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DEPARTMENT FOR ENVIRONMENTAL PROTECTION**

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July 23, 2018

Attention: Mr. Lev Gabrilovich
Environmental Protection Agency Docket Center (EPA/DC)
Air and Radiation Docket and Information Center
1200 Pennsylvania Ave., NW
Washington, DC, 20460
Mail Code: 6102T

Dear Mr. Gabrilovich,

On behalf of the Commonwealth of Kentucky, the Energy and Environment Cabinet (Cabinet) respectfully requests the Administrator of the United States Environmental Protection Agency (EPA) to finalize its proposed denial of Maryland's petition filed under section 126(b)¹ of the Clean Air Act (CAA). As explained in the Federal Register published on June 8, 2018,² the Cabinet agrees with EPA's assessment that material elements of Maryland's analysis are technically deficient and is insufficient to support Maryland's conclusions.³ Without adequate technical justification, EPA should deny Maryland's petition under Section 126(b) of the Clean Air Act (CAA).

As a matter of background, the State of Maryland filed a petition on November 16, 2016, requesting EPA to abate emissions from thirty-six (36) coal-fired electric generating units in five upwind states that supposedly contribute to Maryland's nonattainment with the ozone national ambient air quality standard (NAAQS) revised in 2008. In the petition, Maryland identified three (3) Kentucky emission sources asserting these sources were contributing to Maryland's failure to attain compliance with the 2008 ozone national ambient air quality standard.⁴

Under Section 126 of the CAA, the petitioner bears the burden of establishing a technical basis for the specific finding request.⁵ After evaluating the petition, EPA "determined that material elements of the analysis provided in Maryland's petition are technically deficient, and thereby, proposes to deny the petition, in part based on the fact the conclusions that the petition draws are not supported by the technical assessment."⁶ Kentucky agrees with EPA's

¹ 42 U.S.C 7426(b)

² 83 FR 26666

³ 83 FR 26677

⁴ The Kentucky sources are identified as Duke Energy-East Bend Unit 2, Owensboro Municipal Utilities-Elmer Smith Unit 1, and Tennessee Valley Authority-Paradise Unit 3.

⁵ State of New York, et al, v. Ruckelshaus, et al, No. 84-0853, 1984 WL 13953 (D.D.C. Oct. 5, 1984).

⁶ 83 FR 26677

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determination and provides technical comments detailing Maryland's deficiencies in the enclosed attachment.

Prior to Maryland filing its petition under Section 126(b) of the Clean Air Act, EPA finalized its Cross-State Air Pollution Rule (CSAPR Update) on October 26, 2016. The petition filed by Maryland on November 16, 2016, failed to account for the significant emissions reductions resulting from the CSAPR Update. Considering that Maryland's petition was filed after EPA's CSAPR Update, EPA should deny the petition for the lack of an accurate technical analysis included with Maryland's petition.

On October 27, 2017, EPA provided supplemental information and updated modeling results reflecting the federally-enforceable requirements of the CSAPR Update.⁷ EPA provided the technical information to states for purposes of addressing the Good Neighbor provision. EPA's updated modeling results indicate that no monitoring sites, outside of California, will violate the 2008 ozone NAAQS in the year 2023. Thus, the emissions reductions resulting from CSAPR Update render the 126(b) petition from Maryland moot.

It should also be noted that EPA's proposed denial of Maryland's 126(b) petition is consistent with recent actions. On June 28, 2018, EPA took final action to approve the Kentucky State Implementation Plan revision to address the "Good Neighbor" provision for the 2008 Ozone NAAQS. In its approval, EPA found "that Kentucky is not required to make any further reductions, beyond those required by the CSAPR Update, to address its statutory obligation under CAA section 110(a)(2)(D)(i)(I) for the 2008 ozone NAAQS."

In conclusion, Kentucky supports EPA's proposed denial of the 126(b) petition filed by Maryland. Maryland's petition is technically deficient and does not follow EPA's methodology in determining obligations under the "Good Neighbor" provision of the Clean Air Act. Further, EPA's independent analysis concludes that emissions reductions from the CSAPR Update will ensure that all monitors, outside of California, comply with the 2008 Ozone NAAQS. Therefore, the Cabinet requests EPA to take final action denying the 126(b) petition filed by Maryland.

