section 110(a)(2)(D)(i)(I). See 64 FR 28274 n.15; 71 FR 25336 n.6; *Appalachian Power*, 249 F.3d at 1067 (later developments can provide the basis for another CAA section 126(b) petition). Thus, in circumstances where a SIP or FIP addressing CAA section 110(a)(2)(D)(i)(I) is being implemented, the EPA will evaluate the CAA section 126(b) petition to determine if it raises new information that merits further consideration.

Several commenters disagreed with the EPA's interpretation of the

relationship between the good neighbor provision under CAA section 110(a)(2)(D)(i)(I) and section 126(b), contending that Congress intended CAA section 126(b) petitions to be a legal tool to address interstate problems separate and distinct from SIP and FIP actions under CAA section 110. Commenters cite to legislative history and the D.C. Circuit's opinion in *Appalachian Power* in support of their assertions that CAA section 126 is intended to remedy interstate transport problems notwithstanding the existence of CAA section 110. Commenters accordingly assert the EPA is incorrect in determining that its four-step approach under CAA section 110(a)(2)(D)(i)(I) is appropriate for evaluating under CAA section 126(b) whether an upwind source or group of sources will significantly contribute to nonattainment or interfere with maintenance of the 2008 and the 2015 ozone NAAQS in a petitioning downwind state.

The EPA has consistently acknowledged in prior actions under CAA section 126(b) that Congress created the good neighbor provision and CAA section 126 as two independent statutory processes to address one problem: Interstate pollution transport. *See, e.g.*, 83 FR 26666, 26675 (June 8, 2018) (proposal for this final action); 76 FR 69052, 69054 (November 7, 2011) (proposed action for the EPA's final action on New Jersey's CAA section 126(b) petition regarding SO<sub>2</sub> emissions from Portland Generating Station). As the commenters point out, courts have upheld the EPA's position that CAA sections 110(a)(2)(D)(i) and 126 are two independent statutory processes to address the same problem of interstate transport. *See GenOn REMA, LLC v. EPA*, 722 F.3d 513, 520–23 (3d Cir. 2013); *Appalachian Power*, 249 F.3d at 1047. However, the commenters misread the courts' holding regarding the EPA's interpretation of the interplay between the two provisions. Both the D.C. Circuit and Third Circuit spoke to the question of the *timing* of these processes—specifically, whether the EPA could act on a CAA section 126(b) petition in instances where the agency had not yet acted on a CAA section 110 SIP addressing interstate transport for the same NAAQS. Both courts upheld the EPA's position that it need not wait for the CAA section 110 process to conclude in order to act on a CAA section 126(b) petition, thus affirming that both statutory provisions are independent from one another from a timing perspective. Here, the agency has not deferred action on Delaware's

petitions regarding the 2015 ozone NAAQS, for which good neighbor SIPs are not due until October 2018, until its action on the good neighbor SIPs (for the named upwind states) has concluded. Therefore, by taking action in this instance on Delaware's section 126(b) petitions regarding the 2015 ozone NAAQS before action under section 110 has been concluded, the EPA believes it has given CAA section 126(b) independent meaning as intended by Congress and the courts.

The D.C. Circuit's opinion in *Appalachian Power*, which commenters specifically point to, further supports the EPA's interpretation taken in this action: That while the agency need not wait for the CAA section 110 process to conclude before taking action on a CAA section 126(b) petition, the EPA reasonably interprets the substantive requirements of the two provisions to be closely linked. The court in *Appalachian Power* specifically considered whether it was appropriate for the EPA to rely on findings made under the good neighbor provision in the NO<sub>x</sub> SIP Call rulemaking in granting several CAA section 126(b) petitions raising similar interstate transport concerns with regards to the same NAAQS. Petitioners in that case argued that the EPA should instead make a finding that “the specified stationary sources within a given state *independently met* [the statute's] threshold test for effect on downwind nonattainment.” 249 F.3d at 1049. The court found that by referring to stationary sources that emit pollutants “in violation of the prohibition of [CAA section 110(a)(2)(D)(i)],” Congress “clearly hinged the meaning of section 126 on that of section 110(a)(2)(D)(i).” *Id.* at 1050. The court, therefore, concluded that given CAA section 126's silence on what it means for a stationary source to violate CAA section 110(a)(2)(D)(i), the EPA's approach of relying on findings under CAA section 110(a)(2)(D)(i) was reasonable and, therefore, entitled to deference under *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 843 (1984). *Id.* The EPA's approach to addressing the CAA section 126(b) petitions considered the *Appalachian Power* case is consistent with the EPA's application of the four-step framework and consideration of findings made in the CSAPR Update in acting on Maryland's and Delaware's CAA section 126(b) petitions.

Commenters also contend that the EPA is erecting a “new barrier” to CAA section 126(b) petitions by requiring a petitioner to disprove the validity of the SIP or FIP in place for a source.

However, the commenters mischaracterize the EPA's position. As described, where a SIP or FIP is already in place to address the prohibition in CAA section 110(a)(2)(D)(i)(I), the EPA has already made a determination that sources subject to that SIP or FIP have been adequately addressed for purposes of interstate transport. A petitioner need not demonstrate that the EPA's original determination underlying the SIP or FIP is flawed. Rather, the EPA has recognized that circumstances may change after the EPA makes its determination under CAA section 110, in which case it is incumbent upon the petitioner in the first instance to provide information demonstrating that the named sources is unlawfully impacting the petitioning state in spite of the SIP or FIP, in light of newly available information. The EPA disagrees that this is a “new” position the agency is taking regarding the linkage between good neighbor SIPs and FIPs and CAA section 126(b) petition. As described earlier in this section, the EPA has interpreted CAA section 126(b) to impose this burden on petitioners in each section 126(b) petition addressed by the agency in the last two decades. *See, e.g.*, 64 FR 28274 n.15 (action on eight states' petitions for the 1979 ozone NAAQS); 71 FR 25336 n.6 (action on North Carolina's petition for the 1997 ozone NAAQS).

#### *B. Reasonableness of Applying the Four-Step Transport Framework for This Action*

As discussed in Section II of this notice, the EPA has consistently analyzed ozone transport with the understanding that nonattainment and maintenance concerns result from the cumulative air quality impacts of contributions from numerous anthropogenic sources across several upwind states (as well as from within the downwind state). Consistent with this understanding, the EPA has evaluated ozone transport based in part on the relative contribution of all anthropogenic sources within a state, as measured against to a screening threshold, and then identified particular source sectors and units for regulatory consideration.<sup>32</sup> This approach to evaluating ozone transport is reasonable because the statute's use of “significantly” as a modifier to “contribute” implies a relationship, *e.g.*,

<sup>32</sup> The EPA has used cost as a factor in its multi-factor approach for quantifying significant contribution from multiple contributing states. Cost is used in a relative (*i.e.*, least-cost abatement) approach that also requires examining individual source impact and reduction potential in the context of the larger universe of contributors.



the impact a source or collection of sources has relative to other relevant sources of that pollutant. Therefore, although CAA section 126(b) allows downwind states to petition the EPA regarding specific sources or groups of sources that they believe are contributing to the downwind air quality problems, the EPA believes it is reasonable and appropriate to evaluate the emissions from sources named in a petition in the context of all relevant anthropogenic sources of that pollutant to determine whether or not emissions from the named sources are in violation of the good neighbor provision.

The EPA notes that the four-step framework provides a logical, consistent, and systematic approach for addressing interstate transport for a variety of criteria pollutants under a broad array of national, regional, and local scenarios. Consequently, the EPA finds it reasonable to apply the same four-step transport framework used to evaluate regional ozone transport under the good neighbor provision in considering a CAA section 126(b) petition addressing the impacts of individual sources on downwind attainment and maintenance of the ozone NAAQS. As the four-step framework is applied to evaluate a particular interstate transport problem, the EPA can determine whether upwind sources are actually contributing to a downwind air quality problem; whether and which sources can be cost effectively controlled relative to that downwind air quality problem; what level of emissions should be eliminated to address the downwind air quality problem; and the means of implementing corresponding emission limits (*i.e.*, source-specific rates, or statewide emission budgets in a limited regional allowance trading program). The outcome of this assessment will vary based on the scope of the air quality problem, the availability and cost of controls at sources in upwind states, and the relative impact of upwind emission reductions on downwind ozone concentrations. For a more localized pollutant like SO<sub>2</sub>, the use of the four-step framework could result in a finding that emissions from a unit were significantly contributing to nonattainment, or interfering with maintenance, under the first three steps, which may lead the agency in step four to require unit-specific compliance requirements (such as an emission rate).<sup>33</sup>

<sup>33</sup> For an example of such a case, the EPA's action on a prior CAA section 126(b) petition regarding SO<sub>2</sub> emissions from the Portland Generating Station in Pennsylvania analyzed similar factors as those

The complexity of atmospheric chemistry and the interconnected, long-distance nature of ozone transport also demonstrates the appropriateness of the four-step framework. As a result of this complexity, including domestic and international as well as anthropogenic and background contributions to ozone and its precursors, it is less likely that a single source is entirely responsible for impacts to a downwind area. For example, several commenters assert that the emissions from all of the sources named in the Maryland petition contribute 0.656 ppb to the Edgewood receptor in Maryland—an amount that is insufficient to itself cause nonattainment. Thus, a determination regarding whether this impact is sufficient to significantly contribute to nonattainment or interfere with maintenance of the NAAQS—in light of other anthropogenic emission sources impacting a downwind area—is necessarily more complicated. However, the EPA evaluates within step three of the framework whether upwind sources have emissions that significantly contribute to nonattainment or interfere with maintenance of the ozone NAAQS based on various control, cost, and air quality factors, including the magnitude of emissions from upwind states, the number of potential emission reductions from upwind sources, the cost of those potential emission reductions, and the potential air quality impacts of emission reductions.<sup>34</sup> The EPA believes it is

outlined the four-step transport framework to evaluate whether the identified source was emitting in violation of the good neighbor provision. The EPA concluded that the petitioning downwind state had an air quality problem (step one) for the 2010 SO<sub>2</sub> NAAQS. The agency determined that emissions from the named source in the upwind state alone were sufficient not just to contribute to (step two), but to *cause* a violation of the NAAQS in the petitioning state. As such, the agency determined that the facility should be regulated because of the magnitude of its contribution and the relative lack of other contributing sources (step three). To address this impact, the EPA imposed federally enforceable source-specific rate limits to eliminate the source's significant contribution (step four). *See* Final Response to Petition From New Jersey Regarding SO<sub>2</sub> Emissions from the Portland Generating Station, 76 FR 69052 (November 7, 2011).

<sup>34</sup> "We believe it is important to consider both [cost and air quality] factors because circumstances related to different downwind receptors can vary and consideration of multiple factors can help EPA appropriately identify each state's significant contribution under different circumstances. [ . . . ] Using both air quality and cost factors allows EPA to consider the full range of circumstances and state-specific factors that affect the relationship between upwind emissions and downwind nonattainment and maintenance problems. For example, considering cost takes into account the extent to which existing plants are already controlled as well as the potential for, and relative difficulty of, additional emissions reductions. Therefore, EPA believes that it is appropriate to consider both cost and air quality metrics when

reasonable to consider these factors whether evaluating ozone transport in the context of a good neighbor SIP under CAA section 110 or a section 126(b) petition.

The EPA has already conducted such an analysis for all sources named in Delaware and Maryland's petitions via the CSAPR Update. The EPA determined that the upwind states named by the petitioners emitted in violation of the good neighbor provision with respect to downwind states. The EPA, therefore, found that EGUs in these states, including the named sources, collectively needed to make reductions at a cost level commensurate with operating and optimizing existing SCR controls (among other NO<sub>x</sub> reduction strategies included in the CSAPR Update). Based on the nature of ozone formation, the many receptors throughout the region, the many source sectors and numerous sources, and because EGUs had readily available low-cost and impactful emission reductions available, the EPA found that a limited allowance trading program would achieve emission reductions commensurate with applying these cost-effective controls. As discussed in more detail in Section IV of this notice, petitioners and commenters have not demonstrated, based on information available at this time, either that the particular sources named by petitioners should be required to make further emission reductions under the good neighbor provision in light of their contributions relative to other sources that are not named in the petitions, or that source-specific unit-level emission rates are necessary to ensure reductions are being achieved under the CSAPR Update. As further described in Section IV.B of this notice, the EPA's independent analysis finds that, contrary to the petitioners' and commenters' assertions, the CSAPR Update allowance trading program has been sufficient and successful in reducing regional emissions of ozone and emissions across the named EGUs.

For any analysis of a CAA section 126(b) petition regarding interstate transport of ozone, a regional pollutant with contribution from a variety of sources, the EPA reviews whether the particular sources identified by the petitioner should be controlled in light of the collective impact of emissions on

quantifying each state's significant contribution." Proposed Federal Implementation Plans To Reduce Interstate Transport of Fine Particulate Matter and Ozone, 75 FR 45210, 45271 (August 2, 2010) (CSAPR proposal) (describing potential disparities between upwind and downwind state contributions to identified air quality problems and between levels of controls between states).

air quality in the area, including emissions from other anthropogenic sources. Thus, review of the named sources in the Delaware and Maryland petitions provides a starting point for the EPA's evaluation, but does not—as the commenters suggest—complete the evaluation to determine whether the named sources emit or would emit in violation of the good neighbor provision.

#### IV. The EPA's Final Response to Delaware's and Maryland's CAA Section 126(b) Petitions

The EPA is finalizing denials of the Maryland petition and all four of the Delaware petitions. Section IV.A of this notice describes the EPA's determination that Delaware has not demonstrated that the sources named in their petitions emit or would emit in violation of the good neighbor provision such that they will significantly contribute to nonattainment or interfere with maintenance of the 2008 or 2015 ozone NAAQS in Delaware. Section IV.B of this notice describes the EPA's independent analysis of the sources named in both states' petitions and concludes based on such analysis that there is no basis to find that the named sources emit or would emit pollution in violation of the good neighbor provision with respect to the 2008 ozone NAAQS (Delaware and Maryland) or the 2015 ozone NAAQS (Delaware only). In this section, and in the RTC document included in the docket for this action, the agency explains the rationale supporting its final action and provides its response to significant public comments on the proposed action.

