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May 15, 2017

The Honorable Scott Pruitt  
Administrator  
U.S. Environmental Protection Agency  
Mail Code 1101A  
1200 Pennsylvania Avenue, NW  
Washington, D.C. 20460

RE: Proposed Denial of 176A Petition;  
Docket No. EPA-HQ-OAR-2016-0596.

Dear Administrator Pruitt:

This letter is provided in response to the U.S. Environmental Protection Agency proposed denial of the December 9, 2013, Clean Air Act (CAA) Section 176A Petition submitted by Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island and Vermont. 82 Fed. Reg. 6509 (January 19, 2017). The comment period to this proposal was extended to May 15, 2017. 82 Fed. Reg. 15310 (March 28, 2017).

The attached comments are filed on behalf of the Midwest Ozone Group (MOG). MOG is an affiliation of companies, trade organizations, and associations that has drawn upon its collective resources to seek solutions to the development of legally and technically sound national ambient air quality management program.<sup>1</sup> MOG's primary effort is to work with policy makers in evaluating air quality policies by encouraging the use of sound science. MOG has been actively engaged in a variety of EPA issues and initiatives related to the development and implementation of air quality policy, including the development of transport rules, NAAQS standards, petitions under Sections 176A and 126 of the Clean Air Act, and state developed alternatives to EPA transport rules and the proposed Clean Power Plan. MOG members and participants operate more than 85,000 MW of coal-fired and coal-refuse fired generation in more than ten states. They are concerned about the development of technically unsubstantiated

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<sup>1</sup> The members of and participants in the Midwest Ozone Group include: American Coalition for Clean Coal Electricity, American Electric Power, American Forest & Paper Association, Ameren, Alcoa, ARIPPA, Associated Electric Cooperative, Citizens Energy Group, Council of Industrial Boiler Owners, Duke Energy, East Kentucky Power Cooperative, FirstEnergy, Indiana Energy Association, Indiana Utility Group, LGE / KU, Ohio Utility Group, Olympus Power, and Springfield (IL) City Water P&L.

The Honorable Scott Pruitt  
Administrator  
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interstate air pollution rules and the impacts on their facilities, their employees, their contractors, and the consumers of their electric power.

As set forth in greater detail in our attached comments on the merit of the petition, MOG strongly urges that EPA deny the request by the petitioning states was to expand the OTR pursuant to CAA Section 176A(a) to include the states of Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, West Virginia and Virginia (the “Target States”) within the Ozone Transport Region (OTR). Included among the reasons for the denial of the petition are the following:

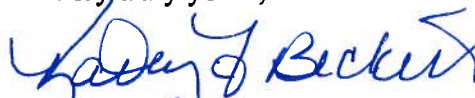
1. Improved Ozone Air Quality Trends Indicate Attainment. The petition fails to account for current air quality in the OTR. EPA has reported that air quality in each eastern state has improved since 2000 at percentages ranging from 11% to 24%, based upon the annual 4th maximum daily 8-hour (MDA8) average. Nationally the improvement is 18% in 2014, with no region in the country showing less than 90% of its monitors attaining 2008 NAAQS concentrations. A report prepared by Alpine Geophysics summarizes ozone air quality data and offers the conclusion that EPA’s data through 2015 show widespread attainment of the 2008 ozone NAAQS in the eastern United States. Emission reductions will continue to be reduced as the result of nothing more than on-the-books controls, as evidenced by the study prepared by Alpine Geophysics that summarizes this fact.
2. EPA Must Clarify that the Clean Air Act does not Provide for “Leveling the Economic Playing Field.” The Petitioning states assert that leveling economics is relevant to the CAA, EPA must deny such posturing as unsupported by law. The CAA does not include the phrase “level economic playing field,” particularly as the basis to support additional controls on downwind units. EPA should address the lack of statutory support for the concept of “leveling the economic playing field.”
3. EPA Air Modeling Projections Support The Denial Of The Petition. Beyond the inadequate data which accompanies the petition, we note that EPA’s modeling of the 2017 ozone season has identified very few monitors which are in nonattainment and all of those appear to be at land/water interfaces. At the request of MOG, Alpine Geophysics has prepared a report entitled “Model Performance Review at Monitors with Complex Meteorology Land-Water Interfaces.” In this report Alpine notes the model uncertainty of certain monitors located in land-water interface areas. EPA’s history on the management of air quality modeling at monitors near land water interface must be reviewed and modified to correct errors and inaccuracies. Addressing these model deficiencies will provide additional support for the denial of the petition. There are also several on-the-books emission reductions programs that have not yet been included in EPA’s modeling of 2017 emissions. These programs, both individually and collectively, at are of sufficient magnitude to have a material effect on air quality in the OTR. The effect of these state emission reduction

programs on air quality in the OTR provides an additional basis for the denial of this Petition.

4. Emission Impact of Local Sources Is Significantly Greater Per Ton on Ozone Concentrations At Local Monitors Than Emissions From Sources In Upwind States. In a report prepared for MOG by Alpine Geophysics entitled "Relative Impact of State and Source Category NOx Emissions on Downwind Monitors Identified Using the 2017 Cross State Air Pollution Rule Modeling Platform," Alpine examined the relationships between state-source category NOx emissions and their relative relationship and impact on ozone concentrations at downwind monitors. This analysis further supports the conclusion that the control of local sources and local transport (particularly legally mandated controls which have yet to be adopted) are key components to addressing residual nonattainment concerns in the region with respect to the 2008 ozone NAAQS and provides an important preview of where emissions reductions must be achieved to most effectively address the 2015 ozone NAAQS.
  
5. International Emissions Impacts on Domestic Air Quality Must Be Addressed in EPA Policy. EPA must assess the impact of natural and manmade international emissions as an integral part of the agency's consideration of the states' petition as required by CAA 179(B). In doing so, EPA has the opportunity and duty to develop a reasonable and reasoned approach to the issue of international emissions so that so-called "upwind states" are not subject to the illegal over-control of emissions as a result of CAA 110(a)(2)(D) Good Neighbor SIPs. Upon assessment of EPA's projected 2023 8-hour ozone design values across the U.S. excluding the international emissions sector, shows not a single monitor in the continental U.S. with a design value exceeding 57 ppb when these boundary and international emissions are excluded. Modeling the U.S. emissions inventory projected to 2023 but without the impact of unregulated emission categories demonstrates that the CAA programs in the U.S. are performing as intended. The role of international emissions provides an additional basis for the denial of the petition.

The Midwest Ozone Group provides this data in support of the EPA denial for the referenced 176A petition. Thank you for the opportunity to provide comment. If you have further questions, please feel free to contact me.

Very truly yours,



Kathy G. Beckett  
Legal Counsel  
Midwest Ozone Group

Enclosure

**COMMENTS OF THE MIDWEST OZONE GROUP  
ON EPA'S PROPOSED DENIAL OF THE 176A PETITION  
FROM CONNECTICUT, MARYLAND, MASSACHUSETTS,  
NEW HAMPSHIRE, NEW YORK, PENNSYLVANIA,  
RHODE ISLAND AND VERMONT**

**MAY 15, 2017**

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**COMMENTS OF THE MIDWEST OZONE GROUP  
ON EPA'S PROPOSED DENIAL OF THE 176A PETITION  
FROM CONNECTICUT, MARYLAND, MASSACHUSETTS,  
NEW HAMPSHIRE, NEW YORK, PENNSYLVANIA, RHODE ISLAND AND  
VERMONT<sup>1</sup>**

**EPA Docket: EPA-HQ-OAR-2016-0596**

**MAY 15, 2017**

On January 19, 2017 (82 Fed. Reg. 6509), EPA proposed to deny the December 9, 2013, Clean Air Act (CAA) Section 176A Petition submitted by Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island and Vermont (the "Petitioning States"). The Petition seeks to include the states of Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, West Virginia and Virginia (the "Target States") within the Ozone Transport Region (OTR). The OTR was established by the 1990 Clean Air Act Amendments to address ozone transport issues within the Northeast Corridor. As a result of the proposed denial, the geographic scope and requirements of the OTR would remain unchanged. EPA set April 13, 2017 as the deadline for filing comments on that proposal. For the reasons articulated below, the Midwest Ozone Group (MOG) supports EPA's proposed denial of the petition.

MOG is an affiliation of companies, trade organizations, and associations that has drawn upon its collective resources to seek solutions to the development of legally and technically sound national ambient air quality management program.<sup>2</sup> MOG's primary effort is to work with policy makers in evaluating air quality policies by encouraging the use of sound science. MOG has been actively engaged in a variety of EPA issues and initiatives related to the development and implementation of air quality policy, including the development of transport rules, NAAQS standards, petitions under 176A and 126 of the Clean Air Act, and state developed alternatives to EPA transport rules. MOG members and participants operate more than 85,000 MW of coal-

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<sup>1</sup> Questions or inquiries about these comments should be directed to David M. Flannery, Kathy G. Beckett, or Edward L. Kropp, Legal Counsel, Midwest Ozone Group, Steptoe & Johnson PLLC, 707 Virginia Street East, Charleston West Virginia 25301; 304-353-8000; [dave.flannery@steptoe-johnson.com](mailto:dave.flannery@steptoe-johnson.com) and [kathy.beckett@steptoe-johnson.com](mailto:kathy.beckett@steptoe-johnson.com) and [skipp.kropp@steptoe-johnson.com](mailto:skipp.kropp@steptoe-johnson.com) respectively. These comments were prepared with the technical assistance of Alpine Geophysics, LLC.