Sincerely,


Charles G. Snaveley
Secretary

⁷ United States Environmental Protection Agency, *Supplemental Information on the Interstate Transport State Implementation Plan Submissions for the 2008 Ozone National Ambient Air Quality Standards under Clean Air Action Section 110(a)(2)(D)(i)(I)*, memorandum issued by Stephen D. Page, Director OAQPS, October 27, 2017.

Kentucky Energy and Environment Cabinet Comments Supporting EPA's Proposed Action and Response to Clean Air Act Section 126(b) Petitions From Delaware and Maryland (Docket ID No. EPA-HQ-OAR-2018-0295)

Executive Summary

On November 16, 2016, the State of Maryland petitioned the United States Environmental Protection Agency (EPA) to abate emissions from thirty-six (36) coal-fired electric generating units in five upwind states, including Kentucky. Maryland filed the petition under section 126(b) of the Clean Air Act (CAA) and requested EPA to make a finding that the 36 coal-fired electric generating units significantly contribute to ozone levels that exceed the 2008 8-hour ozone national ambient air quality standard (NAAQS) in Maryland.

Under Section 126 of the CAA, the petitioner bears the burden of establishing a technical basis for the specific finding request.¹ After evaluation of the petition, EPA “determined that material elements of the analysis provided in Maryland’s petition are technically deficient, and thereby, proposes to deny the petition, in part based on the fact the conclusions that the petition draws are not supported by the technical assessment.”² Kentucky agrees with EPA’s determination and requests EPA to finalize its action to disapprove Maryland’s 126(b) petition.

In its petition, Maryland identified three (3) electric generating units located in Kentucky as contributing to Maryland’s failure to attain the 2008 ozone NAAQS. The Kentucky sources identified in the 126(b) petition are Duke Energy’s East Bend Unit 2, Owensboro Municipal Utilities’ Elmer Smith Unit 1, and TVA’s Paradise Unit 3. Each of the electric generating units are subject to the Cross-State Air Pollution Rule (CSAPR), which is a control strategy administered to reduce emissions of nitrogen oxides (NO_x), a precursor to ozone.

It should be noted that Maryland’s petition lacks an accurate technical analysis of the significant NO_x reductions resulting from the CSAPR update published in October of 2016. As noted above, CSAPR applies to the Kentucky sources identified in the petition and specifically addresses the interstate transport obligations for the 2008 ozone NAAQS. The CSAPR update rule reduced Kentucky’s 2017 Ozone Season budget for NO_x by 42% compared to previous control periods. EPA’s technical analysis of these significant NO_x reductions concludes that Kentucky emissions no longer significantly contribute to nonattainment, or interfering with the maintenance, of areas in Maryland, with respect to the 2008 ozone NAAQS.

Due to Maryland’s failure to provide an accurate technical analysis and appropriately model the federally-enforceable emission limitations established under CSAPR, EPA should deny the petition filed by Maryland under section 126(b) of the Clean Air Act.³

¹ State of New York, et al, v. Ruckelshaus, et al, No. 84-0853, 1984 WL 13953 (D.D.C. Oct. 5, 1984).

² 83 FR 26677

³ 42 U.S.C 7426(b)

I. EPA’s Current Cross-State Air Pollution Rule Update renders Maryland’s 126(b) petition moot

Currently, all quality-assured ambient air monitors measuring ozone in Maryland achieve compliance with the 2008 ozone NAAQS.⁴ Compliance with the ozone NAAQS is, in part, attributed to the implementation of the Cross-State Air Pollution Rule (CSAPR).

To specifically address the 2008 8-hour ozone NAAQS, EPA published the CSAPR Update on October 26, 2016, and modified the NO_x ozone season allowance-trading program established under the original CSAPR.⁵ The rule reduces ground-level ozone in twenty-two (22) eastern states found to have ozone season NO_x emissions potentially affecting the ability of downwind states to attain and maintain the 2008 ozone NAAQS. The final rule became effective on December 27, 2016, and applies to the three (3) Kentucky sources that Maryland requests a finding under Section 126(b) of the CAA.

As required by 40 CFR 52.940(b)(1) and (b)(2), the owner and operator of each source located in Kentucky and subject to CSAPR must comply with the CSAPR NO_x Ozone Season Budget. As such, the owner and operator of each source and each unit located in Kentucky are subject to the requirements set forth under the CSAPR NO_x Ozone Season Group 2 Trading Program in 40 CFR 97 Subpart EEEEE with regard to emissions occurring in 2017 and in each subsequent year. These applicable requirements are federally-enforceable and can be relied upon to satisfy the Good Neighbor provision.