##### A. The EPA's Evaluation of Whether the Petitions Are Sufficient To Support a CAA Section 126(b) Finding

###### 1. Delaware's Petition Is Not Sufficient on Its Own Merit To Support a CAA Section 126(b) Finding

The EPA finds that Delaware's conclusions are not supported by the petitions' assessments based on several technical deficiencies. First, with respect to the 2008 ozone NAAQS, the EPA is finalizing its conclusion that Delaware does not provide sufficient information to indicate that there is a current or expected future air quality problem in the state. While the Delaware petitions identify individual exceedances of the ozone standard in the state between the 2000 and 2016 ozone seasons, this does not demonstrate that there is a resulting nonattainment or maintenance problem. Ozone NAAQS violations, as opposed to exceedances, are determined based on

the fourth-highest daily maximum ozone concentration, averaged across 3 consecutive years.<sup>35</sup> In contrast, exceedances represent, in the case of the 2008 and 2015 ozone NAAQS, an 8-hour measurement above the level of the NAAQS. Violations, rather than exceedances, are the relevant metric for identifying nonattainment and maintenance problems. A design value is a statistic that describes the air quality status of a given location relative to the level of the NAAQS. Thus, individual exceedances at monitors do not by themselves indicate that a state is not attaining or maintaining the NAAQS. In prior transport rulemakings, the EPA identified both nonattainment and maintenance receptors based on air quality model projections of measured design values. In the CSAPR Update, the EPA identified nonattainment receptors as those with an average projected design value above the NAAQS and with current measured nonattainment. The EPA identified maintenance receptors as those monitors with a "maximum" future design value above the NAAQS in order to take into account historic variability in air quality at the monitor. *See* 81 FR 74531.

Several commenters have argued that Delaware is not attaining or maintaining the 2008 ozone NAAQS because there are areas in Delaware that are designated nonattainment for that standard. However, a nonattainment designation, which was first issued for the 2008 ozone NAAQS in 2012, does not by itself indicate that a state is currently failing to attain or struggling to maintain the NAAQS, or that it will have problems attaining or maintaining the standard in the future. The courts have confirmed that the EPA's authority to find that a source or state is in violation of the good neighbor provision is constrained to circumstances where an actual air quality problem has been identified. *See EME Homer City*, 134 S. Ct. at 1608–09 (holding the EPA cannot require more emission reductions than necessary to address downwind air quality problems); *EME Homer City II*, 795 F.3d 118 at 129–30 (D.C. Cir. 2015) (holding state emission budgets invalid where air quality modeling projected no downwind air quality problems). Delaware has not demonstrated that there is a current or expected future air quality problem in the state, nor did any commenters provide evidence of a current or anticipated future violation of the 2008 ozone NAAQS. As discussed

<sup>35</sup> *See* 80 FR 65296 (October 26, 2015) for a detailed explanation of the calculation of the 3-year 8-hour average and the methodology set forth in 40 CFR part 50, appendix U.

in Section IV.B of this notice, the EPA's review of current and projected future air quality in Delaware indicates that the state is attaining and will maintain the 2008 ozone NAAQS. Accordingly, Delaware's petition provides insufficient evidence of a requisite air quality problem with respect to the 2008 ozone NAAQS within the state.

With respect to the 2015 ozone NAAQS, Delaware argues that if that NAAQS had been in effect from 2011 through 2016, Delaware monitors would have recorded more exceedances than they did under the 2008 ozone NAAQS. However, again, the identification of individual exceedances does not speak to whether there are current violations of the standard. Additionally, as discussed further in Section II of this notice, the EPA evaluates downwind ozone air quality problems for purposes of step one of the four-step framework using modeled *future* air quality concentrations for a year that considers the relevant attainment deadlines for the NAAQS, based on its interpretation of the term "will" in the good neighbor provision.<sup>36</sup> The petitions do not provide any analysis indicating that Delaware may violate or have difficulty maintaining 2015 ozone NAAQS in a year associated with the relevant attainment dates for that standard.

Several commenters allege that the EPA incorrectly identified technical deficiencies in Delaware's petition regarding whether there is an air quality problem in Delaware. The commenters also submitted additional data that they contend demonstrates current violations in the state. However, comments related to the 2008 ozone NAAQS either identified violating monitors outside of Delaware or identified further individual exceedances in Delaware without demonstrating that they contributed to a violating design value. The commenters have not submitted information that conclusively shows current or future violations of the 2008 ozone NAAQS within the state of Delaware. For the 2015 ozone NAAQS, the commenters identified current violating monitors in Delaware but did not identify any projected air quality violations in a future year associated with the relevant attainment dates. Commenters did not correct any of the technical deficiencies the EPA identified in Delaware's petitions. Thus, the EPA is concluding, as proposed, that the petition does not adequately identify a relevant air quality problem related to the 2008 or 2015 ozone NAAQS.

Second, with respect to step two of the four-step framework, material

<sup>36</sup> 81 FR 74517.

elements of Delaware's analysis regarding the contributions from the Brunner Island, Harrison, Homer City, and Conemaugh EGUs to air quality in Delaware are deficient and, therefore, the conclusions that the petitions draw are not supported by the technical assessment. As noted earlier, all four petitions rely upon air quality modeling that uses 2011 emissions to quantify the contribution from each of the four named sources to locations in Delaware on individual days in 2011. However, 2011 emissions are generally much higher than, and therefore not representative of, current or future projected emissions levels at these EGUs and in the rest of the region—levels that the EPA believes are most relevant to determining whether a source “emits or would emit” in violation of the good neighbor provision.<sup>37</sup> Thus, the 2011 modeling does not provide representative data regarding contributions that would result from either current or future emission levels from these EGUs. When evaluating a CAA section 126(b) petition, it is important and consistent with the language of the section to rely on current and relevant data known at the time the agency takes action. Were the EPA to act based on outdated or non-representative information solely because it was provided in a petition, that action could be arbitrary and unreasonable and could, for example, impose controls or emission limitations that are not appropriately tailored to the nature of the problem at the time of the EPA's final action or at the time when such controls or limitations would actually be implemented. This could result in unnecessary over-control (or under-control) of emissions, beyond (or short of) what is required to address the good neighbor provision, in violation of the Supreme Court's holding in *EME Homer City*, 134 S. Ct. at 1608–09.

Further, the analyses provided by Delaware regarding the alleged impacts of the four sources on downwind air quality include some information on the frequency and magnitude of ozone impacts, but the information provided does not account for the form of the

<sup>37</sup> As an example of how emissions have changed between 2011 and a recent historical year, the EPA notes that Pennsylvania's 2017 EGU NO<sub>x</sub> ozone season emissions were 79 percent below 2011 levels. One of the named sources, Brunner Island, is located in Pennsylvania and reduced its individual ozone season NO<sub>x</sub> emissions by 88 percent in 2017 relative to 2011 levels. (<https://www.epa.gov/ampd>). Additional emissions data from 2011 and a recent historical year is included in the docket, which also shows that 2011 emissions are generally higher than emissions in recent years. See 2011 to 2017 NO<sub>x</sub> Comparisons, Ozone Season, available in the docket for this action.

2008 or 2015 ozone standards—which indicates that a NAAQS violation occurs when the fourth highest daily maximum value in a calendar year at a specific monitor exceeds the standard—and, thus, is not informative of whether there is a nonattainment issue in the state. Specifically, Delaware does not identify the numeric modeled and/or measured ozone levels on the same days identified in Delaware's petitions with modeled impacts.<sup>38</sup> For example, Delaware's Homer City petition identifies modeled contributions from emissions at that source to three downwind monitoring sites in Delaware on July 18, 2011. However, the petition fails to identify whether there were measured and/or modeled exceedances of the ozone NAAQS on that particular day at those sites. Delaware's Harrison and Brunner Island petitions identify the days the contributions were modeled to occur, but not the specific monitoring sites where Delaware claims emissions from these sources impact air quality. Moreover, these two petitions do not provide information on whether the contributions were to design values that actually exceed the ozone NAAQS. Delaware's Conemaugh petition identifies 2011 contributions on days when some Delaware monitors exceeded the 2008 NAAQS, but the petition does not specify which monitors were impacted on those days. The petition therefore does not provide information to show that the modeled contributions occurred at monitoring sites that were exceeding either the 2008 or 2015 ozone NAAQS. Commenters did not provide additional information clarifying these deficiencies.

For the reasons described in this section, Delaware's analyses in its four petitions do not allow the EPA to conclude that there is a current or future nonattainment or maintenance problem in Delaware based on violations of the NAAQS, nor that the named sources are improperly impacting downwind air quality on days when such violations

<sup>38</sup> Existing EPA analyses of interstate ozone pollution transport focus on contributions to high ozone days at the specific downwind receptor in order to evaluate the impact on nonattainment and maintenance at the receptor. For example, in the CSAPR Update modeling, ozone contributions were calculated using data for the days with the highest future year modeled ozone concentrations. For the 2008 ozone NAAQS, only the highest measured ozone days from each year are considered for the calculation of ozone design values (the values that determine whether there is a measured NAAQS violation). Measured ozone values that are far below the level of the NAAQS do not cause an exceedance or violation of the NAAQS. For this reason, only ozone contributions to days that are among the highest modeled ozone days at the receptor are relevant to determining if a state or source is linked to downwind nonattainment or maintenance issues.

would be expected. Therefore, the EPA does not have a basis to grant Delaware's petition with respect to either the 2008 or 2015 ozone NAAQS based on data and analyses provided in the petitions.

## 2. The EPA's Analysis of the Technical Sufficiency of Maryland's Petition

The EPA is not finalizing its proposed finding that Maryland's petitions are technically deficient, but is finalizing the denial based on the EPA's independent assessment there are no additional cost-effective reductions relative to the CSAPR Update for the sources named in Maryland's petition. This topic is discussed in more detail in Section IV.B of this notice.

### B. The EPA's Independent Analysis of the Petitions Consistent With the CSAPR Update

As discussed in Section III.A of this notice, the EPA may decide to conduct independent analyses when evaluating the basis for a potential CAA section 126(b) finding or when developing a remedy if a finding is made. Because the CSAPR Update recently evaluated interstate ozone pollution transport, including considering the air quality and EGU emissions described in the Delaware and Maryland 126(b) petitions, the EPA evaluated the petitions and comments received on the proposal in light of the agency's existing regulatory program, and the underlying analysis on which it is based. This constitutes the EPA's independent analysis for certain aspects of the petitions. The agency also evaluated additional technical information that became available after the CSAPR Update was finalized to independently evaluate other aspects of the petitions.

This section begins by explaining the relationship between the CSAPR Update and the EPA's independent analysis of the petitions. The subsequent subsections discuss the EPA's rationale for denying the petitions with respect to the named sources.

#### 1. CSAPR Update as Context

The EPA promulgated the CSAPR Update to address the good neighbor provision requirements for the 2008 ozone NAAQS. 81 FR 74504. The final CSAPR Update built upon previous regulatory efforts in order to address the collective contributions of ozone pollution from 22 states in the eastern United States to widespread downwind air quality problems. As was also the case for the previous rulemakings, the EPA evaluated the nature (*i.e.*, breadth and interconnectedness) of the ozone problem and NO<sub>x</sub> reduction potential

from EGUs, including those sources named in the Delaware and Maryland CAA section 126(b) petitions.

Of particular relevance to this action, the EPA determined in the CSAPR Update that emissions from the states identified in Maryland's petition were linked in steps one and two of the four-step framework to maintenance receptors for the 2008 ozone NAAQS in Maryland based on air quality modeling projections to 2017. 81 FR 74538 through 74539. With respect to Delaware, the CSAPR Update modeling revealed no monitors in the state with a projected average or maximum design value above the level of the 2008 ozone NAAQS in 2017.<sup>39</sup> Thus, the EPA in step one of the four-step framework did not identify any downwind air quality problems in Delaware with respect to the 2008 ozone NAAQS and, therefore, did not determine that emissions from any of the states identified in the state's four petitions would be linked to Delaware.

For states linked to downwind air quality problems in Maryland, the agency identified certain emissions from large EGUs as significantly contributing to nonattainment and/or interfering with maintenance of the NAAQS based on cost and air-quality factors. Considering these factors, the EPA found there were cost-effective emission reductions that could be achieved within upwind states at a level of control stringency available at a marginal cost of \$1,400 per ton of NO<sub>x</sub> reduced. This level of control stringency represented ozone season NO<sub>x</sub> reductions that could be achieved in the 2017 analytic year and included the potential for operating and optimizing existing SCR post-combustion controls; installing state-of-the-art NO<sub>x</sub> combustion controls; and shifting generation to existing units with lower NO<sub>x</sub> emission rates within the same state. 81 FR 74551. The CSAPR Update quantified an emission budget for each state based on that level of control potential. The EPA found that these emission budgets were necessary to achieve the required emission reductions and mitigate impacts on downwind states' air quality in time for the July 2018 moderate area attainment date for the 2008 ozone NAAQS.

The CSAPR Update finalized enforceable measures necessary to achieve the emission reductions in each state by requiring power plants in covered states, including the sources

identified in Maryland and Delaware's petitions, to participate in the CSAPR NO<sub>x</sub> Ozone Season Group 2 allowance trading program, with more detailed assurance provisions applying to each covered state to ensure that they will be required to collectively limit their emissions, beginning with the 2017 ozone season. The CSAPR trading programs and the EPA's prior emission trading programs (e.g., the NO<sub>x</sub> Budget Trading Program associated with the NO<sub>x</sub> SIP Call) have provided a proven, cost-effective implementation framework for achieving emission reductions. This implementation approach was shaped by previous rulemakings and reflects the evolution of these programs in response to court decisions and practical experience gained by states, industry, and the EPA.

As discussed in more detail later, the EPA has considered the CSAPR Update and related technical information in evaluating the section 126(b) petitions. This includes a review of the air quality modeling conducted for the CSAPR Update to evaluate projected nonattainment and maintenance concerns in each petitioning states in steps one and two of the four-step framework. The EPA has also considered the control strategies evaluated and implemented in the CSAPR Update to conclude, in step three, that the EPA has already implemented emission reductions associated with operation of existing SCRs at the named sources and that the EPA has already concluded that the operation of existing SNCR at two other named sources is not a cost-effective control strategy under the good neighbor provision.

## 2. The EPA's Step One and Two Analyses for Delaware and Maryland

As part of the EPA's independent analysis, the agency considered Delaware's and Maryland's petitions in light of recent agency analysis which applied steps one and two of the four-step framework. The EPA found that the named sources are not contributing to nonattainment or interfering with maintenance of Delaware's air quality for either the 2008 or 2015 ozone NAAQS, and that the sources named in Maryland's petition warranted further analysis of significant contribution to nonattainment and interference with maintenance for the 2008 ozone NAAQS in step three.

### a. The EPA's Step One Analyses for Delaware

While the EPA, as discussed in Section IV.A of this notice, finds that Delaware's petitions do not on their

own merits adequately establish the presence of a current or future nonattainment or maintenance problem in Delaware, the EPA also independently examined whether there is an air quality problem under the 2008 and 2015 ozone NAAQS (step one). As described in the following sections, the EPA finds that the named sources in Delaware's petitions are not, and will not be, emitting in violation of the good neighbor provision with respect to Delaware for either the 2008 or 2015 ozone NAAQS. The EPA also conducted a further independent assessment of the sources named in Delaware's petitions with respect to step three of the framework, discussed later in this notice, which further supports the EPA's denial of the Delaware petitions.