<sup>2</sup> The members of and participants in the Midwest Ozone Group include: American Coalition for Clean Coal Electricity, American Electric Power, American Forest & Paper Association, Ameren, Alcoa, ARIPPA, Associated Electric Cooperative, Citizens Energy Group, Council of Industrial Boiler Owners, Duke Energy, East Kentucky Power Cooperative, FirstEnergy, Indiana Energy Association, Indiana Utility Group, LGE / KU, Ohio Utility Group, Olympus Power, and the Springfield (IL) City Water P&L.



fired and coal-refuse fired generation in more than ten states. They are concerned about the development of technically unsubstantiated interstate air pollution rules and the impacts on their facilities, their employees, their contractors, and the consumers of their electric power.

Since the 176A petition was filed on December 9, 2013, EPA has received correspondence from upwind states, downwind states and stakeholders regarding this petition. This correspondence includes the:

- (a) February 14, 2014, letter from the environmental commissioners and directors representing the states of Illinois, Ohio, Indiana, Tennessee, Kentucky, Virginia, Michigan, West Virginia and North Carolina (in collaboration with the Lake Michigan Air Directors Consortium) disagreeing with the basis for the petition and requesting that the EPA deny the petition;
- (b) May 29, 2015, letter from MOG urging that EPA consider recent air quality, on-the-books control measures and other related information and to conclude that there is no basis upon which the petition can be granted;
- (c) July 7, 2015, letter from state representatives from Ohio, Kentucky, Indiana, West Virginia, North Carolina and Michigan communicating the progress of the voluntary dialogue known as the State Collaborative on Ozone Transport ("SCOOT") that resulted in commitments from utilities in the upwind states to operate nitrogen oxides ("NOx") controls. These states urged that the petition be withdrawn by petitioning states or denied by EPA given the forecasted air quality improvements and declining ozone trends;
- (d) October 30, 2015, letter from petitioning states that provided an update on the SCOOT process and responded to the July 7, 2015, letter from upwind states expressing a need for federally enforceable commitments from states to operate existing controls on existing units; and
- (e) April 6, 2016, letter from petitioning states requesting immediate action to grant the petition acknowledging that EPA's recent proposal to update CSAPR to address interstate transport for the 2008 ozone NAAQS would only partially address ozone transport problems in eastern U.S.

The Petitioning States base their Petition on a variety of technical and legal grounds that are fatally flawed. These comments will describe the errors in the Petitioning States' assertions. These comments will also offer support for EPA's position that there are more effective regulatory actions for managing the Petitioning State's concerns than 176A – many of which are already in progress.

**1. Establishment of an Ozone Transport Region is a Discretionary Decision by the Administrator.**

CAA Section 176A(a) provides the Administrator with authority to develop interstate transport regions for particular pollutants where the Administrator determines that interstate transport of air pollutants from one or more states contributes significantly to violations of air quality standards in other states. Creation of an interstate transport region requires establishment of a transport commission with representatives from each state that make recommendations for the mitigation of the interstate pollution. Congress created one transport region by statute in CAA Section 184(a) in 1990 to address interstate transport of ozone pollution. That transport region is the densely-populated Northeast Ozone Transport Regions (OTR).

The CAA establishes minimum control requirements that apply to sources of emissions in each state in the OTR intended to address transported ozone pollution. The CAA provides the Ozone Transport Commission (OTC) with the authority to recommend additional controls within the region. The EPA proposed denial notes that,

Section 176A(a)(1) of the CAA states that the Administrator may add a state to a transport region if the Administrator has reason to believe that emissions from the state significantly contribute to a violation of the NAAQS within the transport region. For the reasons discussed in this Section, the use of the discretionary term “may” in CAA Section 176A(a) means that the Administrator may exercise reasonable discretion in implementing the requirements of the CAA with respect to interstate pollution by determining whether or not to approve or deny a CAA Section 176A petition. (emphasis in original).<sup>3</sup>

MOG agrees with EPA that the Administrator has discretion to approve or disapprove a petition of this kind. There are not only better approaches for addressing interstate transport, many of those are already being implemented making approval of the Petition unnecessary and unwarranted.

**2. Other programs are already being implemented which reduce ozone precursor emissions.**

In the proposed petition denial, EPA cites numerous “federal and state emission reduction rules that have already been adopted which have resulted or will result in the further reduction of ozone precursor emissions, including emissions from states named in the Section 176A petition...,” concluding that, “[a]s a result of these emissions reductions, the interstate transport

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<sup>3</sup> As discussed elsewhere in these comments, the question to be addressed in connection with a 176A petition is whether emissions from a state significantly contribute to a violation of a NAAQS. Unlike the requirements of CAA 110(a)(2)(D)(i)(1), CAA 176A does not address the “interfere with maintenance” criterion.



of ozone has been and will continue to be reduced over time.”<sup>4</sup> EPA further states that it is “proposing to deny the CAA Section 176A petition because we believe that the statute provides other, more effective means of addressing the impact of interstate ozone transport on the states within the OTR with respect to the 2008 ozone NAAQS.”<sup>5</sup>

EPA’s proposed denial also notes that:

Section 110(a)(2)(D)(i)(I) of the CAA, also referred to as the ‘good neighbor’ provision, requires that states develop SIPs to prohibit emissions that will ‘contribute significantly to nonattainment in, or interfere with maintenance by, any other state’ with respect to a NAAQS. States have primary responsibility for reducing the interstate transport of pollutants, including ozone. EPA believes expansion of OTR is unnecessary at this time and is not the most efficient way to address remaining interstate transport issues for 2008 ozone NAAQS in OTR states because: (a) additional local and regional ozone precursor emissions reductions are expected in the coming years from already on-the-books rules (b) EPA has authority through other CAA provisions (including CAA sections 110 and 126) to develop more effective remedy to address the particular pollutants and sources for this air quality situation. <sup>6</sup>

The Target States are required to provide Good Neighbor SIPs by 2018 independent of this 176A Petition or they will be subject to a Federal Implementation Plan (“FIP”) that will include control requirements to meet the state’s emissions reduction obligations. Those Good Neighbor SIPs necessarily will address downwind impacts of emissions in order to comply with those states’ CAA obligations. The Petitioning States will have an administrative opportunity to participate in the Good Neighbor SIP approval process, to include judicial review of any outcome with which they disagree. The pendency of the submittal of these Good Neighbor SIPs by Target States provides an additional basis for denying the subject petition.

EPA has already acted through the CSAPR Update and its predecessors to establish a transport rule to address the interstate transport of air pollutants from electric generating units (EGUs).<sup>7</sup> The next step in this process is the development of revised Good Neighbor SIPs which will include the CSAPR Update as a major component of the measures to address downwind contributions. As noted, there will continue to be adequate opportunity for the Petitioning States to participate in this process. MOG agrees with EPA that the subject Petition should be denied.

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<sup>4</sup> 82 Fed. Reg. 6509, 6519 (January 19, 2017).

<sup>5</sup> 82 Fed. Reg. at 6520.

<sup>6</sup> 82 Fed. Reg. at 6511.

<sup>7</sup> 80 Fed. Reg. 15706 (December 3, 2015).

The issues of significant contribution to a violation of the ozone NAAQS have been and will continue to be addressed under other more effective enforceable programs.

**3. CAA Section 176A deals only with nonattainment, making maintenance issues extraneous to the issues before EPA in addressing this petition.**

The authorization of the Administrator to establish a transport region is specific. CAA Section 176(A)(a) states that “[w]henver, on the Administrator's own motion or by petition from the Governor of any State, the Administrator has reason to believe that the interstate transport of air pollutants from one or more States contributes significantly to a violation of a national ambient air quality standard in one or more other States, the Administrator may establish, by rule, a transport region for such pollutant that includes such States.” (emphasis supplied.) The words “interference with maintenance,” which play an important role in the development of transport rules and Good Neighbor SIP’s, are not part of the test for the approval of a Section 176A petition. While MOG agrees with EPA that other programs already addressing and impacting the interstate transport of air pollutants, it must be recognized that those programs have broader goals than does Section 176A.

**4. To provide a basis for concluding that a state significantly contributes to nonattainment in the OTR, the petition must establish that the Target States are significant contributors to nonattainment in the Petitioning States.**

CAA Section 110(a)(2)(D) requires state SIPs to:

contain adequate provisions— (i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will— (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility. [emphasis supplied]

EPA’s interpretation of the term “contribute significantly” has evolved through the history of transport rulemaking and was articulated in 2011 when EPA promulgated CSAPR.<sup>8</sup> In the CSAPR rulemaking, EPA used a “1% of the NAAQS” test, which it stated was 0.8 ppb for 8-hour ozone. In the rule, EPA stated the following regarding the significance threshold linking upwind states to downwind states:

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<sup>8</sup> 76 Fed. Reg. 48208, 48236 (July 6, 2011).