In 2015 and 2016, EPA allocated Kentucky a NO_x ozone season budget of 36,167 tons through CSAPR.⁶ As a result of the CSAPR Update, EPA reduced Kentucky’s 2017 NO_x ozone season budget to 21,115 tons, a 42% reduction. Implementation of CSAPR and the CSAPR Update successfully reduces NO_x emissions during the ozone season; thus, prohibiting Kentucky emissions from significantly contributing to nonattainment, or interfering with the maintenance, of downwind states, including Maryland, with respect to the 2008 ozone NAAQS.

2015 - 2017 EGU Point Sources Ozone Season NO_x emissions (tons per ozone season)

	2015	2016	2017
Allocations	36,167	36,167	21,115
NO_x Actual Emission Totals (tons)⁷	27,790.75	25,473.99	20,053.01

Without question, EPA’s CSAPR update significantly reduces emissions of NO_x during the ozone season and addresses the Good Neighbor provision found at Section 110(a)(2)(D)(i)(I) of the CAA. Therefore, EPA should deny Maryland’s request for a finding under 126(b) of the CAA.

⁴ Attachment A – AMP480

⁵ 81 FR 74504

⁶ 40 CFR 97.510(a)(8)(i)

⁷ Ozone Season NO_x emissions data obtained from EPA’s Air Markets Program Data <https://ampd.epa.gov/ampd/>

II. EPA’s proposed denial of Maryland’s 126(b) petition is consistent with recent actions related to the 2008 Ozone NAAQS Interstate Transport SIP requirements

Contrary to Maryland’s technical assessment included with its 126(b) petition, EPA’s recent technical interstate transport analysis modeled reductions of NO_x emissions resulting from the CSAPR update. As discussed in more detail below, EPA issued a memorandum to provide supplemental information for the 2008 ozone NAAQS interstate transport obligations on October 27, 2017. EPA concluded that modeling results demonstrate that no monitoring sites, outside of California, that are projected to have nonattainment or maintenance problems with respect to the 2008 ozone NAAQS of 75 ppb in 2023.

Similarly, EPA issued a memorandum on March 27, 2018, to assist states in their efforts to develop SIPs to address their interstate transport obligations for the 2015 ozone NAAQS. The memo also provided information regarding EPA’s most recent technical analysis. EPA’s modeling results also determined that all monitoring sites, outside of California, will achieve the 2008 ozone NAAQS.

Most recently, EPA approved Kentucky’s SIP revision addressing the 2008 Ozone NAAQS Interstate Transport SIP Requirements. In the Federal Register published on July 17, 2018, EPA took final action to approve Kentucky’s SIP revision and concluded that “Kentucky is not required to make any further reductions, beyond those required by the CSAPR Update, to address its statutory obligation under CAA section 110(a)(2)(D)(i)(I) for the 2008 ozone NAAQS.”⁸

EPA’s proposed denial of Maryland’s 126(b) petition is consistent with recent EPA actions. EPA’s updated technical analysis supports its proposed denial of Maryland’s 126(b) petition and EPA should take final action in a consistent manner.

a. EPA’s final action approving the Kentucky SIP as it relates to the 2008 Ozone NAAQS Interstate Transport SIP Requirements

On February 28, 2018, Kentucky submitted a proposed SIP revision for EPA review and approval to address the Good Neighbor provision of the 2008 Ozone NAAQS. Specifically, the SIP revision addresses the CAA requirements known as the Good Neighbor provision under Section 110(a)(2)(D)(i)(I) for the 2008 ozone NAAQS. As stated previously, the CAA Good Neighbor provision requires that each states’ SIP must address the transport of emissions across state lines that contribute to nonattainment, or interfere with maintenance, of a NAAQS in any other state.

After evaluating Kentucky’s submittal, EPA published a final rule approving the revision to the Kentucky SIP addressing the 2008 Ozone NAAQS transport requirements on July 17,

⁸ 83 FR 33759

2018. Importantly, EPA finds that Kentucky does not need to make any additional emissions reductions beyond those required by the 2016 CSAPR Update Rule to meet its statutory obligations for the Good Neighbor provisions of the 2008 ozone NAAQS under the CAA.