### (1) The EPA's Independent Analysis Regarding Delaware's Step One Claims With Respect to the 2008 Ozone NAAQS

The EPA first looked to modeling conducted in 2016 that projects ozone concentrations at air quality monitoring sites in 2017, which was conducted for purposes of evaluating step one of the four-step framework for the 2008 ozone NAAQS as part of the CSAPR Update.<sup>40</sup> This modeling indicated that Delaware was not projected to have any nonattainment or maintenance receptors in 2017 with respect to the 2008 ozone NAAQS. *See* 83 FR 26678. Furthermore, the EPA examined Delaware's 2014–2016 design values, and found that no areas in Delaware had a design value that violated the 2008 ozone NAAQS. *See id.* An examination of the recently released 2015–2017 design values showed the same result.<sup>41</sup> Accordingly, the EPA has no basis to conclude that any of the sources named by Delaware in its petitions are linked to a downwind air quality problem in the state with regard to the 2008 ozone NAAQS. In the absence of a downwind air quality problem, the EPA has no authority to regulate upwind sources to address air quality in Delaware with respect to the 2008 ozone NAAQS.

<sup>39</sup> See Air Quality Modeling Technical Support Document for the Final Cross-State Air Pollution Rule Update (August 2016). Available at [https://www.epa.gov/sites/production/files/2017-05/documents/air\\_quality\\_modeling\\_tsd\\_final\\_csapr\\_update.pdf](https://www.epa.gov/sites/production/files/2017-05/documents/air_quality_modeling_tsd_final_csapr_update.pdf).

<sup>40</sup> See 2017 Design Value Reports, available at [https://www.epa.gov/sites/production/files/2018-07/ozone\\_designvalues\\_20152017\\_final\\_07\\_24\\_18.xlsx](https://www.epa.gov/sites/production/files/2018-07/ozone_designvalues_20152017_final_07_24_18.xlsx).

<sup>39</sup> See Air Quality Modeling Technical Support Document for the Final Cross-State Air Pollution Rule Update. Available at <https://www.epa.gov/airmarkets/air-quality-modeling-technical-support-document-final-cross-state-air-pollution-rule>.

(2) The EPA's Independent Analysis Regarding Delaware's Step One Claims With Respect to the 2015 Ozone NAAQS

Additionally, the EPA independently examined whether there will be a downwind air quality problem in Delaware with regard to the 2015 ozone NAAQS. The modeling conducted in support of the CSAPR Update shows one monitor—monitor ID 100051003 in Sussex County—with a maximum 2017 projected design value (which the EPA has typically used to help identify maintenance receptors) above the 2015 ozone NAAQS.<sup>42</sup> Measured data show that two monitors exceeded the 2015 ozone NAAQS based on the 2014–2016 design values,<sup>43</sup> and three monitors show exceedances of the 2015 ozone NAAQS based on the 2015–2017 design values.<sup>44</sup> However, as described in Section II.B of this notice, the EPA evaluates downwind ozone air quality problems for the purposes of Step one of the four-step framework using modeled future air quality concentrations for a year that EPA selects in consideration of the relevant attainment deadlines for the NAAQS. Thus, the 2017 modeling data and the recent measured data are not necessarily indicative of a downwind air quality problem that would necessitate the control of upwind sources to address air quality in Delaware with respect to the 2015 ozone NAAQS.

Recent analyses projecting emission levels to a future year indicate that no air quality monitors in Delaware are projected to have nonattainment or maintenance problems with respect to the 2015 ozone NAAQS by 2023, which is the last year of ozone season data that will be considered in order to determine

<sup>42</sup> In prior transport rulemakings, the EPA identified both nonattainment and maintenance receptors based on air quality model projections of measured design values. In the CSAPR Update, the EPA identified nonattainment receptors as those with an average projected design value above the NAAQS and with current measured nonattainment. The EPA identified maintenance receptors as those monitors with a “maximum” future design value above the NAAQS in order to take into account historic variability in air quality at the monitor. See 81 FR 74531.

<sup>43</sup> See 2016 Design Value Reports, available at <https://www.epa.gov/air-trends/air-quality-design-values#report>. The official designations for these areas and information relied upon for those designations are contained in the EPA's designation actions for the 2015 ozone NAAQS. See 82 FR 54232 (November 16, 2017) and the docket for Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards, EPA-HQ-OAR-2017-0548, and accompanying technical support documents.

<sup>44</sup> See 2017 Design Value Reports, available at [https://www.epa.gov/sites/production/files/2018-07/ozone\\_designvalues\\_20152017\\_final\\_07\\_24\\_18.xlsx](https://www.epa.gov/sites/production/files/2018-07/ozone_designvalues_20152017_final_07_24_18.xlsx).

whether downwind nonattainment areas classified as moderate have attained the standard by the relevant 2024 attainment date.<sup>45</sup> Therefore, consistent with the EPA's interpretation of the term “will” in the good neighbor provision discussed in Section III of this notice, available future year information does not indicate Delaware will have air quality concerns by the attainment date for the 2015 ozone NAAQS that EPA has determined is relevant for purposes of this analysis. Accordingly, the EPA does not have a basis to regulate upwind sources to address air quality in Delaware with respect to the 2015 ozone NAAQS.

(3) Responses to Comments Regarding the EPA's Independent Analysis for Step One Under the 2008 and 2015 Ozone NAAQS

Commenters asserted that the EPA's conclusion that Delaware does not have current or future nonattainment or maintenance problems for the 2008 and 2015 ozone NAAQS is unreasonable in light of technical information in the record they claim demonstrates otherwise. Commenters further state that New Castle County, Delaware, was designated nonattainment as part of the multistate Philadelphia nonattainment area under both the 2008 and 2015 ozone NAAQS, and that the most recent design values for three monitors in New Castle County exceeded the 70 ppb 2015 ozone standard.

As an initial matter, the EPA disagrees with the way the commenters characterize an air quality problem in relation to CAA section 126(b). The EPA's statutory authority extends to addressing emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS. Commenters' focus on individual high ozone days does not account for the form of the 2008 or 2015 ozone standards (under which a violation occurs when the fourth-highest reading in a calendar year at a specific monitor exceeds the NAAQS) and thus is not informative of whether there is a nonattainment or maintenance issue. Thus, the petitioners and commenters raise contentions that are ultimately misaligned with the EPA's logical approach of identifying downwind air quality problems for purposes of CAA sections 110(a)(2)(D)(i)(I) and 126(b) in a manner that is consistent with the form of the standard.

<sup>45</sup> See Information on the Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I) (March 27, 2017), available in the docket for this proposed action.

As described earlier, the EPA has evaluated air quality monitoring and modeling data for the 2008 ozone NAAQS, and found no current or anticipated future violations of the 2008 ozone NAAQS (in the form of the standard) at receptors within the state of Delaware. While the EPA evaluated modeling data for future projections of air quality for both the 2008 and 2015 ozone NAAQS consistent with the forward-looking nature of the good neighbor provision, monitoring data regarding current violations is a relevant analytic tool for the 2008 ozone NAAQS considering the attainment date for the standard has already passed. However, because the relevant attainment date for the 2015 ozone NAAQS has not yet passed, it is appropriate to evaluate future anticipated air quality in step one of determining whether sources must be controlled under the good neighbor provision. The EPA evaluated air quality modeling data for receptors located within the state of Delaware and found that, while there are monitors that are currently violating the 2015 ozone NAAQS, the data indicate no future air quality problem for this NAAQS by the relevant 2024 attainment date for that standard. Thus, although commenters state that current ambient monitoring data in Delaware for 2018 shows that three of Delaware's monitors (all in New Castle County) are exceeding the 2015 ozone NAAQS, the commenters have not provided any basis for the EPA to conclude that Delaware will have an air quality problem relative to the 2015 ozone NAAQS in the future year that it has selected as relevant for this analysis.

Additionally, commenters challenge the EPA's conclusion that Delaware does not have an air quality problem for the 2008 ozone NAAQS by pointing out that the Bellefonte site in Delaware has recorded 8-hour daily maximum values which exceed even the 1997 ozone NAAQS. These exceedances at the Bellefonte site are not relevant to actual or projected nonattainment or maintenance issues. Although there may be some exceedances of the 2008 ozone NAAQS at the Bellefonte monitor, the EPA does not have information to indicate that the fourth highest daily ozone value averaged across 3 consecutive years will exceed the 2008 ozone NAAQS at this site. The commenter has not provided information indicating that the monitor is currently violating the 2008 NAAQS.<sup>46</sup> As noted in this section,

<sup>46</sup> The most current official design value at this monitor is 71 ppb. See 2017 Design Value Reports, available at <https://www.epa.gov/sites/production/>

individual exceedances at monitors do not by themselves indicate that a state is not attaining or maintaining the NAAQS. Thus, we have no basis to conclude there are any air quality problems with respect to the 2008 NAAQS in Delaware in a manner relevant for step one of the four-step transport framework. Thus, because all monitors were projected to attain and maintain the standard in the CSAPR Update modeling and are attaining the standard in the most recent monitoring period, the EPA has no basis to conclude that the sources in the upwind states emit or would emit in violation of the good neighbor provision in Delaware for the 2008 NAAQS.

Commenters point out that monitors in the Philadelphia nonattainment area, located outside of the state of Delaware, are violating both the 2008 and 2015 ozone NAAQS. The commenters assert that because Delaware's New Castle County is included with other counties which make up the Philadelphia nonattainment area for both the 2008 and 2015 ozone NAAQS, Delaware's attainment of the ozone NAAQS is tied to the attainment of the other monitors in the nonattainment area.

The EPA disagrees with commenter's suggestion that non-attaining monitoring data for nearby receptors outside the petitioning state support a CAA section 126(b) finding for Delaware, even if such monitors are located in a multistate nonattainment area that includes the petitioning state. The specific language of CAA section 126(b) does not say that a state may petition the EPA for a finding that emissions from a source, or group of sources, is impacting downwind receptors in a state other than the petitioning state. In addition, the legislative history for this provision suggests the provision was meant to address adverse air impacts only in the petitioning state.<sup>47</sup> Given the broader context of CAA section 126, the EPA

reasonably interprets CAA section 126(b)'s petition authority to be limited to states and political subdivisions seeking to address interstate transport of pollution impacting downwind receptors within their geographical borders.

Additionally, the context of CAA section 126 as a whole suggests these provisions are meant to moderate interstate transport concerns between affected states and upwind sources, not between any third party (even if such party is another state) and upwind sources. CAA section 126(a), for example, requires upwind sources to provide notification of certain potential air quality impacts to nearby states which may be affected by the source, not to *all* states. Furthermore, CAA section 126(b) petitions may only be filed by states and political subdivisions. By contrast, other provisions that contain petition authority under the CAA expressly allow for any person to petition the EPA (e.g., CAA section 505(b)(2)'s authority for any person to petition the EPA to object to the issuance of a Title V petition). The more restrictive text in CAA section 126(b) suggests that Congress intended access to the petition process to be narrowly available to states and political subdivisions directly affected by upwind pollution.

While the acknowledgement of multistate nonattainment areas in the CAA reflects Congress's understanding that pollution crosses state boundaries, that does not indicate that Congress clearly authorized all states in a multistate nonattainment area to petition EPA under CAA section 126(b) related to violating monitors outside their state. Portions of Delaware were included in the Philadelphia nonattainment area because the EPA determined that those portions were themselves contributing to the air quality problems in Pennsylvania.<sup>48</sup> Nothing in the CAA suggests that section 126(b) was intended to relieve states like Delaware of the specific planning obligations associated with its inclusion in an area designated nonattainment. To the extent a state has concerns about the impacts of upwind pollution on out-of-state monitors in a shared multistate nonattainment area, these issues can be addressed under other statutory processes. For example, every state has an obligation to submit

a transport SIP under CAA section 110(a)(2)(D)(i)(I) that contains provisions adequate to prohibit emissions activity that contribute significantly to nonattainment or interfere with maintenance of the NAAQS in another state, which may also include a multistate nonattainment area if such area is being impacted by upwind emissions activity.

Furthermore, the commenters' assertion that monitors in the Philadelphia nonattainment area are currently measuring exceedances of the 2015 ozone NAAQS does not change the EPA's conclusion that Delaware has no air quality problem under the 2015 ozone NAAQS when looking toward a relevant future year. As described in Section IV.A of this notice, the EPA evaluates downwind ozone air quality problems for the purposes of step one of the four-step framework using modeled future air quality concentrations for a year that considers the relevant attainment deadlines for the NAAQS. Recent analyses projecting emission levels to a future year indicate that no air quality monitors in Delaware are projected to have nonattainment or maintenance problems with respect to the 2015 ozone NAAQS by 2023.<sup>49</sup> Therefore, consistent with the EPA's interpretation of the term "will" in the good neighbor provision, available future year information does not suggest Delaware will have air quality concerns by the relevant attainment date for the 2015 ozone NAAQS. Under step one of the transport framework, since there are no projected nonattainment or maintenance receptors in Delaware, the EPA concludes that it does not have sufficient evidence to determine that the upwind states and sources are significantly contributing to nonattainment or interfering with maintenance of the 2015 ozone NAAQS in Delaware.<sup>50</sup>

Several comments challenged the EPA's reliance on air quality modeling projections for 2023 to indicate that Delaware will not have an air quality problem under the 2015 ozone NAAQS. First, commenters asserted that even if attainment of the 2015 ozone NAAQS was assured for the Philadelphia nonattainment area by 2023, this

*files/2018-07/ozone\_designvalues\_20152017\_final\_07\_24\_18.xlsx.*

<sup>47</sup> When section 126 was added to the CAA, the Senate's amendment implementing the basic prohibition on interstate pollution stated that: "Any State or political subdivision may petition the Administrator for a finding that a major stationary source in another state emits pollutants which would adversely affect the air quality in the petitioning State." (emphasis added). Clean Air Act Amendments of 1977, H.R. 95-564, 95th Cong. at 526 (1977). The House concurred with the Senate's amendment to CAA section 126, with changes to other portions of the amendment, but did not indicate changes to this sentence. *Id.* The lack of stated changes to this component of the Senate's original amendment suggest that Congress did not intend for the scope of the petitioning authority to be expanded to parties other than a state or political division in which downwind air quality is adversely affected.

<sup>48</sup> See Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE Nonattainment Area Final Designations for the 2015 Ozone National Ambient Air Quality Standards Technical Support Document. Available at [https://www.epa.gov/sites/production/files/2018-05/documents/phila\\_tsd\\_final.pdf](https://www.epa.gov/sites/production/files/2018-05/documents/phila_tsd_final.pdf).

<sup>49</sup> See Supplemental Information on the Interstate Transport State Implementation Plan Submissions for the 2008 Ozone National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I) (October 2017), available in the docket for this proposed action.