In this action, EPA uses air quality thresholds to identify linkages between upwind states and downwind nonattainment and maintenance receptors. States whose contributions to a specific receptor meet or exceed the thresholds identified are considered linked to that receptor; those states' emissions (and available emission reductions) are analyzed further in the second step of EPA's significant contribution analysis. States whose contributions are below the thresholds are not included in the Transport Rule for that NAAQS. In other words, we are finding that states whose contributions are below these thresholds do not significantly contribute to nonattainment or interfere with maintenance of the relevant NAAQS. We use separate air quality thresholds for annual PM<sub>2.5</sub>, 24-hour PM<sub>2.5</sub>, and 8-hour ozone. Each air quality threshold is calculated as 1 percent of the NAAQS. Specifically, we use an air quality threshold of 0.15 µg/m<sup>3</sup> for annual PM<sub>2.5</sub>, 0.35 µg/m<sup>3</sup> for 24-hour PM<sub>2.5</sub>, and 0.8 ppb for 8-hour ozone. (Emphasis added.)

Instead of applying EPA's test for significant contribution, the Petitioning States have created their own test defining significance in their selection of the Target States as a 1% contribution to nonattainment in 5 current OTR states, or 1% contribution to 25 or more nonattainment OTR monitors; or 1% contribution to Baltimore or New York.<sup>9</sup> The creation and use of an alternate test for defining significance that is inconsistent with the established test used by EPA provides an additional basis for denying the petition.<sup>10</sup>

**5. There has already been significant improvement in ozone air quality in the Petitioning States.**

EPA has reported that air quality in each eastern state has improved since 2000 at percentages ranging from 11% to 24%, based upon the annual 4th maximum daily 8-hour (MDA8) average. Nationally the improvement is 18% in 2014, with no region in the country showing less than 90% of its monitors attaining 2008 NAAQS concentrations.<sup>11</sup>

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<sup>9</sup> "Technical Support Document for the Petition to the U.S. Environmental Protection Agency for the Addition of Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, Virginia and West Virginia to the ozone Transport Region," December 9, 2013, p. 15.

<sup>10</sup> For additional information regarding MOG's position on the 1% significant contribution test, see MOG's "Petition for Administrative Reconsideration of the Updated Cross State Air Pollution Rule" dated December 21, 2016, which can be found at: <http://midwestozonegroup.com/files/MOGPetitionforAdministrativeReviewofCSAPRUpdateRuleDecember232016.pdf>.

<sup>11</sup> <http://www3.epa.gov/airtrends/ozone.html>

A report prepared by Alpine Geophysics summarizes ozone air quality data and offers the conclusion that EPA’s data through 2015 show widespread attainment of the 2008 ozone NAAQS in the eastern United States.<sup>12</sup>

Set forth below in Figure A are the most recent ozone design values for the highest ozone monitors in each of the Petitioning States, updated to include monitoring data for 2016.<sup>13</sup> While Connecticut continues to show nonattainment at approximately the same levels as it has in the past, other monitors are at or near attainment with Maryland and New York having 3-year design values of 76 ppb at those highest ozone design value monitors.

State	County	Site ID	4th Highest (ppb)				3-yr Avg (ppb)			
			2013	2014	2015	2016	2011-13	2012-14	2013-15	2014-16
Connecticut	Fairfield	90019003	86	81	87	87	87	85	84	85
Maryland	Cecil	240150003	72	74	74	80	82	77	73	76
New York	Richmond	360850067	71	72	79	77	78	73	74	76
Delaware	New Castle	100031010	63	74	71	78	73	71	69	74
Massachusetts	Hampden	250130008	71	65	70	76	73	70	68	70
Rhode Island	Kent	440030002	73	67	70	75	74	70	70	70
New Hampshire	Hillsborough	330115001	67	70	66	69	67	70	67	68
Maine	York	230312002	76	66	67	68	75	73	69	67
Vermont	Bennington	500030004	62	61	63	67	62	63		63

Figure A. Petitioning States Design Values for Highest Ozone Monitors by State. (Pink = values equal to or above 76 ppb. Yellow = values equal to or above 71 ppb).

**6. Emission reductions will continue to be reduced as the result of nothing more than on-the-books controls.**

Emission reductions of ozone precursors have been significant in recent years and will continue into the future as the result of on-the-books controls. As published by EPA, annual national and state-level NOx emissions are expected to decline between 2011 and 2017. A study prepared by Alpine Geophysics summarizes this data.<sup>14</sup> Figure B, set forth below, illustrates state-level annual NOx emissions from all anthropogenic categories for the base year 2011 and projected base case of 2017. As can be seen in Figure B, NOx emissions from the CSAPR states will have decreased by approximately 2,450,000 tons (27%) from 2011 to 2017. Comparatively, annual NOx emissions from electric generating utilities (EGUs) will have decreased by 373,000

<sup>12</sup>[http://www.midwestozonegroup.com/files/Current\\_Ozone\\_Design\\_Values\\_and\\_Widespread\\_Attainment\\_of\\_the\\_2008\\_8-hr\\_Ozone\\_NAAQS2.pdf](http://www.midwestozonegroup.com/files/Current_Ozone_Design_Values_and_Widespread_Attainment_of_the_2008_8-hr_Ozone_NAAQS2.pdf)

<sup>13</sup> [http://aqsdrl.epa.gov/aqsweb/aqstmp/airdata/download\\_files.html](http://aqsdrl.epa.gov/aqsweb/aqstmp/airdata/download_files.html)

<sup>14</sup>[http://www.midwestozonegroup.com/files/CSAPR\\_Documented\\_Emission\\_Reductions\\_and\\_Control\\_Scenarios.pdf](http://www.midwestozonegroup.com/files/CSAPR_Documented_Emission_Reductions_and_Control_Scenarios.pdf)

tons, or 26% from 2011 to 2017.

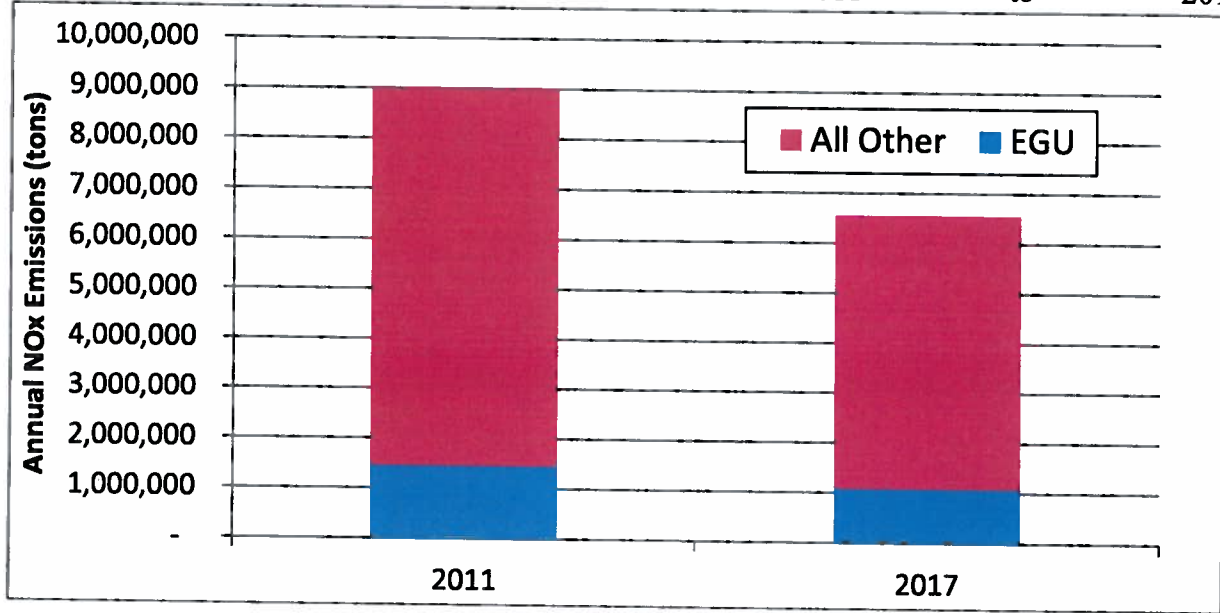


Figure B. Annual NOx emission reduction trends, all sources and EGUs

And as seen from Figure C below, EGU emissions are on-track to be reduced to a much greater level than EPA has projected.