As such, EPA should deny the petition from Maryland, as Kentucky does not contribute to nonattainment areas or interfere with maintenance of the 2008 Ozone NAAQS in Maryland, or any other state.

b. EPA’s October 27, 2017 memorandum: “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)”

On October 27, 2017, EPA Air Quality Planning and Standards Director, Stephen Page, issued a memorandum to air agency directors within all EPA regions. The memorandum provided supplemental information for the 2008 ozone NAAQS under Clean Air Act Section 110(a)(2)(D)(i)(I). In the memo, EPA stated that the objective was “to assist states’ efforts to develop, supplement or resubmit Good Neighbor SIPs for the 2008 ozone NAAQS to fully address their interstate transport obligations.”

The memorandum predicted “future year ozone design values and contribution modeling outputs for monitors in the United States based on updated air quality modeling (for 2023) and monitoring data. EPA’s updated modeling indicates that there are no monitoring sites, outside of California, that are projected to have nonattainment or maintenance problems with respect to the 2008 ozone NAAQS of 75 ppb in 2023.”⁹

Based upon EPA’s updated technical analysis, EPA should deny Maryland’s 126(b) petition.

c. EPA’s March 27, 2018 memorandum: “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)”

Consistent with its October 27, 2017 memorandum, EPA issued a memo designed to assist states in determining its interstate transport obligations under Section 110(a)(2)(D)(i)(I) of the CAA for the 2015 Ozone NAAQS. EPA explained it used the Comprehensive Air Quality Model with Extensions (CAMx v6.40) to model emissions in 2011 and 2023, taking into account updated information from states and other interested parties.

⁹ EPA Memorandum, “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 27, 2017.

EPA's modeling results accompanying its March 27, 2018 memorandum determined that all monitoring sites, outside of California, will achieve the 2008 ozone NAAQS. Thus, Maryland's 126(b) petition is unnecessary, and EPA should finalize its disapproval.

III. Petition from Maryland lacks a proper technical Analysis

As EPA explained in its proposed denial, EPA evaluated Maryland's petition by applying the four-step regional analytic framework utilized in previous interstate transport regulatory strategies in determining whether to grant the Section 126(b) petition. Maryland's petition fails to include a technical assessment consistent with EPA's regional analytic framework. Additionally, Maryland's technical assessment utilizes outdated emissions platforms for point source emissions, as well as mobile sources. And finally, Maryland's evaluation fails to conduct a significant contribution analysis for two of the three Kentucky sources identified in its 126(b) petition.

For these reasons, EPA should deny Maryland's 126(b) petition.

a. Maryland's analysis is inconsistent with previous EPA methodology

As EPA notes in its proposed denial of Maryland's 126(b) petition, EPA evaluated the petition consistent with the same four-step regional analytic framework that the EPA applied in previous regulatory control strategies addressing regional interstate ozone transport. EPA's four-step regional analytic framework includes the following elements:

- (1) Identifying downwind air quality problems;
- (2) Identifying upwind states that contribute enough to those downwind air quality problems to warrant further review and analysis;
- (3) Identifying the emissions reductions necessary to prevent an identified upwind state from contributing significantly to those downwind air quality problems; and
- (4) Adoption of permanent and enforceable measures needed to achieve those emissions reductions.

Instead of following the four-step regional analytic framework, Maryland's analysis focuses on whether electric generating units are optimizing their post-combustion NOx controls.¹⁰ Maryland's conglomeration of power point presentations,¹¹ magazine articles¹², and incomplete studies¹³ failed to follow EPA's long-standing four-step regional analytic framework.

Due to Maryland's 126(b) petition failing to include a technically-sound assessment, EPA should deny Maryland's 126(b) petition.

¹⁰ Maryland Petition, Appendix A, Part 2.

¹¹ Maryland Petition, Appendix A-14

¹² Maryland Petition, Appendix C

¹³ Maryland Petition, Appendix D

b. Maryland's evaluation based on inaccurate emission inventories

Maryland's technical analysis used outdated emissions from electric generating units as the baseline and failed to account for significant emissions rate decreases resulting from EPA's most recent rulemaking addressing regional emissions contribution to elevated ozone levels. According to the appendices that accompanied Maryland's 126 petition, Maryland did not use the latest and most thoroughly reviewed modeling platform. Previous versions of EPA's 2011 modeling platform had projected Kentucky's 2017 emissions inaccurately, as well as other states.