<sup>50</sup> The EPA notes that even if the Philadelphia area monitors were relevant to the EPA's analysis of Delaware's petition, EPA's analysis also shows that those monitors are not projected to have nonattainment or maintenance problems with respect to the 2015 ozone NAAQS by 2023.

analytic year is unacceptable because the agency should consider the August 2, 2021, marginal area attainment date as informative to the selection of an analytic year. The EPA does not agree that it is required to analyze air quality in a future year aligned with the attainment date for nonattainment areas classified as Marginal for the 2015 ozone NAAQS. Although the *North Carolina* decision held that the EPA must consider attainment dates in downwind states when establishing compliance timeframes for emission reductions in upwind states, the decision did not speak to which attainment date should influence the EPA's evaluation when there are several potentially relevant attainment dates. As the decision explains, the good neighbor provision instructs the EPA and states to apply its requirements "consistent with the provisions of" title I of the CAA. *North Carolina*, 531 F.3d. at 911–12. The EPA notes that this consistency instruction follows the requirement that plans "contain adequate provisions prohibiting" certain emissions in the good neighbor provision. The EPA, therefore, interprets the requirements of the good neighbor provision to apply in a manner consistent with the designation and planning requirements in title I that apply in downwind states and, in particular, the timeframe within which downwind states are required to implement specific emissions control measures in nonattainment areas relative to the applicable attainment dates. *See id.* at 912 (holding that the good neighbor provision's reference to title I requires consideration of both procedural and substantive provisions in title I).

Ozone nonattainment areas classified as Marginal are not generally required to implement specific emission controls at existing sources. *See* CAA section 182(a).<sup>51</sup> Existing regulations—either local, state, or federal—are typically a part of the reason why "additional" local controls are not needed to bring the area into attainment. As described in the EPA's record for its Classifications and Attainment Deadlines rule for the 2015 ozone NAAQS, history has shown that the majority of areas classified as Marginal for prior 8-hour ozone standards attained the respective standards by the Marginal attainment date (*i.e.*, without being re-classified to a Moderate designation). 83 FR 10376. As part of an historical lookback, the

EPA calculated that by the relevant attainment date for areas classified as Marginal, 85 percent of such areas attained the 1979 1-hour ozone NAAQS, and 64 percent attained the 2008 ozone NAAQS. *Id.* at Response to Comments, section A.2.4.<sup>52</sup> Based on these historical data, the EPA expects that many areas classified Marginal for the 2015 ozone NAAQS will attain by the relevant attainment date as a result of emission reductions that are already expected to occur through implementation of existing local, state, and federal emission reduction programs. To the extent states have concerns about meeting their attainment deadline for a Marginal area, the CAA under section 181(b)(3) provides authority for them to voluntarily request a higher classification for individual areas, if needed. Where the ozone nonattainment area is classified as Moderate or higher, the responsible state is required to develop an attainment plan, which generally includes the application of various control measures to existing sources of emissions located in the nonattainment area, consistent with the requirements in Part D of title I of the Act. *See* generally CAA section 182.

Thus, given that downwind states are generally not required to impose additional controls on existing sources in a Marginal nonattainment area, the EPA believes that it would be inconsistent to interpret the good neighbor provision as requiring the EPA to evaluate the necessity for upwind state emission reductions based on air quality modeled in a future year aligned with the Marginal area attainment date. Rather, the EPA believes it is more appropriate and consistent with the nonattainment planning provisions in title I to evaluate downwind air quality and upwind state contributions, and, therefore, the necessity for upwind state emission reductions, in a year aligned with an area classification in connection with which downwind states are also required to implement controls on existing sources—*i.e.*, with the Moderate area attainment date, rather than the Marginal one. With respect to the 2015 ozone NAAQS, the Moderate area attainment date will be in the summer of 2024, and the last full year of monitored ozone-season data that will inform attainment demonstrations is, therefore, 2023.

Even assuming that a year aligned with the Marginal area attainment date could be an appropriate analytic year for the EPA to consider in evaluating future

air quality in Delaware, the commenters have not submitted any information that indicates there will be an air quality problem under the 2015 ozone NAAQS in Delaware in the Marginal attainment-date year of 2021, nor did the petition provide any. As discussed in Section III of this notice, the petitioner bears the burden of establishing, as an initial matter, a technical basis for the specific finding requested and has not done so here.

The projected ozone design values for 2023 represent the best available data regarding expected air quality in Delaware in a future attainment year. These data were developed over the course of multiple years of analytic work, reflecting extensive stakeholder feedback and the latest emission inventory updates. The EPA assembled emissions inventory and performed air quality analytics in 2016 and released corresponding data and findings in a Notice of Data Availability (NODA) in January of 2017. Subsequent to stakeholder feedback on the NODA, the EPA was able to further update its inventories and air quality modeling and release results for 2023 future analytic year in October 2017. There are no comparable data available for earlier analytic years between 2017 and 2023 that have been through an equally rigorous analytic and stakeholder review process, and, thus, the 2023 data are the best data available currently for the EPA to evaluate Delaware's claims at this time.

Commenters additionally contend that the 3-year deadline for implementing a remedy under CAA section 126(c) suggests that the use of 2023, which is 5 years in the future, as an analytic year for purposes of evaluating Delaware's CAA section 126(b) petitions is inappropriate. The EPA disagrees. The EPA's evaluation of air quality in 2023 is a necessary step to determine whether the sources named in Delaware's petitions are in violation of the good neighbor provision, and the choice of 2023 as an analytic year does not preclude the implementation of a remedy in an earlier year if the necessary finding is made. While CAA section 126 contemplates that a source or group of sources may be found to have interstate transport impacts, it cannot be determined whether such source or sources are in violation of the good neighbor provision and whether controls are justified without analyzing emissions from a range of sources influencing regional-scale ozone transport, including sources not named in the petitions. In particular, as discussed in Section III of this notice, the EPA evaluates air quality in a year

<sup>51</sup> New source review (NSR) and conformity are still required for marginal areas, but their purpose is to ensure that new emissions don't interfere with attainment as opposed to reducing existing emissions.

<sup>52</sup> Available at <https://www.regulations.gov/document?D=EPA-HQ-OAR-2016-0202-0122>.

when emission reductions would be expected to be implemented under the good neighbor provision. Analysis of a future year aligned with anticipated compliance also ensures that any emission reductions the EPA may require under that provision are not in excess of what would be necessary to address downwind nonattainment and maintenance problems. The 2023 analytic year that the EPA has chosen for evaluating ozone transport with respect to the 2015 ozone NAAQS was selected because it aligns the downwind attainment dates and ensures that emission reductions required by that date will not over-control upwind state emissions because it accounts for changes in upwind state emissions and downwind state ozone concentrations expected between now and 2023. Additionally, even if the EPA were to determine based on 2023 as an analytic year that the named sources are projected to be in violation of the good neighbor provision, the EPA could still implement a remedy that complies with the earlier timeline set out under CAA section 126(c). Therefore, the EPA's reasonable choice of 2023 as an analytic year for evaluating Delaware's petition does not in and of itself preclude implementation of a remedy at an earlier date.

Commenters further assert that since Delaware's and Maryland's requested remedies are to require already existing controls to operate mean the EPA's justification for selecting the 2023 analytic year is incorrect. The EPA disagrees. First, the EPA believes it is appropriate for the EPA to consider air quality in 2023 because it is aligned with the attainment date for the 2015 ozone NAAQS. As discussed earlier, if there is no future air quality problem relative to this NAAQS, it would not be appropriate for EPA to require additional upwind emission reductions under CAA sections 110 or 126. Moreover, as discussed later in this notice, control optimization at the identified sources has already been addressed in the CSAPR Update, and emission reductions associated with the proposed control technology are already being realized. Thus, the EPA does not agree that the timeframe for implementation of a control strategy that is already in place should guide its selection of a future analytic year for this NAAQS.

Rather than focusing on optimization, the selection of an appropriate year for any additional mitigation measures necessary to eliminate upwind contribution would have to accommodate the corresponding technologies that could deliver

incremental reductions. Therefore, the EPA identified an appropriate future analytic year that would allow for mitigation measures not yet considered in the CSAPR Update for sources across the region. These are technologies that were deemed to be infeasible to install for the 2017 ozone season. In establishing the CSAPR Update emissions budgets, the EPA identified but did not analyze the following two EGU NO<sub>x</sub> control strategies in establishing the CSAPR Update emissions budgets because implementation by 2017 was not considered feasible: (1) Installing new SCR controls; and (2) installing new SNCR controls. For a variety of labor, material, engineering, and grid-related considerations, the EPA believes that 2023 would likely be an appropriate year to allow for these mitigation measures. See 81 FR 33730 (July 17, 2018); 83 FR 31915 (July 10, 2018).

And fourth, commenters assert that the 2023 modeling is flawed because it relies on optimistic assumptions that EGU controls would operate when there is no enforceable requirement for sources to do so under the existing allowance trading program. The commenter states that in the 2023 air quality modeling, the EPA incorrectly assumed individual units would make emission reductions. The EPA has made both a conceptual case as to why those reductions will be achieved through the CSAPR Update existing allowance trading program, and an evidence-based case that reductions based on control optimization already achieved in 2017. Not only were the anticipated reductions realized generally from EGUs in the upwind states identified by the petitioners, but reductions were also made by the fleet of individual sources (on a seasonal and daily basis) identified by the commenter. The reasonableness and feasibility of the EPA's 2023 EGU emission projections regarding the control-optimization reductions under a trading program are illustrated by the first year of CSAPR Update compliance emission levels in 2017. EGU emissions in 2017 dropped by 21 percent from 2016 levels and were seven percent below the collective CSAPR Update budgets for the 22 affected states. The EPA's 2023 projections for the 22 states were 10 percent below the collective CSAPR Update budgets, meaning in just one year, states have already achieved the majority of the EGU reductions anticipated by the EPA for 2023, suggesting that sources in these states are on pace to actually be below that level by 2023. For the five states

addressed in the petitions, ozone-season NO<sub>x</sub> EGU emissions dropped from 136,188 tons in 2016 to 92,189 tons in 2017 for EGUs greater than 25 MW. This reflects a 32 percent reduction in just one year.<sup>53</sup>

Data from 2017, the first year of ozone-season data that would be influenced by the CSAPR Update compliance requirements, are consistent with the EPA's assumption that the allowance trading program would drive SCR operation on a fleet-wide level. The EPA began its engineering analysis to project 2023 EGU emissions with 2016 monitored and reported data. For the units with existing SCRs that were operating below 0.10 lb/mmBtu in 2016, the EPA assumed that their operation would remain unchanged in 2023. For the units with existing SCRs that were operating above 0.10 lb/mmBtu in 2016 (totaling 82,321 tons of emissions in that year), the EPA assumed that SCRs would be optimized under a CSAPR Update scenario to 0.10 lb/mmBtu on average for 2023. This collective 2023 emissions estimates for these latter units were, therefore, adjusted down to 40,590 tons. In 2017, the very first year of CSAPR Update implementation, collective emissions from these units were 41,706 tons. This 2017 value is already very close to EPA's 2023 estimated value, and supports the EPA's assumption that these units would optimize SCR performance at 0.10 lb/mmBtu on average.

The EPA observes that this assumption is also reasonable for the units identified in the petitions. When examining the group of sources named in the petitions, the 2017 average ozone-season NO<sub>x</sub> emission rate for SCR-controlled units was reduced by nearly half during the first year of the program relative to 2016 and 2015 levels. Moreover, preliminary data for the second quarter of 2018 suggest this pattern of lower emission rates at SCR-controlled units under the CSAPR Update is continuing.<sup>54</sup> Many of the analyses provided by commenters to suggest the group of named sources were not operating controls are based in the 2015–2016 time-period, before the CSAPR Update was implemented, when hourly, daily, and seasonal emissions were higher because controls were not being consistently run at optimized levels. Both CSAPR and the CSAPR

<sup>53</sup> See Engineering Analysis—Unit File. Available at [ftp://ftp.epa.gov/EmisInventory/2011v6/v3platform/reports/2011en\\_and\\_2023en/](ftp://ftp.epa.gov/EmisInventory/2011v6/v3platform/reports/2011en_and_2023en/).

<sup>54</sup> Preliminary 2018 data reflects first two months of 2018 ozone season available at the time of finalizing this action. See EPA's Clean Air Markets Division data, available at <https://ampd.epa.gov/ampd/>.



Update include assurance provisions that ensure that EGUs in each covered state will be required to collectively limit their emissions. These provisions include an assurance level for each state that serves as a statewide emissions cap. This assurance level is the sum of the state emission budget plus a variability limit equal to 21 percent of the state's ozone-season budget. This means that collectively EGU emissions in each state cannot exceed 121 percent of the state budget level without incurring penalties. The assurance levels are designed to help ensure each covered state in a region-wide trading program still reduces emissions—as opposed to purely relying on allowance purchases—from historical levels while allowing for the inherent variability in generation and emissions from year-to-year given changes in power sector market conditions. 76 FR 48212. These assurance levels help ensure that the emission reductions associated with the optimization of existing controls, on which the CSAPR Update budgets were based, or commensurate emission reductions from elsewhere in the state continue to be observed going forward. Therefore, even with fleet turnover and a growing allowance bank, emissions will continue to be limited within the state.

Finally, the EPA also disagrees to the extent the commenter claims that EGU emissions will increase, rather than decrease, in future years of the CSAPR Update implementation or that the market for allowance prices would have to price credits much higher in order to ensure that the emission reductions associated with control optimization will continue. This claim is not consistent with observed historical emission patterns over successive years of an allowance trading program's implementation. It is also not consistent with forward looking emissions projections in power sector models.<sup>55</sup> There are a variety of policy and market forces at work beyond CSAPR allowance prices that are anticipated to continue to drive generation to shift from higher emitting to lower emitting sources. These include changes such as sustained lower natural gas prices that make lower emitting natural gas combined cycle units more economic to build and dispatch, state energy policy and technology advancements which have made renewable energy (e.g., solar and wind) more competitive compared to higher emitting fossil-fuel fired

<sup>55</sup> See results from EPA's power sector modeling platform v6. Available at <https://www.epa.gov/airmarkets/results-using-epas-power-sector-modeling-platform-v6>.

generation, and the aging of the coal fleet which is leading many companies to conclude that a significant number of higher emitting plants are reaching the end of their useful economic life. The EPA's experience implementing prior allowance trading programs shows that emissions from covered sources generally trend downwards (regardless of allowance price) as time extends further from the initial compliance year.<sup>56</sup> Both the Acid Rain Program and CSAPR SO<sub>2</sub> allowance banks grew in 2017 from their 2016 levels, indicating that sources are collectively adding to the bank by emitting below state budgets rather than drawing down the bank because of the availability of low-cost allowances. This illustrates that the EPA's assumptions underlying its projection of 2023 ozone-season NO<sub>x</sub> levels for EGUs are reasonable and appropriate.

#### b. The EPA's Step One and Two Analysis for Maryland

With respect to steps one and two of the four-step framework for the Maryland petition, as the state noted in its petition and as the EPA acknowledged in the proposal, the EPA conducted an analysis in the CSAPR Update regarding the air quality impact of anthropogenic emissions from the five upwind states named in the state's petition on downwind air quality in Maryland with respect to the 2008 ozone NAAQS. In the CSAPR Update, the EPA found Maryland has a maintenance receptor for the 2008 NAAQS (step one), and that the upwind states that Maryland identifies in its petition are "linked" above the contribution threshold of one percent of the NAAQS (step two).<sup>57</sup> However, as discussed in Section III of this notice, the conclusion that a state's emissions met or exceeded this threshold only indicates that further analysis is appropriate to determine whether any of the upwind state's emissions meet the statutory criteria of significantly contributing to nonattainment or interfering with maintenance (step three). The EPA's independent step three analysis of the sources named in

<sup>56</sup> 2014 Program Progress, Clean Air Interstate Rule, Acid Rain Program, and Former NO<sub>x</sub> Budget Trading Program. EPA. Available at [https://www.epa.gov/sites/production/files/2017-09/documents/2014\\_full\\_report.pdf](https://www.epa.gov/sites/production/files/2017-09/documents/2014_full_report.pdf).