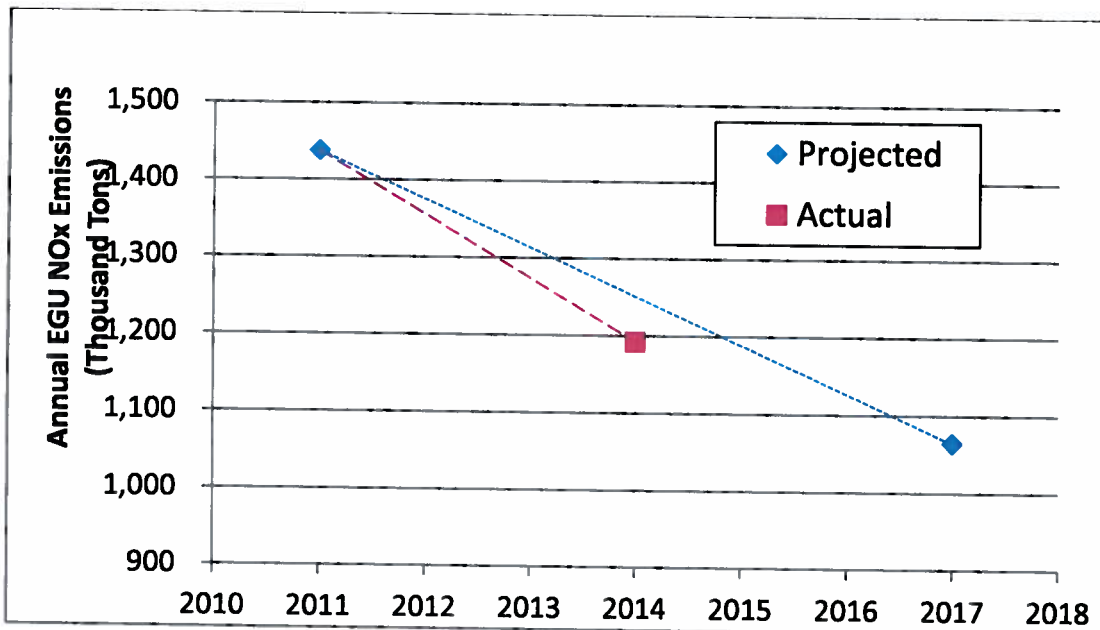


Figure C. Annual EGUs NOx Emission Trends and Projection.

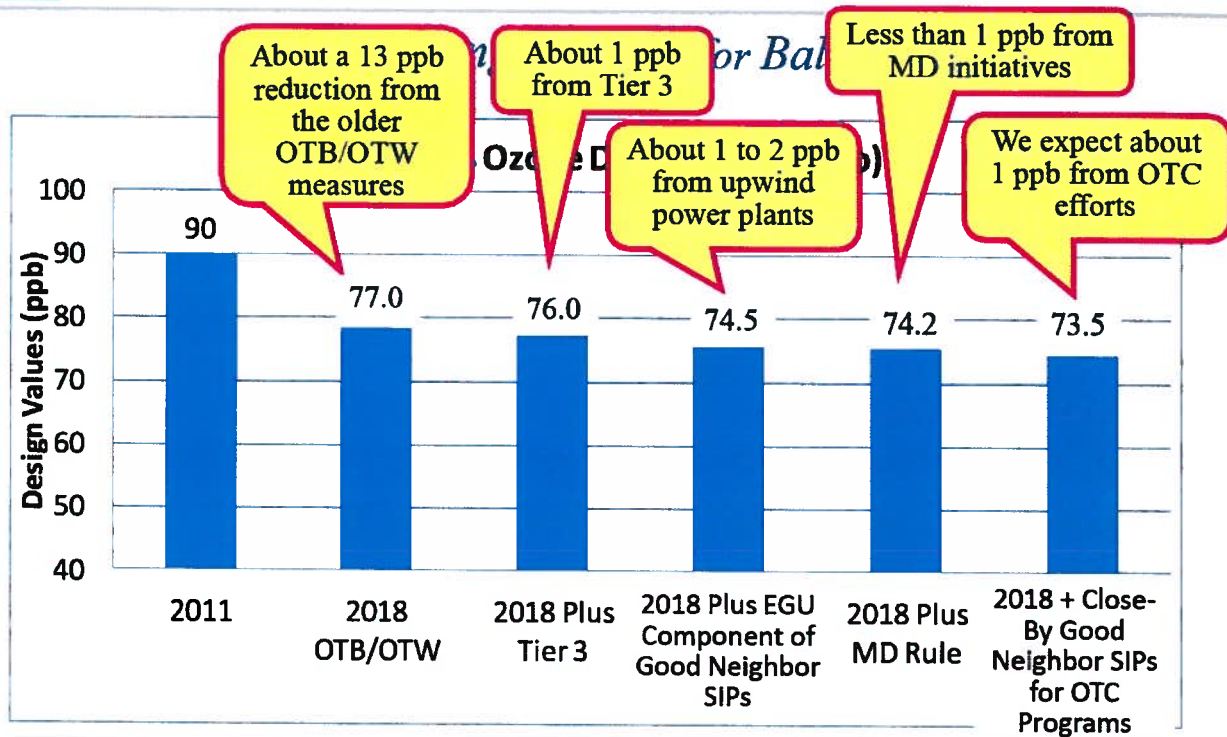
The expected improvement in air quality is perhaps best illustrated by the material presented by the State of Maryland at the April 14, 2015 New Jersey Clean Air Council



Hearing.<sup>15</sup> Maryland used the following chart to show how they believe these additional control programs will bring its monitors into attainment. The Maryland presentation shows how they believe that Maryland will be able to reach attainment with the 75 ppb ozone NAAQS with on-the-books/on-the-way controls, Tier 3 controls, OTC measures and local Maryland initiatives – without additional emission reductions from upwind states.



## Where Do Reductions Come From?



In its final CSAPR update rule, EPA identified only two residual nonattainment monitors from within the 176A OTR Petitioning States: Connecticut monitor 090019003 in Fairfield, and Connecticut monitor 090099002 in New Haven. As can be seen Figure D below, the final 2017 CSAPR budget control strategy achieves a resulting 2017 average design value for both of these monitors of 76.0 ppb, just 0.1 ppb above the attainment threshold of the final rule.<sup>16</sup> Had EPA included the full set of NO<sub>x</sub> and volatile organic compounds (“VOC”) reductions identified in Pennsylvania’s RACT II rule,<sup>17</sup> beyond the estimated NO<sub>x</sub> reductions associated with EGU

<sup>15</sup> <http://midwestozonegroup.com/files/MOGMay7Final050515.pdf>

<sup>16</sup> EPA-HQ-OAR-2015-0500-0555, Table D-8.

<sup>17</sup> 25 PA. Code §§129.91-129.95.



sources, it can be reasonably concluded that the projected design values at both of these monitors would have achieved attainment with the 2008 ozone NAAQS.<sup>18</sup>

<b>Final CSAPR Update Identified Nonattainment Monitor</b>	<b>Proposed CSAPR Update Base Case Modeling for 2017</b>	<b>Final CSAPR Update Base Case Modeling for 2017 (without PA RACT II controls)</b>	<b>Final CSAPR Update Base Case Modeling for 2017 (with partial PA RACT II NOx controls)</b>	<b>Final CSAPR Update Control Strategy Case Modeling for 2017 (considering final CSAPR budgets)</b>
Connecticut - Fairfield (90019003)	78.0	76.5	76.3	76.0
Connecticut - New Haven (90099002)	77.2	76.2	76.1	76.0

Figure D. CSAPR Update Impacts on Connecticut Ozone Nonattainment.

It also should be noted that as part of the review of the EPA data supporting the proposed transport rule, Alpine Geophysics prepared a report entitled “Model Performance Review at Monitors with Complex Meteorology Land-Water Interfaces.”<sup>19</sup> In this report Alpine notes the model uncertainty of certain monitors located in areas of complex meteorology. Set forth below as Figure E is a map that shows the location of the remaining two nonattainment monitors in the Petitioning States. For multiple eastern state land-water interface monitors, Alpine reviewed the EPA published model performance evaluation (MPE) metrics for ozone and compared them to additional MPE metrics from the same modeling platform.

Alpine’s review is based on EPA’s own nonattainment modeling guidance related to finer grid cell size selection for areas demonstrating a combination of complex meteorology, strong gradients in emissions sources, and/or land-water interfaces in or near the nonattainment area(s).<sup>20</sup> Alpine found that the 3x3 maximum ozone concentrations selected at these land/water boundary locations were insufficiently accurate, in both bias and error, to be considered as representative of the daily concentrations observed at each monitor. There were also inaccuracies relative to the ten days selected for the relative response factor calculation used in projecting attainment design values.

Alpine noted that this poor performance will have a direct impact on the future year attainment demonstration and significant contribution calculations. Since EPA did not change its methodology or grid resolution selection between the reviewed proposed rule and final rule

<sup>18</sup> A discussion of the significance of Connecticut’s failure to have adopted RACT requirements of its own is set forth elsewhere in these comments.

<sup>19</sup> <http://www.midwestozonegroup.com/files/ModelPerformanceReviewatMonitorswithComplexMeteorologyLand-WaterInterfaces.pdf>

<sup>20</sup> [https://www3.epa.gov/ttn/scram/guidance/guide/Draft\\_O3-PM-RH\\_Modeling\\_Guidance-2014.pdf](https://www3.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf)

update modeling, one can reasonably conclude that these issues are still found in the projected design value calculations for these monitors.



Figure E. Remaining Petitioning State Nonattainment Monitors Located on Land/Water Interface.

These findings were corroborated by a recent analysis conducted by members of the OTC Modeling Committee which was presented at the OTC/MANE-VU Fall Meeting of November 2016.<sup>21</sup> In this analysis, the Modeling Committee reported that poor model performance at land-water interface monitors indicates risk of substantial over-prediction of design values as monitor response becomes “rigid” and does not respond to the impacts of upwind control. OTC representatives represented they are actively pursuing alternative modeling methodologies to mitigate the misleading modeled design values at monitoring locations subject to land-water interfaces.