In response to EPA's NODA on Preliminary Interstate Ozone Transport Modeling Data for the 2015 Ozone NAAQS, Kentucky submitted a comment letter on April 6, 2017. Specifically, Kentucky explained, "In review of the non-EGU emission projections, the Division found that EPA grew NO_x and VOC emissions from nonpoint oil/gas production in Kentucky by 25,195 and 13,954 tons respectively from 2011 levels."¹⁴

EPA has since addressed the error and has updated the 2011 modeling platform through Version 6.3. EPA's latest modeling platform, 2011 Version 6.3, provides inventories with updates based on public comments that also support preliminary interstate transport modeling for the 2018 Ozone NAAQS. However, Maryland failed to utilize these more accurate, updated emissions inventories.

Since Maryland's modeling utilized inaccurate emissions inventories, EPA should find Maryland's technical analysis flawed. And consequently, EPA should deny Maryland's 126(b) petition.

c. Maryland utilized outdated modeling platform

According to page A-6 of Maryland's appendix to the petition, Maryland's technical analysis failed to use EPA's latest and most thoroughly reviewed modeling platform. Instead, Maryland chose to use the 2007/2018 MARAMA 7C platform with ERTAC EGU and the EPA 2011v6.2 platform, which does not account for state inputs and more precise emissions.

Further, Maryland did not use the latest version of the mobile source modeling platform, MOVES2014a, to determine mobile source contributions. MOVES2014a, which was available in November 2015, provided significant updates and improvements to the motor vehicle emissions modeling system through calculated non-road equipment emissions, adding VOCs to the list of pollutants, updating gasoline fuels for non-road equipment, default fuel changes, and corrects brake wear emissions, as well as other improvements.¹⁵

By using outdated modeling platforms, Maryland's technical analysis is flawed and fails to support the conclusions drawn from its results. EPA should rely on its updated technical analysis and deny Maryland's 126(b) petition.

¹⁴ <https://www.regulations.gov/document?D=EPA-HQ-OAR-2016-0751-0083>

¹⁵ <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NNR0.txt>

d. Maryland failed to conduct significant contribution analysis

In Table 6 of Maryland's 126(b) petition, Maryland claims that only OMU-Elmer Smith significantly contributes to downwind concentrations in Maryland. However, Duke Energy-East Bend and TVA-Paradise are also named in the 126(b) petition, absent a demonstration through modeling that their emissions are significant contributors to violating ozone concentrations in Maryland. Without a significant contribution analysis, Maryland should not have included Duke Energy-East Bend and TVA-Paradise in its petition.

Furthermore, Maryland determined that OMU-Elmer Smith provided a maximum daily contribution of 0.1 parts per billion of ozone in Maryland.¹⁶ This amount is not considered as "significant" and cannot be measured on an ambient monitor.

As a result of Maryland's failure to conduct a significant contribution analysis, EPA should deny Maryland's 126(b) petition as it relates to Duke Energy-East Bend and TVA-Paradise. Additionally, the maximum daily ozone contribution determined by Maryland for the OMU-Elmer Smith is not considered "significant" and EPA should deny Maryland's 126(b) petition relative to OMU-Elmer Smith.

IV. Current Emissions Trends for Kentucky electric generating units—NO_x Emissions from Kentucky sources are declining

Although VOC and NO_x emissions both contribute to the formation of ground-level ozone, ozone is far more sensitive to NO_x emissions than VOC emissions in the Southeastern United States.¹⁷ In the 2011 FIP ruling for Interstate Transport of Fine Particulate Matter and Ozone, EPA stated that "Authoritative assessments of ozone control approaches have concluded that, for reducing regional scale ozone transport, a NO_x control strategy is most effective, whereas VOC reductions are generally most effective locally, in more dense urbanized areas...EPA continues to believe that the most effective regional pollution control strategy for mitigation of interstate transport of ozone remains NO_x emission reductions."¹⁸ Therefore, controlling NO_x emissions is a more effective strategy in reducing ozone levels than controlling VOC emissions.