<sup>57</sup> See CSAPR Update, 81 FR 74504 (October 26, 2016). The EPA notes that based on 2015–2017 data, Maryland's highest ozone design value is 75 ppb at monitor ID 240251001, which is currently not violating the 2008 ozone NAAQS. See 2017 Design Value Reports, available at [https://www.epa.gov/sites/production/files/2018-07/ozone\\_designvalues\\_20152017\\_final\\_07\\_24\\_18.xlsx](https://www.epa.gov/sites/production/files/2018-07/ozone_designvalues_20152017_final_07_24_18.xlsx).

Maryland's petition is discussed in the following sections.

The state of Maryland submitted a comment challenging the EPA's decision to assess Maryland's petition only for the 2008 ozone NAAQS, asserting that the EPA failed to acknowledge that EPA's extended delay in acting on the CAA section 126(b) petition has impacted Maryland's designation under the 2015 ozone standard. Additionally, the comment asserts that since Maryland has a maintenance problem for the 2008 ozone NAAQS, and the states where the petitioned units are located are linked to that maintenance problem, applying the EPA's analysis under the 2008 ozone NAAQS to the more stringent 2015 ozone NAAQS necessarily demonstrates that the named sources are also linked to the same monitor under the 2015 ozone standard.

Maryland's petition did not allege that a source or group of sources emit or would emit in violation of CAA section 110(a)(2)(D)(i)(I) for the 2015 ozone NAAQS, but rather merely alleged that emissions reductions resulting from Maryland's requested remedy could influence the 2015 ozone designations. As noted in the EPA's proposed action on Maryland's petition, the cover letter of the petition specifically requests that the agency make a finding "that the 36 electric generating units (EGUs) . . . are emitting pollutants in violation of the provisions of Section 110(a)(2)(D)(i)(I) of the CAA with respect to the 2008 ozone National Ambient Air Quality Standards," and the petition throughout refers only to the 2008 ozone NAAQS when identifying alleged air quality problems in Maryland and the impacts from upwind sources. Maryland acknowledges that it did not submit a 126(b) petition requesting a finding with respect to the 2015 ozone NAAQS. Furthermore, because the EPA's proposal focused on the claims related to the 2008 ozone NAAQS raised in the petition, the EPA's proposed action on the petition did not provide notice to the public of any proposed conclusions or analysis that the public would need to appropriately comment on any determinations with respect to the 2015 ozone NAAQS, nor did it inform the public that any action might be taken with regard to a finding of a good neighbor violation with regard to the 2015 ozone NAAQS under Maryland's petition. Accordingly, taking final action on the petition in the context of the 2015 ozone NAAQS in response to Maryland's comments cannot be construed as a logical outgrowth of the proposal.

Commenters further assert that it is improper for the agency to rely on 2023 ozone modeling projections to claim that Maryland does not have attainment problems with respect to the 2008 ozone NAAQS. This comment misconstrues the EPA's basis for denying Maryland's petition. Maryland's petition only requested a specific finding with respect to the 2008 ozone NAAQS. As described earlier in this section, the EPA determined that Maryland was projected to have a downwind air quality concern with respect to the 2008 ozone NAAQS under step one of the framework, and that the named upwind states are linked to Maryland in step two based on the 2017 modeling conducted for the CSAPR Update. The EPA did not evaluate whether Maryland has an air quality problem in 2023 in assessing its petition.

In conclusion, under steps one and two of the transport framework, the EPA has modeled a maintenance problem in 2017 at the Harford County receptor for the 2008 ozone NAAQS following the implementation of the CSAPR Update and the upwind states named in the petition are linked to that receptor in EPA's 2017 contribution modeling. See 81 FR 74533. The EPA concludes that it is appropriate to assess the additional steps of the transport framework for the sources named in Maryland's petition. This analysis is further described in this section.

### 3. The EPA's Step Three Analysis With Respect to EGUs Equipped With SCRs Named in Delaware and Maryland's Petitions

In the previous section, the EPA evaluated the petitions with regard to steps one and two of the transport framework, and the agency found that Delaware does not and is not expected to have a requisite air quality problem under step one for either the 2008 or 2015 ozone NAAQS, and, therefore, the EPA does not have a basis to impose additional emission limitations on the named upwind sources. While the EPA is finalizing a determination that Delaware's petitions should be denied based on the EPA's conclusions in step one of the four-step framework, the EPA is also evaluating the EGUs named in the Delaware petitions in this step three analysis because we believe that evaluation provides an additional independent basis for denial. Regarding the Maryland petition, application of steps one and two for the named upwind states indicated that it is appropriate to assess the additional steps of the transport framework for the named sources. Accordingly, this section discusses the step three analysis

for the sources named in both the Delaware petitions (as an additional basis for denial) and the Maryland petition (as the sole basis for denial).

Generally, the EPA's analysis in step three considers cost, technical feasibility, and air quality factors in a multi-factor test to determine whether any emissions from states linked to downwind air quality problems in steps one and two will significantly contribute to nonattainment and/or interfere with maintenance of the NAAQS, and, therefore, must be eliminated pursuant to the good neighbor provision. Because the CSAPR Update was recently finalized to address regional interstate ozone pollution transport, the EPA considered its step three analysis of the sources named in the section 126(b) petitions in light of the existing CSAPR Update analysis and in light of additional analysis evaluating the impact of the CSAPR Update implementation.<sup>58</sup> Thus, in this section, the EPA explains how it identified and evaluated cost and air quality factors to evaluate the named sources in a multifactor test consistent with step three of the framework as applied in the CSAPR Update. The crucial factors the EPA considered include whether there are further NO<sub>x</sub> emission reductions beyond what was already finalized in the CSAPR Update available at the specific sources named in the petitions, the cost of any such reductions, and the potential air quality improvements that would result from any such reductions. The EPA first analyzes this step with respect to those units identified in the Delaware and Maryland petitions that are equipped with SCR. The EPA then considers two named units that are equipped with SNCR, and finally, the one named unit that has neither SCR nor SCNR, but that has the ability to shift its fuel combustion to lower-emitting options.

#### a. Analysis of SCR for NO<sub>x</sub> Mitigation

Three of Delaware's petitions identify EGUs (Conemaugh, Harrison, and Homer City) that are already equipped with SCRs, and 34 of the 36 EGUs identified in Maryland's petition are also equipped with SCRs.<sup>59</sup> In

<sup>58</sup> All of the EGUs named in the petitions are subject to FIPs promulgated as part of the CSAPR Update that require EGUs in each state, including the EGUs named in the petitions, to participate in the CSAPR NO<sub>x</sub> Ozone Season Group 2 allowance trading program, subject to statewide emission budgets with limited interstate trading.

<sup>59</sup> These facilities are located in Indiana (Alcoa Allowance Management Inc., Clifty Creek, Gibson, IPL—Petersburg Generating Station), Kentucky (East Bend Station, Elmer Smith Station, Tennessee Valley Authority Paradise Fossil Plant), Ohio (Killen Station, Kyger Creek, W. H. Zimmer

establishing each state's CSAPR Update EGU NO<sub>x</sub> ozone season emission budgets, the agency quantified the emission reductions achievable from all NO<sub>x</sub> control strategies that were feasible to implement within one year<sup>60</sup> and cost effective at a marginal cost of \$1,400 per ton of NO<sub>x</sub> removed. This level of NO<sub>x</sub> control stringency was established explicitly to reflect the ability of sources in regulated states to turn on existing, idled SCR—*i.e.*, the operational behavior that the section 126(b) petitions generally ask EPA to mandate. In addition to turning on and optimizing existing idled SCR controls, this level of NO<sub>x</sub> control stringency encompassed optimizing NO<sub>x</sub> removal by existing, operational SCR controls; installing state-of-the-art NO<sub>x</sub> combustion controls; and shifting generation to existing units with lower NO<sub>x</sub> emission rates within the same state. 81 FR 74541. Thus, the CSAPR Update emission budgets already reflect emission reductions associated with turning on and optimizing existing SCR controls across the 22 CSAPR Update states, including at the EGUs that are the subject of the Maryland and Delaware petitions. This is the same control strategy identified in the petitions as being both feasible and cost effective. The EPA is determining that, as a result of the CSAPR Update, all identified cost-effective emission reductions have already been implemented for the 2008 ozone NAAQS with respect to the sources named in the Delaware and Maryland petitions that are already equipped with SCR.

Delaware and Maryland's petitions contend that, based on data available at the time the petitions were filed, the named sources are operating their NO<sub>x</sub> emissions controls at low efficiency levels, or are not operating them at all at certain times. Delaware and Maryland, therefore, ask the EPA to impose unit-specific 30-day emission rate limits or other requirements to ensure the controls will be continually operated. The EPA acknowledges that in years prior to implementation of the CSAPR Update in 2017, the named sources may have operated as petitioners describe. However, implementation of the emission budgets promulgated in the CSAPR Update represents the most recent data regarding these EGUs' operations. In the years before 2017, the EPA observed

Generating Station), Pennsylvania (Bruce Mansfield, Cheswick, Homer City, Keystone, Montour), and West Virginia (Harrison Power Station, Pleasants Power Station).

<sup>60</sup> The CSAPR Update was signed on September 7, 2016—approximately 8 months before the beginning of the 2017 ozone season on May 1.

similar emissions behavior for a substantial number of EGUs across the eastern United States (*i.e.*, this was not limited to just the named sources here) and suspected that the additional emissions resulting from the inefficient operation of controls were detrimentally affecting air quality for a substantial number of areas. Consequently, through a notice-and-comment rulemaking and after evaluating and responding to numerous stakeholder comments, the EPA finalized the CSAPR Update. That rulemaking found EGUs in the named states had emissions that could be cost effectively eliminated in order to address interstate ozone transport under the good neighbor provision. Therefore, the EPA imposed limits on statewide EGU emissions commensurate with running optimized SCR controls (and certain other control strategies). These emission reductions resulted in substantial modeled improvements in air quality throughout the region and had substantial benefits for the specific downwind areas identified in the petitions.

The EPA received several comments suggesting that emissions data indicate that the EPA's determination that the CSAPR Update would address interstate transport from these sources is flawed. Accordingly, the EPA has evaluated emissions data across the CSAPR Update region, including from the states and sources named in the petitions. As

further described later, the EPA's analysis of such data demonstrates that, following implementation of the CSAPR Update, EGUs in the CSAPR Update region generally and the named EGUs specifically have in fact achieved emission reductions commensurate with the operation of existing SCRs. Consequently, the EPA finds that CSAPR Update implementation is generally achieving the NO<sub>x</sub> reductions identified in the section 126(b) petitions for mitigation at these sources. The EPA, therefore, determines that these sources neither emit nor would emit in violation of the good neighbor provision.

The EPA determines that this conclusion is appropriate with regard to the claims raised under the 2008 ozone NAAQS in both states' petitions. Moreover, because the cost-effective strategy of optimizing existing controls relative to the 2008 ozone NAAQS has already been implemented via the CSAPR Update for the sources Delaware named for its claims regarding the 2015 NAAQS, the EPA also determines there are no additional cost-effective control strategies available to further reduce NO<sub>x</sub> emissions at these sources to address that most recent standard.

(1) Current Emissions Data Show NO<sub>x</sub> Reductions Under the CSAPR Update

Based on observed emissions levels and emission rates in 2017, implementation of the CSAPR Update

has resulted in actual emissions reductions at the named sources and/or commensurate reductions at other sources in the same state, both seasonally and on a daily basis. In other words, because the strategy of optimizing existing controls has already been implemented for these sources through the CSAPR Update, there is no information suggesting there are additional control strategies available to further reduce NO<sub>x</sub> emissions at these sources to address for the 2008 ozone-NAAQS.

(a) Seasonal Reductions Under the CSAPR Update

The recent historical observed and reported data regarding emissions from the sources named in the petitions, and the states they are located in, illustrate the effectiveness of the EPA's allowance trading approach to reducing NO<sub>x</sub> emissions. While much of the data presented in the petitions focused on emissions and emission rates prior to 2017, the 2017 ozone-season data illustrates that, during the first year of the CSAPR Update Rule: (1) The average emission rate improved nearly 50 percent on average at the 34 units identified in the petitions as having SCR controls, (2) EGU emissions declined by 46 percent at these 34 units, and (3) EGU emissions declined by 32 percent collectively in the states where these facilities are located.

TABLE 1—OZONE-SEASON NO<sub>x</sub> EMISSION RATES AND EMISSIONS PRE- AND POST-CSAPR UPDATE

	2015	2016	2017
Average Ozone-Season Emission rate from 34 identified units (lb/mmBtu) .....	0.254	0.200	0.115
Total Emissions from 34 identified units (tons) .....	55,443	46,023	24,894
Total Emissions from states named in the petitions (tons)* .....	154,413	136,188	92,189

\*IN, KY, OH, PA, and WV.

Table 1 shows the average emission rate across the 34 units, the total seasonal emissions from these units, and the total seasonal emissions from all units greater than 25 MW in the indicated states. These data illustrate that, in 2017, the control optimization and the emission reductions anticipated from the CSAPR Update are being realized from the 34 units with SCR controls. Moreover, the EPA examined control operation behavior at these units on a more granular basis and determined that these operating patterns prevailed on a smaller time scale as well. The EPA looked at the average *daily* emission rate and emissions from this group of 34 sources with SCR controls for 2015, 2016, and 2017 ozone seasons. The time-series figures in the

docket for this action show that 2017 daily ozone values were significantly lower on both metrics relative to 2015 and 2016.<sup>61</sup> This finding supports the EPA's contention that no further regulatory actions are necessary to ensure emission reductions consistent with operation of these controls at this time.

The fact that these particular sources are mitigating emissions using the same technology and for the same standard identified in the petitions is not the sole

<sup>61</sup> The EPA has examined emission rate and tonnage reduction from the petitioner-identified sources with SCR-optimization potential prevails on a daily basis in addition to a seasonal basis and added them to the docket for this action. *See* Daily NO<sub>x</sub> Emissions Rates for Identified SCR-Controlled Sources for Each Day of the Ozone-Season. Available in the docket for this action.

fact on which EPA bases its determination that the measures adopted in the CSAPR Update have addressed reduction potential from these sources. Because the EPA implemented those reductions requirements through a limited trading program with state emission caps, it is also possible that some of the emission reductions corresponding to this identified mitigation measure are realized elsewhere in the state and have a similar beneficial impact on downwind air quality within the petitioning states. The EPA recognizes that a regional trading program with embedded state emission caps provides the flexibility to achieve emission reductions either at the sources through the identified mitigation measures or at

sources elsewhere in the state but disagrees with the petitioners' notion that this undermines the ability of the program to achieve meaningful emissions reductions from particular sources. The latest and best available data demonstrate that reductions are occurring at those sources. Moreover, even in the event of any single-unit variation in performance, the overall reductions are occurring within the same airshed due to the fact that state budgets and assurance levels were set to ensure those reduction levels statewide and regionwide. Thus, the design of the CSAPR Update accommodates emissions reductions based on unit-specific control optimization and observed data affirm its success at realizing this end.