The recognized poor performance of the model at land-water interface and the projected 2008 ozone NAAQS attainment in the Petitioning States in combination are supportive of EPA’s proposal to deny the Petition. Both of these issues on the projected design value at the two remaining nonattainment monitors and the likelihood that there will not be any nonattainment of the 2008 ozone NAAQS in any the Petitioning States should be cited by EPA as additional bases for denying the Petition.

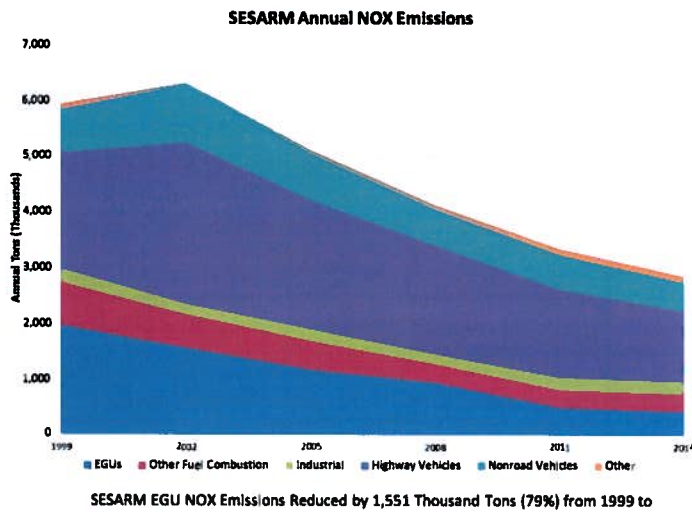
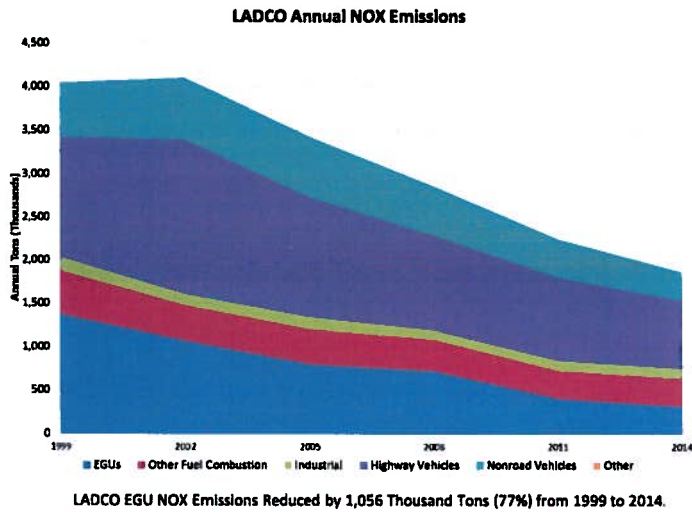
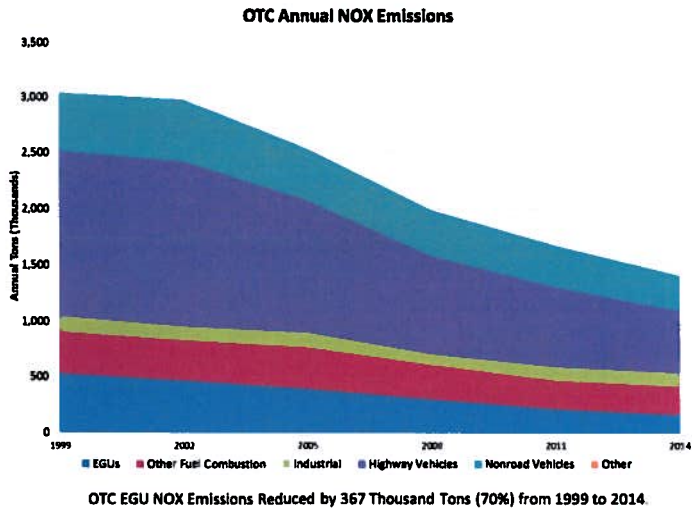
<sup>21</sup> <http://otcair.org/upload/Documents/Meeting%20Materials/Underhill%20-%20OTC%20Modeling%20-%20Fall%20Commission%20Meeting.pdf>

7. **Petitioners seek to use the 176A process to achieve a “level economic playing field” that is not authorized in the CAA and ignores the significant and adequate emission reductions that sources in the upwind states have achieved under current federal and state regulatory programs.**

In the cover letter to the Petition, the Petitioners state that they “... believe these states [the upwind Target States] are the most significant contributors to continued ozone standard violations in the OTR and that expansion of the region will result in more emission reductions, a fairer distribution of the burdens of controlling air pollution (ozone), and a level economic playing field.” (Emphasis added.) Nowhere in the CAA is the phrase “level economic playing field” found, especially as the basis to support additional controls on downwind units. The CAA requires the establishment of a national program resulting in ambient air quality that is protective of human health with an adequate margin of safety. That is the sum and substance of the primary air quality standards established by EPA under the CAA. There is no legal basis for Petitioners to request EPA to require emission reductions from upwind states in order to level an alleged uneven economic playing field among states. Accordingly, EPA may not consider the economic relations among states in making a determination regarding whether to grant or deny the pending Petition.

In addition, the Petitioning States ignore emissions reductions already achieved in states targeted by the Petition that are much more significant than reductions recorded for the OTR. The graphs below set forth in Figures F show that from 1999 to 2014 EGU NO<sub>x</sub> emissions have been reduced in the OTR states by 70%; in the LADCO states by 77%; and in the Southeastern States Air Resources Managers (“SESARM”) states by 79%. The states targeted by this Petition are all located in either SESARM or LADCO and are therefore in areas which have experienced recent emission reductions that are larger than reductions in the OTR.

## Figures F. Regional Annual NOx Emissions



The Petitioning States erroneously assert that OTR states have adopted and implemented numerous and increasingly stringent controls on sources of VOCs and NOx that may not currently be required for sources in the upwind states. The Petitioning States are proffering that expansion of OTR will result in more emission reductions, fairer distribution of burdens of controlling air pollution, and a level economic playing field. Figure G sets forth a comparison of actual emissions in 2011 to EPA projected emissions in 2017. This graphic illustrates that the Target States have reduced emissions by the same percentage as have the NE OTR states and that in the aggregate reductions between the regions are equivalent.

State	All Source NOx Emissions (Tons/Yr)		
	2011	2017	% Difference
Connecticut	72,349	47,369	-34.53%
Delaware	29,879	19,056	-36.22%
District of Columbia	9,274	6,052	-34.74%
Maine	61,886	45,398	-26.64%
Maryland	167,249	111,281	-33.46%
Massachusetts	136,433	91,877	-32.66%
New Hampshire	36,895	23,115	-37.35%
New Jersey	189,647	128,493	-32.25%
New York	394,301	273,711	-30.58%
Pennsylvania	567,986	415,149	-26.91%
Rhode Island	22,346	16,029	-28.27%
Vermont	20,692	15,322	-25.95%
<b>OTR State Total</b>	<b>1,708,937</b>	<b>1,192,851</b>	<b>-30.20%</b>
Illinois	537,448	389,290	-27.57%
Indiana	461,398	338,366	-26.67%
Kentucky	340,530	239,415	-29.69%
Michigan	453,616	310,299	-31.59%
North Carolina	377,978	245,989	-34.92%
Ohio	560,058	375,851	-32.89%
Tennessee	333,776	224,457	-32.75%
Virginia	320,726	208,870	-34.88%
West Virginia	177,087	163,875	-7.46%
<b>Target State Total</b>	<b>3,562,617</b>	<b>2,496,411</b>	<b>-29.93%</b>

Data Source: EPA-HQ-OAR-2015-0500-0502

Figure G. 2011 Actual to 2017 Projected Emissions by State.

It is notable that the NOx emissions from all sources in the Target States will decline by about 30% between 2011 and 2017 and emissions from all sources in the OTR will decline by a virtually identical percentage.

As shown in Figure H, the 22 state CSAPR actual NO<sub>x</sub> emission trends from EGUs also are below projected levels.