The chart below illustrates the decline in emissions from Kentucky electric generating units. In addition to the emissions reductions resulting from the CSAPR update, several coal-fired electric generating units have announced future retirements. Specific to Maryland's 126(b) petition, Owensboro Municipal Utilities (OMU) announced in 2015 their plans to retire Unit 1 at

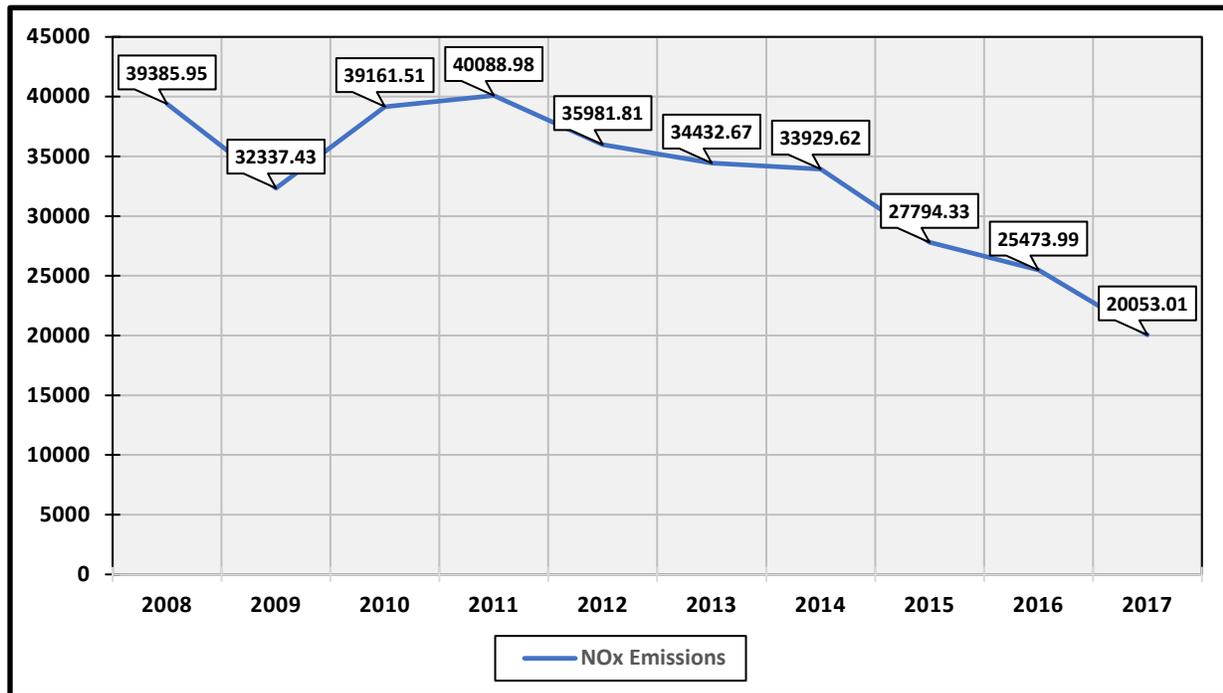
¹⁶ Maryland's petition - Table 6 – *Maximum Daily Ozone Contribution in Maryland in 2011 For a Subset of the 19 Plants Where the 36 EGUs are Located*

¹⁷ Odman, M Talat et al., *Quantifying the sources of ozone, fine particulate matter, and regional haze in the Southeastern United States*, 90 *Journal of Environmental Management* 3155-3168 (2009).

¹⁸ 76 FR 48222

the Elmer Smith Plant by 2019.¹⁹ In March 2017, OMU announced that they will also retire Unit 2 which will effectively close the Elmer Smith Plant in its entirety before 2023.

2008 – 2017 Ozone Season NO_x Emissions for Kentucky EGUs (tons)



Data obtained from EPA's Air Markets Program Data: <https://ampd.epa.gov/ampd/>

The continued reduction of NO_x emissions from Kentucky electric generating units further supports EPA's updated technical analysis and determination that Kentucky does not need to make any additional emissions reductions beyond those required by the 2016 CSAPR Update Rule to meet its statutory obligations for the Good Neighbor provisions of the 2008 ozone NAAQS under the CAA.

Conclusion

In conclusion, each of Kentucky electric generating units identified in Maryland's 126(b) petition have significantly reduced their emissions of NO_x, specifically in 2017. EPA promulgated further emissions reductions in the CSAPR update beginning January 1, 2017. Maryland's technical analysis included in its petition failed to account for these emissions reductions and overestimated future projected emissions from Kentucky electric generating units. For these reasons, Kentucky urges EPA to take final action and deny Maryland's 126(b) petition.

¹⁹ https://omu.org/_uploads/20171019_CCR-Ash-Pond-Initial-and-Post-Closure-Plan.pdf