In evaluating these petitions, the EPA analyzed ozone-season emission rates from all coal-fired units in the contiguous U.S. equipped with SCR and found that, based on 2017 emissions data reflecting implementation of the CSAPR Update, 261 of 274 units had ozone-season emission rates below 0.20 lb/mmBtu, indicating they were likely operating their post-combustion controls through most of the ozone season, including every unit with SCR named in Delaware's and Maryland's petitions.<sup>62</sup> On average, the 274 units were operating at an average emission rate of approximately 0.088 lb/mmBtu. Nine of the 13 units with 2017 emission rates above 0.20 lb/mmBtu are not located in the states where petitioners identified sources.<sup>63</sup> Of the remaining four, one retired in 2018, and the other three have preliminary 2018 ozone season data (for reported months of May and June) below 0.20 lb/mmBtu. Consequently, the EPA finds that on average, SCR-controlled units are operating their SCRs throughout the season when operating conditions make it feasible, and that the petitioner's assertion of the likelihood of not operating controls is not borne out in the most recently available data.

The CSAPR Update regional trading program has resulted in an

approximately 50 percent improvement in emission rate performance at SCR-controlled units at the sources named in these petitions. The statewide EGU emissions limits help make those reductions permanent within the state and region. Therefore, the EPA has addressed upwind emission reductions commensurate with SCR optimization in the ozone season from the named sources.

Commenters state that the EPA's use of a fleet-wide average to demonstrate operation of SCRs at these units inappropriately ignores the ability of the named sources to achieve better emission rates. However, in the CSAPR Update, the EPA determined that, based on an aggregation of unit-level emission rates, an average fleet-wide rate emission rate of 0.10 lb/mmBtu would represent the optimized operation of SCR controls that were not at that time being operated or optimized. 81 FR 74543. In concluding that this rate would be appropriate for calculating emission reduction potential from implementation of this control strategy, the EPA recognized that some units would have optimized rates above that level and some below that level (consistent with the petitioner's own comments and analysis). Therefore, in using a fleet-wide average for setting regional and state emission limits, the EPA considered and relied on unit-level data. Nevertheless, the 0.10 lb/mmBtu emission rate used to reflect control optimization for the 2008 ozone NAAQS for the identified sources in the CSAPR Update was not reopened for comment in this action.

(b) Daily Reductions Under the CSAPR Update

Commenters disagree with the EPA's conclusion that data demonstrating that SCRs are being operated in the upwind states and at the named sources *seasonally* is representative of implementation of cost-effective controls. It is the commenter's position that for existing controls to be cost effective, they must be maintained and operated in accordance with good pollution control practices whenever feasible. Commenters assert that if shorter-term NO<sub>x</sub> emission rate data are evaluated, the SCR controls do not appear to have been operated in accordance with good pollution control practices at all times the units were operating.

The petitions have alleged that short-term limits are necessary to prevent units from turning controls off intermittently on days with high ozone in order to harvest additional power that would otherwise be used for control

operation. As described at proposal, the EPA examined the hourly NO<sub>x</sub> emissions data reported to the EPA and did not observe many instances of units selectively turning down or turning off their emission control equipment during hours with high generation.<sup>64</sup> SCR-controlled units generally operated with lower emission rates during high generation hours, suggesting SCRs generally were in better operating condition—not worse, let alone idling—during those days/hours. In other words, the EPA compared NO<sub>x</sub> rates for EGUs for hours with high energy demand and compared them with seasonal average NO<sub>x</sub> rates and found very little difference. Thus, the data do not support the notion that units are reducing SCR operation on high demand days. Moreover, the auxiliary power used for control operation is small—typically less than one percent of the generation at the facility—and it is, therefore, unlikely that sources would cease operation of controls for such a limited energy savings. Instead, the data indicate that increases in total emissions on days with high generation are 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, rather than reduced functioning of control equipment. The EPA notes that if, in fact, the emission reductions expected from the operation of control equipment at these facilities were no longer being realized in the future, this final action denying Delaware's and Maryland's petitions would not preclude either state from submitting another CAA section 126(b) petition for these sources raising new information not already considered herein. The EPA is not, however, pre-determining what action may be appropriate on any such future petition.

Commenters have observed that individual units equipped with SCR have operated in 2017 ozone season with rates higher than 0.2 lb/mmBtu on select days, suggesting that their SCR controls have been idled. The commenters identified the number of days this occurred at individual units (one unit at Homer City had the highest frequency of 15 days out of the 153-day ozone season, one unit at Harrison had two days, and Conemaugh had no days) and acknowledged that there may be engineering reasons for units to decrease or cease operation of controls on individual days (e.g., to avoid damaging or plugging of the SCR or taking a forced outage where a breakdown leaves the

<sup>62</sup> As described in the CSAPR Update, optimized operation of combustion controls and SCR typically results in NO<sub>x</sub> emission rates of 0.10 lb/mmBtu or below. Combustion controls alone typically result in rates down to 0.20 lb/mmBtu but can at times achieve results in the range of 0.14 lb/mmBtu. Therefore, units equipped with SCR that have emission rates above 0.20 lb/mmBtu are likely not significantly utilizing their SCR. The optimized rate for any particular unit depends on the unit-specific characteristics, such as boiler configuration, burner type and configuration, fuel type, capacity factor, and control characteristics such as the age, type, and number of layers of catalyst and reagent concentration and type.

<sup>63</sup> See Discussion of Short-term Emission Limits Final Rule, available in the docket for this action.

<sup>64</sup> *Id.*

unit unavailable to produce power). The EPA also observes that there appear to be engineering limitations to operating SCR at low hourly utilization rates (e.g., at hourly capacity factors below about 25 percent, the EPA has observed limited operation of SCRs).<sup>65</sup> While Maryland acknowledges these engineering challenges to SCR performance in low capacity factor conditions, it is not clear how the suggested monthly unit-specific emission rate would accommodate those challenges. In particular, ozone season capacity factors (which reflect the actual output relative to potential output) have decreased over time, dropping from a heat-input weighted capacity factor of 77 percent in 2006 to a value of 67 percent in 2017, suggesting that units may spend fewer hours operating at the high hourly utilization factors associated with the most-efficient SCR operation and lowest emission rates.<sup>66</sup> In addition, units are now operating more frequently at hourly utilization rates at or below 40 percent in 2017 compared to 2006.

An individual unit may have high emissions from idling an SCR or SNCR or for burning coal (rather than natural gas) on a specific hour or day in the 2017 ozone season, or that the absence of daily emission limits leaves open the possibility that a unit at the facility may have high emissions on days that Maryland or Delaware monitors record ozone exceedances. However, in the context of regional ozone pollution, the EPA has concluded that reducing NO<sub>x</sub> emissions regionally and seasonally while allowing flexibility in compliance is effective at reducing downwind peak ozone concentrations. Because of the regional nature of interstate ozone transport, in which emissions are transported hundreds of miles over the course of hours or days, the EPA has focused on reducing aggregate NO<sub>x</sub> emissions, an approach that has successfully led to reductions in ozone concentrations across the east coast. As such, an emission event in one hour or on one day at a particular unit is not sufficient to suggest that the source is not adequately controlled over the course of the ozone season.

Petitioners and commenters asserted that that additional emission reductions are achievable (comparing the

methodology and rates put forward by with what would be expected and/or realized under the CSAPR Update) and that these emission reductions would be cost effective.

Commenters assert that the maximum 30-day emission rates requested in Maryland's petition are (1) representative of well-run controls, (2) flexible to allow for multiple operating conditions and even sub-optimal operation of controls on some days, and (3) consistently achievable based on the units' own reported emissions data that indicates the units achieved this emission rate 123 times out of 123 attempts in their past-best ozone season. However, these assertions are flawed because the commenters' assessment included historical data that, through notice-and-comment rulemaking in the CSAPR Update, EPA determined were not representative of current or future operating conditions given SCR component degradation and maintenance schedules and changes in unit operation (i.e., to lower capacity factors). For example, EPA's analysis of historical SCR performance in the CSAPR Update evolved through comments on the proposal, ultimately evaluating data from 2009 through 2015 because in this time period SCR controls were operated year-round starting in the first compliance period for the CAIR NO<sub>x</sub> annual program (and subsequently CSAPR NO<sub>x</sub> annual programs) rather than only seasonally as was done in years before 2009.<sup>67</sup> Further, the petitioners and commenters assert that the agency can apply historical SCR operating data to the future in a manner that is at odds with the EPA's conclusions reached through notice-and-comment in the CSAPR Update. For example, petitioners and commenters assert that the agency can consider data from the year of each unit's lowest historical average NO<sub>x</sub> rate. In the

<sup>67</sup> The EPA's analysis of SCR NO<sub>x</sub> rates for the final CSAPR Update differed from the proposal. The evaluation focused on a more recent timeframe for analysis: 2009 through 2015, compared to 2003 through 2014. The EPA believed this change was reasonable because there were significant shifts in the power sector since 2003, particularly with respect to power sector economics (e.g., lower natural gas prices in response to shale gas development) and environmental regulations (e.g., CAIR and CSAPR). Because of these changes, the EPA considers it reasonable to evaluate SCR performance focusing on more recent historical data that better represent the current landscape of considerations affecting the power sector. The EPA chose 2009 because that is the first year of CAIR NO<sub>x</sub> annual compliance. For further discussion, see page 522 of EPA's Response to Comments on the CSAPR Update available in the docket for that rule at EPA-HQ-OAR-2015-0500-0572 and EPA's EGU NO<sub>x</sub> Mitigation Strategies Final Rule TSD available in the docket for that rule at EPA-HQ-OAR-2015-0500-0554.

CSAPR Update, the agency took comment on the representativeness of historical data in terms of future ongoing achievable NO<sub>x</sub> rates. Stakeholder comment led the EPA to ultimately to focus on the third lowest ozone season rate from 2009 through 2015 to ensure that its selected rates represented efficient but routine SCR operation (i.e., when the performance of the SCR was not simply the result of being new, or having a highly aggressive catalyst replacement schedule, but was the result of being well-maintained and well-run). These topics are as described further in the CSAPR Update RTC. Thus, the petitioners and commenters rely on inadequate arguments, based in part on analyzing unit behaviors over an inappropriate time-period and by overstating the potential NO<sub>x</sub> reductions achievable at the sources. Considering the information received and EPA's assessment thereof, the EPA has not received sufficient information that necessitates updating or otherwise changing the agency's position with respect to the EPA's previous findings regarding cost-effective reductions at SCRs.

In addition, to the extent that commenters argue that the emission levels assumed for these units in the CSAPR Update (or alternatively as measured in 2017) are marginally higher than what commenters claim would be readily achievable, the air quality impacts of these differences on the design value are likely to be small. Specifically, Maryland indicates that the state anticipates an air quality benefit of 0.656 ppb attributable to the named units going from idled controls to Maryland's definition of "optimized" control operation. This is comparable to the estimated improvement in the CSAPR Update from the engineering base case to the control case of \$1,400/ton, wherein the EPA estimated a 0.6 ppb improvement in air quality at the for Harford, Maryland receptor.<sup>68</sup> Subtracting the improvement estimated by the commenter from the value estimated by the EPA yields a marginal difference of 0.056 ppb.<sup>69</sup> Thus, the petitions do not provide system-wide impacts analysis showing that their requested unit-specific rate requirements, which would reduce sources' emissions only slightly below already achieved levels, would result in

<sup>68</sup> See CSAPR Update Final Ozone AQAT "Summary DVs" tab, comparing cell L12 and O12 (along with cell O28).

<sup>69</sup> While there are differences in modeling platforms, emission totals, and temporalization of the emissions within the modeling platforms that would affect this comparison, this provides some estimate of the difference.

<sup>65</sup> Hourly utilization factor is defined here as the ratio of the hourly heat input to the maximum rated hourly heat input rate. See Discussion of Short-term Emissions Limits Final Rule, available in the docket for this action.

<sup>66</sup> The EPA selected 2006 because a commenter identified 2006 as the best year of operation for a number of units and 2005 did not appear to have as comprehensive a data set.

regional reductions and air quality improvements as related to the EPA's analysis regarding the good neighbor provision.

(2) Reliance on Allowance Trading To Address Section 126(b) Petitions

One commenter asserts that evaluating Maryland's CAA section 126(b) petition for control for a specific source by relying on an average fleet-wide rate without any consideration of the emission rate that specific source is capable of achieving undermines the intent of section 126(b) of the CAA, which gives a state the authority to ask the EPA to set emissions limits for specific sources of air pollution.

As described earlier, while CAA section 126(b) addresses the same substantive prohibition as CAA section 110(a)(2)(D)(i), CAA section 126(b) provides an independent process for downwind states to address interstate transport. Commenters state that whether a specific source emits or would emit in violation of the good neighbor provision is primarily a factual determination based on monitored data and modeling, not a legal conclusion based on whether a source is meeting an emissions budget under a SIP or FIP.

The EPA disagrees with those commenters that argue that the EPA can only consider unit-level emission rates when evaluating CAA section 126(b) petitions and must ignore prior actions and reductions addressing interstate transport that pertain to the same NAAQS, the same mitigation measures, and the same units. If the EPA has already identified, mandated, and received commensurate emission reductions from those sources (or sources in a shared geographic region determined to be equally relevant to the downwind monitor) based on control optimization through a trading program, then ignoring that related action could lead to miscounting emission reductions from a mitigation technology for a given NAAQS. While the EPA does not disagree that these types of considerations need to be revisited when evaluating potential reductions to meet future updated NAAQS (just as they have been revisited in previous updates to the NAAQS) for which SIPs and FIPs have yet to be promulgated (e.g., the 2015 ozone NAAQS), the agency disagrees that they are irrelevant considerations for other actions related to upwind contribution for the 2008 NAAQS for which actions have been promulgated.

According to commenters, evaluating Delaware's and Maryland's section 126(b) petitions based on whether the named sources participate in a trading

program is a strained interpretation of section 126(b) because it fails to account for CAA section 126(c)'s reference to source-specific remedies, including emissions limitations. The EPA's position on why it is appropriate to evaluate a CAA section 126(b) under the four-step framework and CSAPR Update is described in Section III of this notice. Additionally, the EPA disagrees with commenters that taking account of compliance with an emissions budget as part of an analysis of a CAA section 126(b) petition is inconsistent with the nature of CAA section 126(c)'s specific alternative remedies. Under CAA section 302(k), an "emission limitation" is "a requirement that limits the quantity, rate, or concentration of emission of air pollutants on a continuous basis." Under an allowance trading program, the Administrator sets an emission limitation for a defined region or regions and a compliance schedule for each unit subject to the program in that region. The emission limitation for each unit is the federally enforceable requirement that the quantity of the unit's emissions during a specified period cannot legally exceed the amount authorized by the allowances that the unit holds. The compliance schedule is set by establishing a deadline by which units must begin to comply with the requirement to hold allowances sufficient to cover emissions. Because an allowance trading program is a compliance mechanism that enables sources to make cost-effective decisions to meet their allowance requirements, which are, in essence, emission limits, the EPA believes considering compliance with such a program as part of its analysis of a CAA section 126(b) petition is in fact consistent with the forms of remedy authorized under CAA section 126(c).