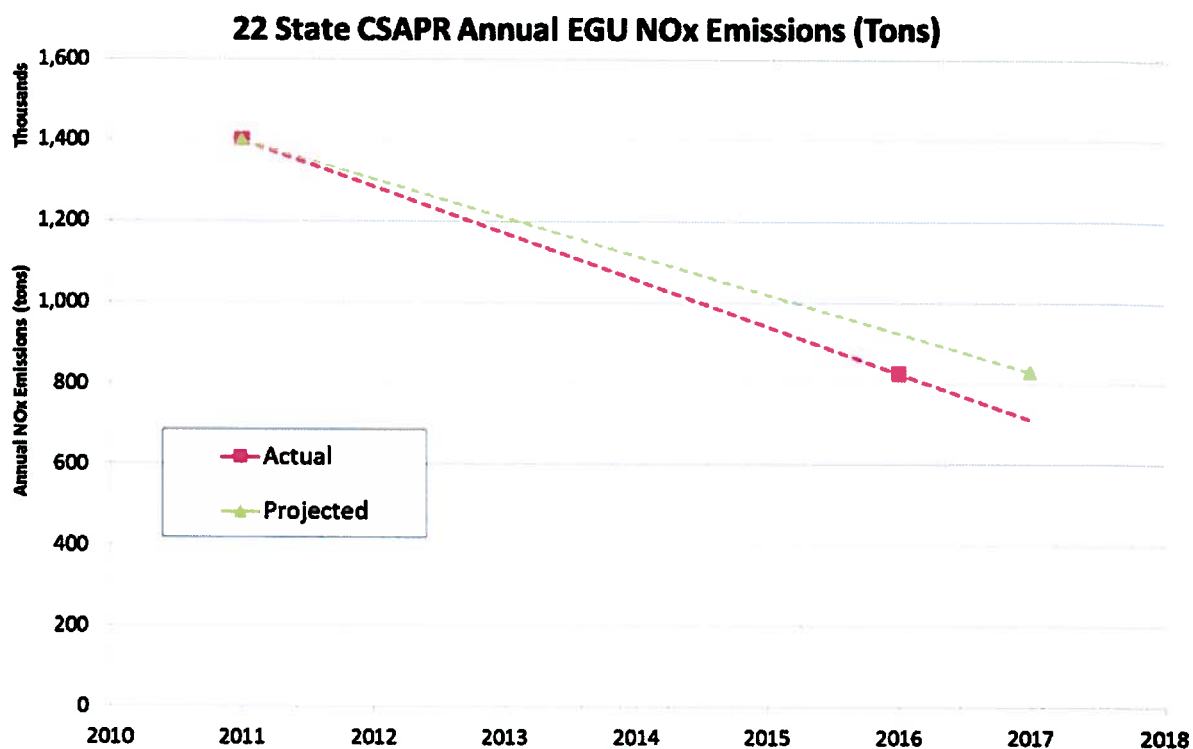


Figure H. 22 State CSAPR Annual EGU NO<sub>x</sub> Emissions.

**8. EPA air modeling projections do not take into account significant emission reduction programs that are legally mandated to occur.**

There are also several on-the-books emission reductions programs that have not yet been included in EPA’s modeling of 2017 emissions. These programs, both individually and collectively, are of sufficient magnitude to have a material effect on air quality in the OTR. EPA’s decision to deny the Petition’s request to add upwind states into the OTR (and thereby impose new and unwarranted controls on their sources) avoids the prohibition against over-control established under applicable case law. These additional control programs not yet reflected in EPA’s modeling include the following on-the-books regulatory programs.

a. Pennsylvania RACT.

The final Pennsylvania Reasonably Available Control Technology II (“PA RACT II”) requirements apply to major NO<sub>x</sub> or VOC emitting facilities in existence on or before July 20, 2012.<sup>22</sup> The applicability threshold for the PA RACT II rule is 100 and 50 tons per year for

<sup>22</sup> 25 PA. Code §§129.91-129.95.



NOx and VOC, respectively, including the five-county Philadelphia region (i.e., Bucks, Chester, Delaware, Montgomery, and Philadelphia counties).

The PA RACT II rule became effective on January 1, 2017. Consequently, these new and additional regulations limiting Pennsylvania EGU NOx emissions, as well as emissions from other major sources of NOx and VOC, began on that date. Those emissions reductions are now being achieved on a year – round basis. From a report prepared by Olympus Power, LLC entitled “Estimation of Pennsylvania RACT II Rule on Pennsylvania Ozone Season NOx Emissions from Electric Generation Units,” it is apparent that EGU NOx emissions from EGUs in 2017 will only be about 27,010 tons per ozone season, compared with 44,551 tons of actual EGU NOx emissions reported for CAMD ozone season emissions in 2014 – a 39% reduction.<sup>23</sup> More significantly, when these 2017 NOx emissions are compared with EPA IPM 5.14 data (which predicted ozone season EGU NOx emissions to be 52,173 tons) – a 48% reduction is realized. The Olympus Power, LLC emission estimation is consistent with the Pennsylvania Department of Environmental Protection’s (PADEP) estimation of EGU ozone season NOx emissions which is a range of 20,588 to 29,540 tons of NOx.

b. Connecticut RACT

The CAA addresses the affirmative obligations of the states to meet the deadlines for submittal and implementation of SIPs designed to specifically address their degree of nonattainment designation. Review of Section 172(c)(1) of the CAA provides that SIPs for nonattainment areas shall include “reasonably available control measures,” including “reasonably available control technology” (RACT), for existing sources of emissions. Section 182(a)(2)(A) requires that for marginal ozone nonattainment areas, states shall revise their SIPs to include RACT. Section 182(b)(2)(A) of the CAA requires that for moderate ozone nonattainment areas, states must revise their SIPs to include RACT for each category of VOC sources covered by a CTG document issued between November 15, 1990, and the date of attainment. CAA Section 182(c) through (e) applies this requirement to States with ozone nonattainment areas classified as Serious, Severe and Extreme. The CAA also imposes the same requirement on States in OTR.

In its “Reasonably Available Control Technology Analysis under the 2008 8-Hour Ozone National Ambient Air Quality Standard,” dated July 17, 2014, the Connecticut Department of Energy and Environmental Protection (“DEEP”) Bureau of Air Management conducted an evaluation of its RACT controls.<sup>24</sup> The principal conclusion reached by Connecticut was as follows:

DEEP commits to perform further evaluation of Connecticut’s municipal waste

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<sup>23</sup> <http://www.midwestozonegroup.com/files/PARACTNOx.pdf>.

<sup>24</sup> [http://www.ct.gov/deep/lib/deep/air/ozone/ozoneplanningefforts/ract\\_2008\\_naaqs/2014-07-17\\_-\\_ct\\_final\\_ract\\_sip\\_revision.pdf](http://www.ct.gov/deep/lib/deep/air/ozone/ozoneplanningefforts/ract_2008_naaqs/2014-07-17_-_ct_final_ract_sip_revision.pdf)

combustor and fuel-burning source NOx requirements and to seek any regulatory revisions necessary to revise the control requirements to a RACT level for the 2008 ozone NAAQS. The main basis for the determination that these source categories are no longer subject to RACT is that other states now have in place emissions limitations that are more stringent than those required in Connecticut, so the more stringent emission limits, and the controls necessary to meet those emission limits, are technically and economically feasible.<sup>25</sup>

With respect to Municipal Waste Combustors the Connecticut report offered the following statement:

Connecticut has six facilities that burn municipal waste to create electricity and are comprised of a total of 15 units. Only three of the units are small municipal waste combustors, as defined by EPA in 40 CFR 60 Subpart AAAA and the associated emissions guidelines. Together, these 15 units are one of the most significant sources of NOx emissions in Connecticut. In 2011, the municipal waste combustor NOx emissions exceeded those of Connecticut's electric generating sector to become the largest stationary source category of NOx emissions in Connecticut.

...

Based on these observations, DEEP believes that it may be both technically and economically reasonable to reduce NOx emissions from the Connecticut municipal waste combustor facilities. The municipal waste combustor units at the Bristol facility, at which the LN™ technology has been installed, are mass burn waterwall units, which are the dominant combustor type in Connecticut.<sup>27</sup> New Jersey has adopted, and Massachusetts has proposed to adopt, a NOx emissions limit for mass burn waterwall units that is more stringent than Connecticut's emissions limit .... In addition, Massachusetts has proposed to adopt a NOx emissions limit for mass burn refractory units that is more stringent than Connecticut's emissions limit .... DEEP commits to investigate the cost and emissions reductions available from the municipal waste combustors and, if appropriate, initiate a stakeholder process to develop a regulatory amendment. DEEP would seek to move such an amendment through the regulatory adoption process to allow for adoption by December 31, 2016.<sup>26</sup>

With respect to Fuel-Burning Sources (Boilers, Turbines, Engines) the Connecticut report observed as follows:

Revisions to the NOx emissions control requirements for boilers, turbines and engines in RCSA section 22a-174-22 are necessary to establish a RACT level of control under the 2008 ozone NAAQS. Several nearby states, including New York and New Jersey, have updated NOx RACT regulations, and other states, including Maryland, are currently reviewing existing NOx RACT requirements with respect to boilers, turbines and engines. The Ozone Transport Commission (OTC) has also recently reviewed the short-term NOx emissions limitations for fuel-burning equipment

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<sup>25</sup> *Id.* at 28.

<sup>26</sup> *Id.* at 28-29.

throughout the Ozone Transport Region in part to allow states to address emissions from demand response units and other units that operate intermittently to meet electric demand, particularly in the summer months.

...

Based on the comparison of Connecticut's NOx emissions limitations with those in other states ..., reductions in the emissions limitations of RCSA section 22a-174-22 are necessary, likely in conjunction with an elimination or adjustment of the NOx credit trading program, so that Connecticut's boilers, turbines and engines are controlled to a RACT level with respect to the 2008 ozone NAAQS.<sup>27</sup>

There is a clear statutory and regulatory mandate for states such as Connecticut to have adopted updated RACT controls in advance of the 2017 ozone season. The reductions related to these RACT-based controls will have a direct impact on air quality and affect the merit of the Petition. The effect of these local emissions on air quality in the OTR provides an additional basis for the denial of this Petition.

c. OTC Measures

With respect to OTC programs, the State of Maryland has identified that the OTC states are implementing nine programs that will reduce both NOx and VOC.<sup>28</sup> These 9 programs (set forth in Figure I) will result in a total of nearly 27,000 tons of ozone season NOx and 22,000 tons of ozone season VOC emission reductions.

<b>OTC Model Control Measures</b>	<b>Regional Reductions (tons per year)</b>	<b>Regional Reductions (tons per day)</b>
Aftermarket Catalysts	14,983 (NOx) 3,390 (VOC)	41 (NOx) 9 (VOC)
On-Road Idling	19,716 (NOx) 4,067 (VOC)	54 (NOx) 11 (VOC)
Nonroad Idling	16,892 (NOx) 2,460 (VOC)	46 (NOx) 7 (VOC)
Heavy Duty Inspection & Maintenance	9,326 (NOx)	25 (NOx)
Enhanced SMARTWAY	2.5%	

<sup>27</sup> *Id.* at pp. 30 and 32.

<sup>28</sup> [http://midwestozonegroup.com/files/MOG\\_May\\_7\\_Final\\_050515.pptx](http://midwestozonegroup.com/files/MOG_May_7_Final_050515.pptx)

Ultra Low NOx Burners	3,669 (NOx)	10 (NOx)
Consumer Products	9,729 (VOC)	26 (VOC)
AIM	26,506 (VOC)	72 (VOC)
Auto Coatings	7,711 (VOC)	21 (VOC)

Figure I. OTC NOx and VOC Reduction Programs.

Here too, we urge EPA to assess these programs and their impacts on air quality in the Petitioning States to determine whether they will have any prospective nonattainment of the ozone NAAQS.

**9. Increases in ozone concentrations in 2016 occurred at a time when EGU emissions decreased.**

These data set forth in Figure J show the dramatic improvement in air quality that has occurred in the Petitioning States has continued in more recent years for most of the highest monitors. For some, however, 2016 saw an increase in ozone concentrations. This is a particularly curious development because EGU NOx emissions in 2016 continued the downward trend that has been observed for many years. EPA's final assessment of the merits of the 176A petition should examine which categories of emission sources may have caused this increase.

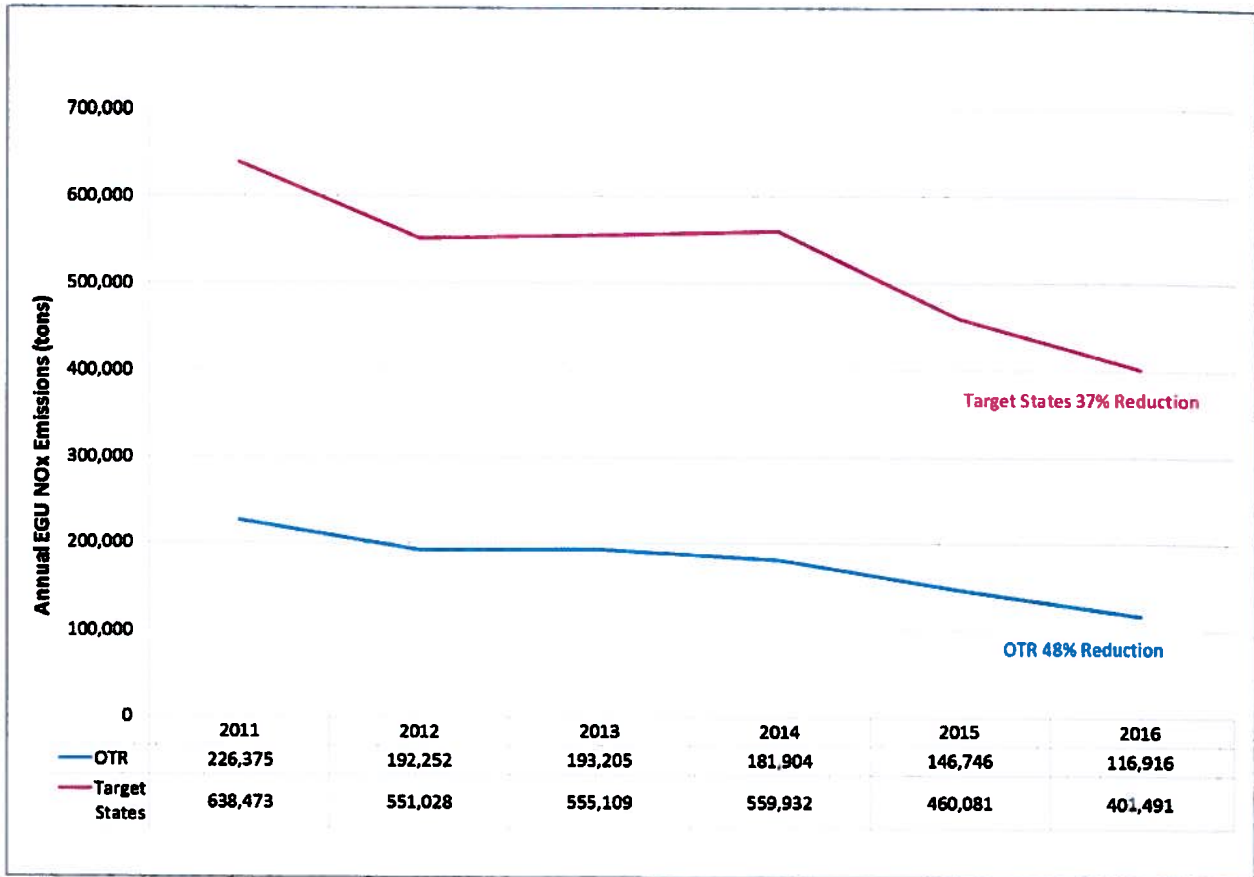


Figure J. Annual NOx Emissions of Target States and the OTR.

**10. OTR states are significant contributors to any remaining nonattainment and are therefore responsible for reducing NAAQS violations not attributable to upwind states.**

MOG has performed Ozone Source Apportionment Technology (“OSAT”) assessment analysis of EPA’s modeling in support of the proposed CSAPR Update rule to determine which sources are contributing to the highest monitors in each of the Petitioning States that have 2016 design values above 75 ppb.<sup>29</sup> As can be seen from Figures K, emission sources in the Target States are small relative to emissions from the OTR states or other source regions. Indeed, the data demonstrate that:

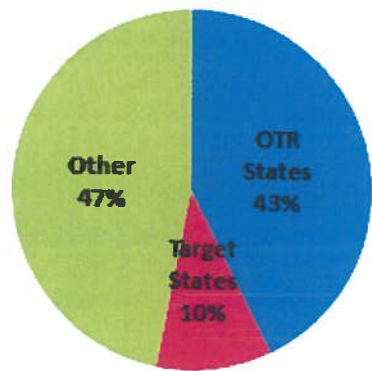
1. The OTR states have a greater impact on the worst case monitors than do emissions from the Target States ( a result that is made all the more significant because certain of the OTR states have not yet adopted new or revised control requirements that are legally mandated in states which have nonattainment);

<sup>29</sup> <https://protect-us.mimecast.com/s/OQg9B4FZK56uk?domain=midwestozonegroup.com>

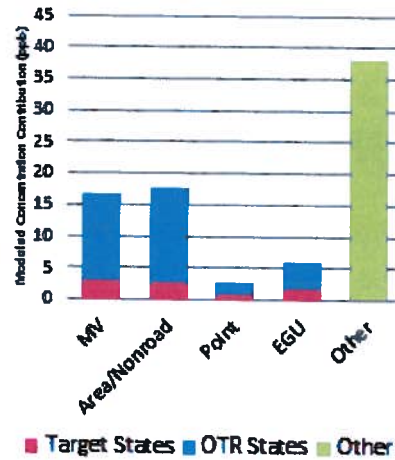
2. Emission sources from other regions are always greater than emissions from sources in the Target States;
3. Emissions are consistently higher in source categories of OTR motor vehicle, nonroad mobile, and area source contribution than any other source category.

Figures K. OSAT Analyses for Fairfield, CT; Cecil, MD; and Richmond, NY.