Additionally, the EPA has previously relied on regional allowance trading programs intended to implement CAA section 110(a)(2)(D)(i)(I) to also address section 126(b) petitions. The EPA first used a regional trading program as a section 126(c) remedy for findings in response to section 126(b) petitions from eight states requesting upwind sources be regulated with respect to the 1979 ozone NAAQS. Based on findings made through the NO<sub>x</sub> SIP call, the EPA established its Federal NO<sub>x</sub> Budget Trading Program in response to these petitions. 65 FR 2674 (Jan. 18, 2000). The use of the regional analysis of ozone transport in the NO<sub>x</sub> SIP call findings to respond to contemporaneous section 126(b) petitions was challenged in the D.C. Circuit in *Appalachian Power*,

where Petitioners argued that findings based on statewide emissions cannot determine whether specific stationary source emissions are in violation of the good neighbor provision. Petitioners argued that instead of relying on the NO<sub>x</sub> SIP call findings, the EPA needed first to make the more rigorous finding that the specified stationary sources within a given state independently met its threshold test for impacts on downwind areas. Given the linkage between section 126(b) and the good neighbor provision, the court determined it was reasonable for the EPA to tie its source-specific findings under section 126(b) to the significance of a state's total NO<sub>x</sub> emissions as determined under section 110(a)(2)(D)(i). 249 F.3d at 1049–1050. While the court did not explicitly speak to the issue of whether an allowance trading program is an appropriate remedy under CAA section 126(c), the court's conclusion that a regional analysis is appropriate to evaluate ozone transport at individual sources also supports the conclusion that a regional remedy can effectively address the any air quality problem identified through such an analysis. The court ultimately upheld the EPA's regulatory action on the section CAA 126(b) petitions, which included reliance on the allowance trading program.

The EPA evaluated whether there is newly available information that leads to a determination that these sources are inadequately controlled by the CSAPR Update, as commenters assert. The petitioners and commenters claim that this is so, based on data that preceded implementation of the CSAPR Update that they assert illustrates that relatively large sources with existing control equipment were not operating at appropriate levels of NO<sub>x</sub> abatement. The petitioners and commenters further assert that these sources are inadequately controlled because they do not always operate control equipment on high ozone days. They support their argument with an analysis of an allegedly achievable NO<sub>x</sub> rate, which they claim is appropriate for regulatory application.

The EPA does not agree that these assertions support a determination that these sources are inadequately controlled by the CSAPR Update, and that additional regulatory measures for these sources are necessary under the good neighbor provision. Not only was that rule specifically designed to achieve the reductions necessary under the good neighbor provision, but recent data indicate that it is in fact achieving such reductions and that petitioners' assertions are not borne out by the

current or future operations of the named sources. As discussed earlier, based on reported 2017 ozone-season emissions under the first CSAPR Update compliance period, these sources as a group effectively reduced emissions to a degree consistent with the CSAPR Update remedy. Commenters provided no compelling additional recent emissions and air quality data that suggest controls were broadly underperforming on high ozone days.

The EPA notes that the power sector is a complex and interconnected system in which factors affecting one facility can result in effects across facilities within the state or dispatch region. Thus, granting the petitioners' request for source-specific emission limitations at certain EGUs could cause effects at other EGUs. For instance, rate requirements could result in generation shifting to higher-emitting units that were not named in the petition, potentially creating worse downwind air quality impacts on a statewide or regionwide basis. Petitioners fail to recognize or account for potential rebalancing across the power sector in response to their requested remedy. By only examining the impact of a subset of the units subject to the same cap, the petitioner does not fully account for the potential air quality impact from implementation of the proposed remedy.

The EPA received comments on the proposed action asserting that an allowance trading program, such as that promulgated in the CSAPR Update, cannot address significant contribution to nonattainment or interference with maintenance from a source or group of sources under CAA section 126. Commenters state that an allowance trading program is insufficient to constrain NO<sub>x</sub> emissions where there are excess allowances. Commenters state that since ozone is observed on a daily basis and the form of the standard is based on daily observations, daily NO<sub>x</sub> limits are necessary to prevent units from emitting at high rates on exceedance days and the days leading up to the exceedance. The EPA does not agree that an allowance trading program is an inadequate means of implementing emission reductions for interstate transport purposes and notes it has done so in response to CAA section 126(b) petitions previously.<sup>70</sup> Petitioners have

<sup>70</sup> See Rulemaking on Section 126 Petition From North Carolina To Reduce Interstate Transport of Fine Particulate Matter and Ozone; Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone; Revisions to the Clean Air Interstate Rule; Revisions to the Acid Rain Program, 71 FR 25328 (April 28, 2006); Findings of Significant Contribution and

not provided compelling new or novel information regarding the EPA's technical analysis of NO<sub>x</sub> control potential or observation of CSAPR Update implementation. Implementation mechanisms based on seasonal NO<sub>x</sub> requirements have demonstrated success at reducing peak ozone concentrations. For example, over the past decade, there has been significant improvement in ozone across the eastern United States, in part due to season-long allowance trading programs such as the NO<sub>x</sub> Budget Trading Program, CAIR, and the CSAPR NO<sub>x</sub> ozone-season allowance trading program. As a result, current measured air quality in all Eastern areas is below the 1997 ozone NAAQS. As such, based on the best information available to the agency at this time, the EPA believes that its current approach of implementing an allowance trading program at step four has proven effective at constraining NO<sub>x</sub> emissions from covered sources, including the sources named in the petitions.

#### b. Analysis of SNCR for NO<sub>x</sub> Mitigation

In its petition, Maryland also alleges that two facilities operating SNCR post-combustion controls—Cambria Cogen in Pennsylvania and Grant Town Power Plant in West Virginia—emit or would emit in violation of the good neighbor provision with respect to the 2008 ozone NAAQS and asks that the agency impose emission limits or other requirements to ensure that the facilities operate their SNCR during the ozone season. The EPA is finalizing its proposal to deny Maryland's petition with respect to sources operating SNCR based on its conclusion that fully operating with SNCR is not a cost-effective NO<sub>x</sub> emissions reduction strategy for these sources, considering other relevant factors such as NO<sub>x</sub> reduction potential and downwind air quality impact, with respect to addressing transport obligations for the 2008 ozone NAAQS. The EPA determined in the CSAPR Update that operating existing SNCR would be \$3,400 per ton, which exceeded the level that the EPA determined would be cost effective for the good neighbor provision for the 2008 ozone NAAQS, and, therefore, the EPA is determining in this action that these sources do not emit and would not emit in violation of the good neighbor provision with respect to that NAAQS.

As discussed in Section IV.C.2 of the proposal, the EPA evaluated control

Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 65 FR 2674 (January 18, 2000).

strategies in the CSAPR Update that were considered feasible to implement by the 2017 ozone season and determined that EGU control strategies available at a marginal cost of \$1,400 per ton of NO<sub>x</sub> reduced were cost effective, using a multi-factor test that considered cost, NO<sub>x</sub> reduction potential, and downwind air quality improvements at various levels of potential NO<sub>x</sub> control stringency. In its evaluation, the EPA examined control strategies available at different cost thresholds, including turning on existing idled SNCR, which is the remedy proposed by Maryland in its petition for these two units. The EPA identified a marginal cost of \$3,400 per ton as the level of uniform control stringency that represents turning on idled SNCR controls.<sup>71</sup> The EPA identified this higher marginal cost of operating SNCR at units in the CSAPR Update region, relative to operation of SCR, predominately based on the cost and quantity of reagent needed (*i.e.*, SNCRs require substantially more reagent compared with SCRs due to the absence of catalyst which greatly facilitates the reactions converting the NO<sub>x</sub>).

The CSAPR Update finalized emission budgets using \$1,400 per ton control stringency, finding within step three of the transport framework that this level of stringency represented the control level at which incremental EGU NO<sub>x</sub> reductions and corresponding downwind ozone air quality improvements were maximized with respect to marginal cost. In finding that use of the \$1,400 per ton control cost level was appropriate for the 2008 ozone NAAQS, the EPA determined that the more stringent emission budget level reflecting \$3,400 per ton (representing turning on idled SNCR controls) yielded fewer additional emission reductions and fewer air quality improvements per additional dollar of control costs.

Based on the information, assumptions, and analysis in the CSAPR Update, the EPA determined that establishing emission budgets at \$3,400 per ton and developing associated emissions budgets based on operation of idled SNCR controls was not cost effective for addressing good neighbor provision obligations for the 2008 ozone NAAQS because this level of control yielded fewer additional emission reductions and fewer air quality improvements relative to other less-costly control strategies. 81 FR 74550. A review of the emission levels at the

<sup>71</sup> See EGU NO<sub>x</sub> Mitigation Strategies Final Rule TSD (docket ID EPA-HQ-OAR-2015-0500-0554), available at <http://www.regulations.gov>.

sources named in Maryland's petition before implementation of the CSAPR Update, in particular, demonstrates that the two units are relatively small in size and have low emission levels, indicating that the units have a relatively limited ability to substantially reduce NO<sub>x</sub> emissions and, thereby, improve air quality downwind.<sup>72</sup> Neither Maryland's petition nor public commenters provide any contradictory information demonstrating that fully operating SNCR is a cost-effective control for the two named sources, considering the marginal cost of implementation, the anticipated emission reduction, and the potential air quality benefits.<sup>73</sup> The EPA, thus, denies Maryland's petition with respect to these sources based on its conclusion that fully operating with SNCR is not a cost-effective NO<sub>x</sub> emission reduction strategy with respect to addressing transport obligations for the 2008 ozone NAAQS for these sources, and, therefore, that these sources do not emit and would not emit in violation of the good neighbor provision with respect to the 2008 ozone NAAQS.

While the EPA determined that fully operating SNCR across the region was not cost effective with respect to addressing transport obligations for the 2008 ozone NAAQS, individual sources may nonetheless choose how to comply with the CSAPR ozone season NO<sub>x</sub> allowance trading program. The operation of existing SNCR controls is one method to achieve emission reductions needed to comply with the requirements of the trading program. 81 FR 74561. For instance, during the 2017 ozone season, likely in part as the result of economic incentives under the CSAPR Update, the two Cambria units with SNCR appear to have operated their controls, resulting in average NO<sub>x</sub> emissions rates of 0.15 and 0.16 lbs/mmBtu, respectively (a drop from the 2016 rates of 0.23 and 0.24 lbs/mmBtu, respectively).<sup>74</sup>

<sup>72</sup> Cambria Cogen units one and two emitted 237 tons and 219 tons of ozone season NO<sub>x</sub> in 2016, respectively, while Grant Town units 1A and 1B emitted 282 tons and 285 tons of ozone season NO<sub>x</sub> in 2016, respectively. Ozone season NO<sub>x</sub> emissions rates from these EGUs under the CSAPR Update in 2017 are described later.

<sup>73</sup> Since the EPA does not agree, and Maryland has not demonstrated in the first instance that the operation of SNCR at these units is cost effective, the EPA need not address Maryland's claim that short-term emission limits may be appropriate. In any event, the EPA notes that the same concerns with relying on the lowest historical emission rate for purposes of determining what is achievable for SCRs, discussed in Section IV.B.2 in the proposal, would also apply to Maryland's contentions with respect to SNCRs.

<sup>74</sup> See 2015, 2016, and 2017 Ozone-Season NO<sub>x</sub> rates (lbs/mmBtu) for 41 units named in the petitions, available in the docket for this action.

One commenter asserts that the EPA incorrectly analyzed Maryland's argument related to EGUs equipped with SNCR, as the availability of NO<sub>x</sub> reductions under a 126(b) petition must be evaluated on a source-specific basis in order to determine if the proposed NO<sub>x</sub> control is cost effective. The commenter alleges that when the EPA conducts cost-effectiveness determinations for RACT, SNCR installation is considered cost effective, and, therefore that running those installed controls is necessarily also cost effective in the context of the good neighbor provision as well. Another commenter asserts that the optimization of existing post-combustion controls is an immediately available cost-effective NO<sub>x</sub> reduction strategy available in the EGU sector.

While the operation of SNCR could be implemented relatively quickly, as described earlier, the EPA does not have a basis to determine that the controls are cost effective at these units when considering cost, NO<sub>x</sub> reduction potential, and downwind air quality improvements. Commenters have also not provided information demonstrating that, even at the unit level proposed by the commenter, operation of SNCR at the two units named in the Maryland petition are cost effective relative to NO<sub>x</sub> reduction potential and downwind air quality improvements.

The EPA also does not agree that any conclusions drawn regarding cost effectiveness of controls in other contexts are directly applicable here. RACT determinations are evaluating whether implementation of certain controls within a nonattainment area will be effective at addressing a local air quality problem relative to the cost of implementing such controls. However, implementation of the same controls at sources that are significantly farther from a particular air quality problem may have very different air quality impacts a downwind area. As described earlier in this notice, ozone transport is the result of the collective contribution of many sources in several upwind states. The relative cost effectiveness of emission reductions from implementation of controls at a given upwind source, when considering NO<sub>x</sub> reduction potential and downwind impacts, will necessarily be different than evaluation of the same controls at a more local source. The EPA's approach for assessing cost effectiveness in the context of regional interstate ozone pollution transport can, therefore, reasonably be considered as addressing a different air quality concern and thereby independent from cost-

effectiveness determinations made under RACT.

Based on the EPA's conclusion that fully operating with SNCR is not a cost-effective NO<sub>x</sub> emission reduction strategy with respect to addressing transport obligations for the 2008 ozone NAAQS for these sources, the EPA finds that the petition and the comments provide no grounds for the EPA to determine that that the two sources identified as operating SNCR emit or would emit in violation of the good neighbor provision with respect to the 2008 ozone NAAQS.

#### c. The EPA's Step Three Analysis With Respect to Brunner Island

The remaining facility addressed in one of Delaware's petitions is the Brunner Island facility, which currently has neither SCR nor SNCR installed. As noted earlier, the EPA has already determined that Delaware's petitions should be denied based on the EPA's conclusions that there are no downwind air quality impacts in Delaware in steps one and two of the four-step framework. Nonetheless, the EPA has evaluated Brunner Island with respect to step three because it provides another independent basis for EPA's denial of the petition.

With respect to the question of whether there are feasible and cost-effective NO<sub>x</sub> emissions reductions available at Brunner Island, the facility primarily burned natural gas with a low NO<sub>x</sub> emissions rate in the 2017 ozone season, and the EPA expects the facility to continue operating primarily by burning natural gas in future ozone seasons. As such, and as described in more detail in the following paragraphs, the EPA at this time finds that no additional feasible and cost-effective NO<sub>x</sub> emissions reductions available at Brunner Island have been identified. The EPA, therefore, has no basis to determine, consistent with the standard of review outlined in Section IV.A of this notice, that Brunner Island emits or would emit in violation of the good neighbor provision with respect to the 2008 or 2015 ozone NAAQS.

Delaware's CAA section 126(b) petition first proposes that the operation of natural gas is an available cost-effective emissions reduction measure that could be implemented at Brunner Island. Brunner Island completed construction of a natural gas pipeline connection prior to the beginning of the 2017 ozone season (*i.e.*, by May 1, 2017) and operated primarily using natural gas as fuel for the 2017 ozone season. As a result, Brunner Island's actual ozone season NO<sub>x</sub> emissions declined from 3,765 tons in 2016 to 877 tons in 2017,



and the facility's ozone season NO<sub>x</sub> emissions rate declined from 0.370 lbs/mmBtu in 2016 to 0.090 lbs/mmBtu in 2017. Thus, Brunner Island has already implemented the emissions reductions consistent with what Delaware asserted would qualify as a cost-effective strategy for reducing NO<sub>x</sub> emissions. Accordingly, the EPA has determined that Delaware's CAA section 126(b) petition does not demonstrate that, at this current level of emissions, Brunner Island emits in violation of the good neighbor provision.

Similarly, the EPA concludes that Delaware's petition does not demonstrate that Brunner Island would emit in violation of the good neighbor provision. The EPA believes Brunner Island will continue to primarily use natural gas as fuel during future ozone seasons for economic reasons. First, compliance with the CSAPR Update provides an economic incentive to cost-effectively reduce NO<sub>x</sub> emissions. Specifically, Brunner Island's participation in the CSAPR NO<sub>x</sub> Ozone Season Group 2 allowance trading program provides an economic incentive to produce electricity in ways that lower ozone season NO<sub>x</sub>, such as by burning natural gas relative to burning coal at this particular power plant. Under the CSAPR Update, each ton of NO<sub>x</sub> emitted by a covered EGU has an economic value—either a direct cost in the case that a power plant must purchase an allowance to cover that ton of emissions for CSAPR Update compliance or an opportunity cost in the case that a power plant must use an allowance in its account for compliance and, thereby, foregoes the opportunity to sell that allowance on the market. The EPA notes that Brunner Island's 2017 emissions would have been approximately 2,714 tons more than its actual 2017 emissions if it had operated as a coal-fired generator, as it did in 2016.<sup>75</sup> This reduction in NO<sub>x</sub> emissions that is attributable to primarily burning natural gas has an economic value in the CSAPR allowance trading market.

Second, there are continuing fuel-market based economic incentives suggesting that Brunner Island will continue to primarily burn natural gas during the ozone season. Brunner Island elected to add the capability to

<sup>75</sup> This estimated emissions difference was calculated as the difference between 2017 reported NO<sub>x</sub> emissions of 877 tons and a counterfactual 2017 NO<sub>x</sub> emissions estimate of 3,591 tons created using 2017 operations (*i.e.*, heat input of 19,406,872 mmBtu) multiplied by the 2016 NO<sub>x</sub> emission rate of 0.37 lb/mmBtu reflecting coal-fired generation. These data are publicly available at <https://www.epa.gov/ampd>.

primarily utilize natural gas by way of a large capital investment in a new natural gas pipeline capacity connection. Brunner Island's operators would have planned for and constructed this project during the recent period of relatively low natural gas prices. In the years preceding the completion of this natural gas pipeline connection project (*i.e.*, between 2009 and 2016), average annual Henry Hub natural gas spot prices ranged from \$2.52/mmBtu to \$4.37/mmBtu.<sup>76</sup> The capital expenditure to construct a natural gas pipeline connection suggests that natural gas prices within this range make it economic (*i.e.*, cheaper) for Brunner Island to burn natural gas to generate electricity relative to burning coal. As such, future natural gas prices in this same range suggest that Brunner Island will continue to primarily burn natural gas during future ozone seasons. The EPA and other independent analysts expect future natural gas prices to remain low and within this price range exhibited from 2009 to 2016 due both to supply and distribution pipeline buildout. For example, the Energy Information Administration's (EIA) 2018 Annual Energy Outlook (AEO) natural gas price projections for the Henry Hub spot price range from \$3.06/mmBtu in 2018 to \$3.83/mmBtu in 2023.<sup>77</sup> Moreover, the AEO short-term energy outlook and New York Mercantile Exchange futures further support the estimates of a continued low-cost natural gas supply.<sup>78</sup> These independent analyses of fuel price data and projections lead to the EPA's expectation that fuel-market economics will continue to support Brunner Island's primarily burning natural gas

<sup>76</sup> Henry Hub is a significant distribution hub located on the natural gas pipeline system located in Louisiana. Due to the significant volume of trades at this location, it is seen as the primary benchmark for the North American natural gas market. These data are publicly available at <https://www.eia.gov/dnav/ng/hist/rngwhhdA.htm>.

<sup>77</sup> In the 2018 reference case Annual Energy Outlook (AEO) released February 6, 2018, created by the U.S. Energy Information Administration (EIA), natural gas prices for the power sector for 2018 through 2023. Available at <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=13-AEO2018&cases=ref2018&sourcekey=0>. Projected delivered natural gas prices for the electric power sector in the Middle Atlantic region, where Brunner Island is located, ranged between \$3.56 in 2018 and \$4.08/mmBtu in 2023. The projected delivered coal prices for the electric power sector in the Middle Atlantic region remain relatively constant, ranging from \$2.51 to \$2.56/mmBtu. These data are publicly available at <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=3-AEO2018&region=1-2&cases=ref2018&start=2016&end=2023&f=A&linechart=ref2018-d121317a.3-3-AEO2018.1-2&map=ref2018-d121317a.4-3-AEO2018.1-2&sourcekey=0>.

<sup>78</sup> AEO short-term energy outlook available at <https://www.eia.gov/outlooks/steo/report/natgas.php>.

during future ozone seasons through at least 2023.<sup>79</sup>

The context in which Brunner Island installed natural gas-firing capability and burned natural gas is consistent with observed recent trends in natural gas utilization within the power sector, suggesting that Brunner Island's economic situation in which it primarily burns gas as fuel during the ozone season is not unique or limited. Comparing total heat input from 2014 with 2017 for all units that utilize natural gas and report to the EPA's Clean Air Markets Division, historical data showed an increased use of natural gas of 14 percent.<sup>80</sup> This overall increase results from both an increase in capacity from the construction of additional units and an increased gas-fired capacity factor at existing sources. The available capacity increased six percent while average capacity factor increased from 23 percent to 25 percent, which reflects an eight percent increase in utilization.

Considering the projected continued broader downward trends in NO<sub>x</sub> emissions resulting in improved air quality in Delaware, the EPA anticipates that Brunner Island will likely continue to primarily burn natural gas during the ozone season as air quality in Delaware continues to improve. Accordingly, the EPA has no basis to conclude that the facility would emit in violation of the good neighbor provision with respect to either the 2008 or 2015 ozone NAAQS.

Commenters assert that the EPA's interpretation of "emits" or "would emit" inappropriately proposes to evaluate only a single year's worth of emissions data or anticipated future rates, without ensuring that the emission reductions (*i.e.* evaluated rates) are permanent and federally enforceable. The EPA disagrees that it is required to impose federally enforceable limitations at Brunner Island based on the facts before the agency. The prohibition of CAA section

<sup>79</sup> The EPA also notes that a proposed consent decree between Sierra Club and Talen Energy may further ensure that Brunner Island will operate by burning gas in the ozone season in 2023 and future years. Under the settlement, Brunner Island agrees to operate only on natural gas during the ozone season (May 1–September 30) starting on January 1, 2023, (subjected to limited exceptions) and cease coal operations after December 31, 2028. Sierra Club, Talen Energy, and Brunner Island jointly moved the Middle District of Pennsylvania to enter the proposed consent decree, and on August 31, 2018, the court granted the motion and entered the agreement. See Order Granting Joint Motion for Entry of Proposed Consent Decree and Stipulation Extending Defendants' Time to Respond to Complaint, *Sierra Club v. Talen Energy Corp.*, Case No. 1:18-cv-01042-CCC.

<sup>80</sup> From 8.4 billion mmBtu to 9.6 billion mmBtu. See EPA's Clean Air Markets Division data available at <https://ampd.epa.gov/ampd/>.

110(a)(2)(D)(i)(I) is linked directly to CAA section 126(b), in that a violation of the prohibition in CAA section 110(a)(2)(D)(i) is a condition precedent for action under CAA section 126(b) and, critically, that significant contribution to nonattainment and interference with maintenance should be construed identically for purposes of both provisions where EPA has already given meaning to the terms under one provision. 83 FR 7711 through 7722; see also *Appalachian Power*, at 1048–50 (affirming as reasonable the EPA’s approach to interpreting a violation of CAA section 110(a)(2)(D)(i)(I) under CAA section 126 consistent with its approach in the NO<sub>x</sub> SIP Call).

Given the inextricable link between the substantive requirements of the two provisions, the EPA applied the same four-step framework used in previous ozone transport rulemakings, including the CSAPR Update, for evaluating whether Brunner Island significantly contributes to nonattainment, or interferes with maintenance, of the 2008 and 2015 ozone NAAQS in Delaware. Pursuant to this framework, the EPA first determines in steps one and two whether emissions from an upwind state impact downwind air quality problems at a level that exceeds an air quality threshold, such that the state is linked and, therefore, contributes to the air quality problem. In step three, the EPA then determines whether the contribution is “significant” or interferes with maintenance of the NAAQS based on several factors, including the availability of cost-effective emission reductions at sources within the state. Where the EPA determines that a source does not have cost-effective emission reductions available, the EPA concludes that the source does not significantly contribute to nonattainment or interfere with maintenance of the NAAQS, and thus, that there are no emissions at the source that must be “prohibited” under CAA section 110(a)(2)(D)(i)(I), and the petition can also be denied on this basis.

Importantly, the EPA only implements federally enforceable limits under step four of the four-step framework for sources that the EPA determines have emissions that significantly contribute to nonattainment or interfere with maintenance of the ozone NAAQS downwind under steps one, two, and three. See 81 FR 74553 (declining to impose CSAPR Update FIP obligations for EGUs in District of Columbia and Delaware despite linkages to downwind receptors where EPA determined no cost-effective emission reductions were available). This is consistent with the

statutory language of CAA section 110(a)(2)(D)(i)(I), which “prohibit[s]” only those emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS in another state. The EPA has reasonably interpreted this to mean that where there is no such impact, the EPA and the states are not required to impose emission limitations.<sup>81</sup> The EPA does not dispute that, were it to find that Brunner Island emits or would emit in violation of the prohibition under CAA section 110(a)(2)(D)(i)(I), an appropriate remedy to mitigate the emission impacts would necessarily have to be federally enforceable, both under CAA section 126(c) (requiring compliance by a source with EPA-imposed emission limitations and compliance schedules) and CAA section 110(a)(2)(D)(ii) (requiring a state implementation plan to contain provisions ensuring compliance with the requirements of CAA section 126).

However, for the reasons described in the proposal and in this final action, the EPA has determined at this time that Brunner Island does not emit, or would not emit, in violation of CAA section 110(a)(2)(D)(i)(I) under steps one, two, and three for either the 2008 or 2015 ozone NAAQS. Therefore, under the four-step framework, the EPA does not reach step four’s requirement of federally enforceable emission reductions. However, the EPA notes that if, in fact, Brunner Island’s operations change such that the facility is operating primarily on coal during future ozone seasons and future emission levels increase so as to be in violation of the good neighbor provision, then this final action denying Delaware’s petition would not preclude Delaware from submitting another petition regarding Brunner Island’s impacts. The EPA is not, however, pre-determining what action may be appropriate on any such future petition, which would depend upon a variety of factors, including the

<sup>81</sup> This is also consistent with designation requirements elsewhere in title I. Downwind areas are initially designated attainment or nonattainment for the ozone NAAQS based on actual measured ozone concentrations, regardless of whether the level of ozone concentrations is due to enforceable emission limits. Similarly, the EPA generally evaluates whether sources in nearby areas contribute to measured nonattainment in such areas for purposes of designations based on actual emission levels, and thus sources in those nearby areas are generally subject to nonattainment planning requirements only if actual emissions from that area are considered to contribute to the air quality problem. Here, where “significant contribution” is necessarily a higher standard than the contribution threshold used in designations, it is reasonable and consistent to determine that states or EPA need only impose emission limitations if it is determined that there is significant contribution or interference with maintenance.

level of emissions at Brunner Island and future ozone concentrations in Delaware.

#### V. Determinations Under Section 307(b)(1)

Section 307(b)(1) of the CAA indicates which Federal Courts of Appeal have venue for petitions of review of final actions by the EPA. This section provides, in part, that petitions for review must be filed in the Court of Appeals for the District of Columbia Circuit if (i) the agency action consists of “nationally applicable regulations promulgated, or final action taken, by the Administrator,” or (ii) such action is locally or regionally applicable, if “such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination.”

The EPA finds that this final action regarding the pending CAA section 126(b) petitions is “nationally applicable.” or, in the alternative, is based on a determination of “nationwide scope and effect” within the meaning of CAA section 307(b)(1). Through this rulemaking action, the EPA interprets sections 110 and 126 of the CAA, statutory provisions which apply to all states and territories in the United States. In addition, the final action addresses emissions impacts and sources located in seven States, which are located in multiple EPA Regions and federal circuits.<sup>82</sup> This action is also based on a common core of factual findings and analyses concerning the transport of pollutants between the different states. Furthermore, the EPA intends this interpretation and approach to be consistently implemented nationwide with respect to CAA section 126(b) petitions for the 2008 and 2015 ozone NAAQS. Courts have found similar actions to be nationally applicable.<sup>83</sup> For these reasons, the Administrator finds that any final action related to this proposal is nationally applicable or, in the alternative, is based on a determination of nationwide scope and effect for purposes of CAA section 307(b)(1).

Thus, the EPA finds that pursuant to CAA section 307(b)(1) any petitions for review of this final action would be filed in the Court of Appeals for the District of Columbia Circuit within 60

<sup>82</sup> See H.R. Rep. No. 95–294 at 323, 324, reprinted in 1977 U.S.C.C.A.N. 1402–03.

<sup>83</sup> See, e.g., *Texas v. EPA*, 2011 U.S. App. LEXIS 5654 (5th Cir. 2011) (finding SIP call to 13 states to be nationally applicable and thus transferring the case to the U.S. Court of Appeals for the D.C. Circuit in accordance with CAA section 307(b)(1)).

days from the date any final action is published in the **Federal Register**.

**VI. Statutory Authority**

42 U.S.C. 7410, 7426, 7601.

Dated: September 14, 2018.

**Andrew R. Wheeler,**  
*Acting Administrator.*

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