## Fairfield, Connecticut

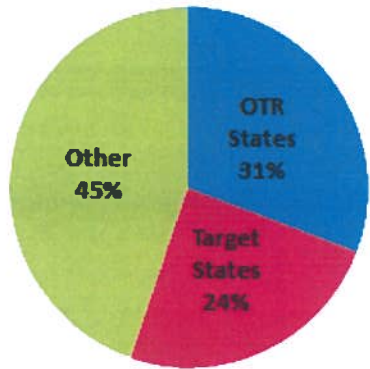


2017 CSAPR Modeling Platform  
Ozone Source Apportionment Results

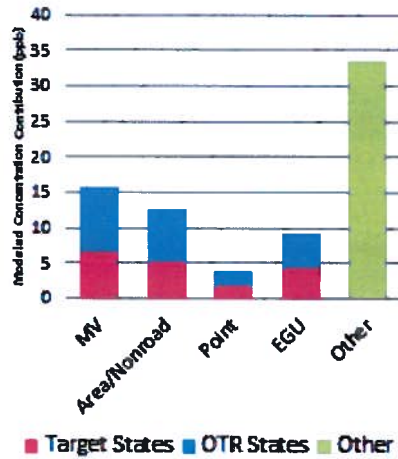




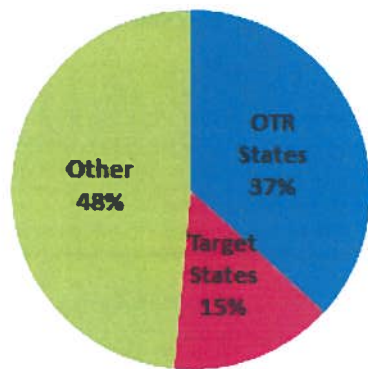
## Cecil, Maryland



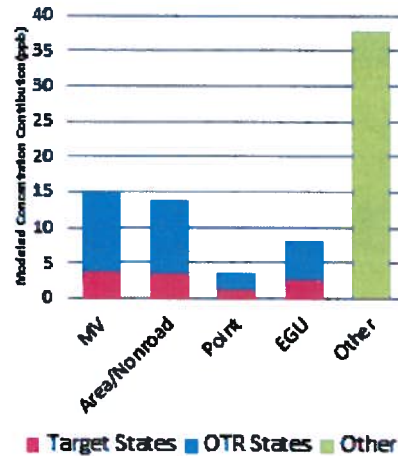
2017 CSAPR Modeling Platform  
Ozone Source Apportionment Results



## Richmond, New York



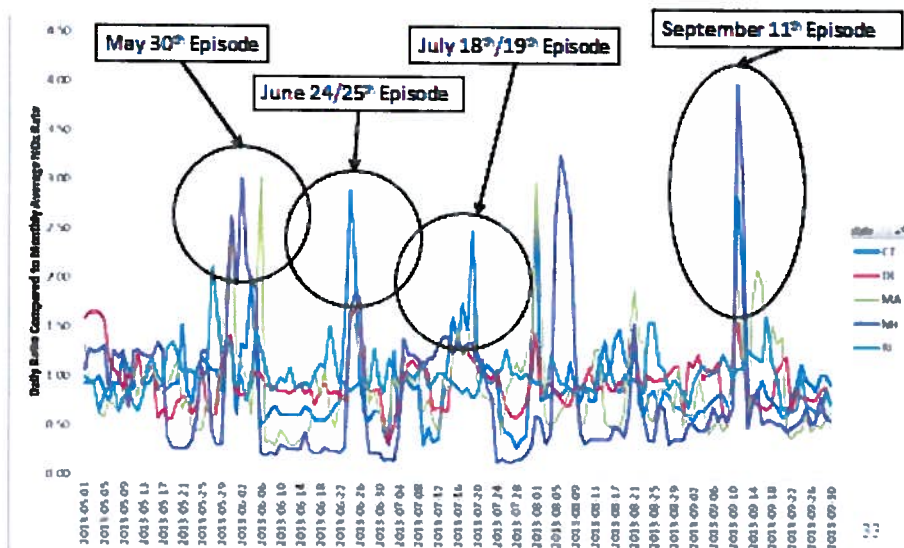
2017 CSAPR Modeling Platform  
Ozone Source Apportionment Results



11. **Data indicate that EGU emissions from outside of OTR are not contributing significantly to high episode ozone concentrations within the OTR.**

Figures L and M generated by Alpine below demonstrate that on multiple high ozone days observed in 2013, EGUs located in OTR states, excluding Pennsylvania, had measured NOx emission rates that were more than double their normal monthly emission rate. Also it is apparent that EGU NOx emission rates in the Target States, including Pennsylvania, remained consistent with their normal monthly emission rate. Therefore, it should be concluded that increases in OTR EGU NOx emission rates, excluding Pennsylvania, and associated emissions constitute a greater contribution to these high ozone episodes in the OTR than target state EGU sources and their relatively unchanged operational NOx emission rates. In conjunction with the source-apportionment analyses discussed, it also is reasonable to conclude from these data that EGUs in Target States and Pennsylvania are not contributing significantly to peak ozone concentrations observed in downwind petitioning states.

### STATE LEVEL EGU NOX EMISSION RATE RATIOS DAILY VS. AVERAGE MONTHLY RATE



### STATE LEVEL EGU NOX EMISSION RATE RATIOS DAILY VS. AVERAGE MONTHLY RATE

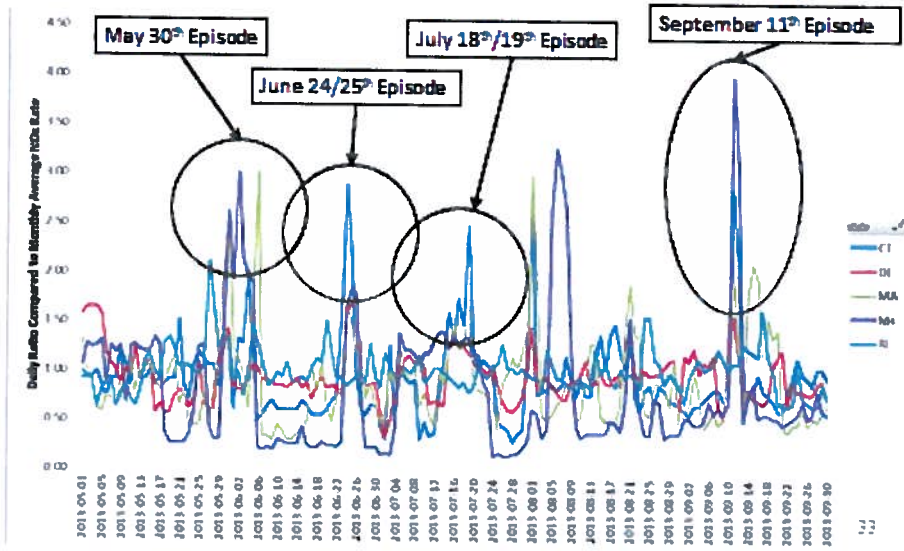


Figure L. State Level EGU NOx Emission Rate Ratios Daily vs. Ave. Monthly Rate.

### STATE LEVEL EGU NOX EMISSION RATE RATIOS DAILY VS. AVERAGE MONTHLY RATE

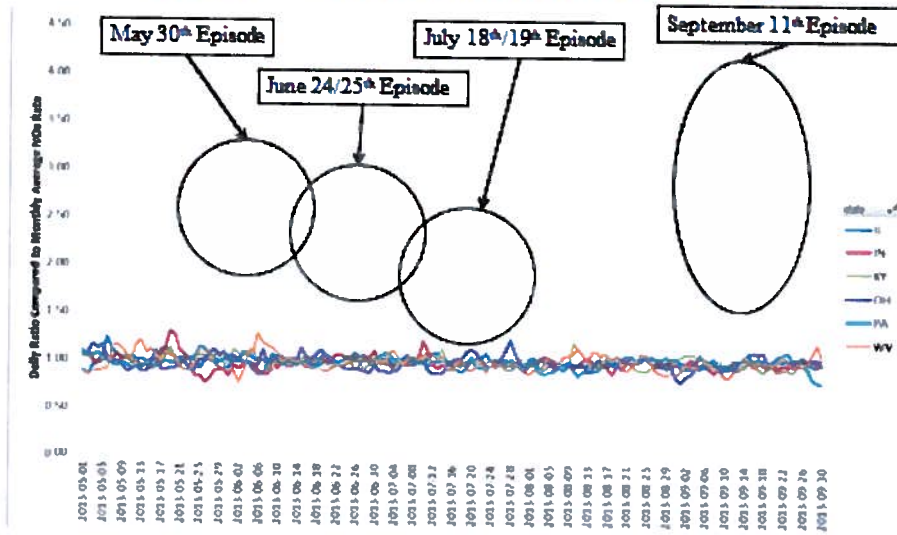


Figure M. State Level EGU NOx Emission Rate Ratios Daily vs. Average Monthly Rate.

Alpine has completed a similar review for the recent 2016 ozone season. As noted by the circles in Figures N, O and P, four events were selected during 2016 where there were three or more consecutive days of observed MDA8 values greater than 75 ppb at monitors located in the OTR. Figure O is a graph that shows days in which daily NOx emission rates from EGUs in the states of Connecticut, Delaware, Maryland, New Jersey and New York during the 2016 ozone season were more than one and a half to two times their normal monthly calculated NOx rate. There is a close relationship between peaking NOx emission rates in those states and the high ozone days involved. By comparison, Figure P shows that during those same ozone episodes, daily EGU NOx emission rates in the Target States, including Pennsylvania, remained consistent with their normal monthly emission rate. The increases in OTR EGU NOx emission rates (and associated emissions) constitute a greater contribution to these high ozone episodes in the OTR than target state EGU sources and their relatively unchanged operational NOx emission rates.

Figure N. 2016 Observed MDA8 Days Greater than 75 ppb at OTC Monitors

Date	ppb	state	county	Date	ppb	state	county
05-24-2016	76	New York	Wayne	07-18-2016	84	Connecticut	Middlesex
05-25-2016	89	Connecticut	Fairfield	07-21-2016	87	Connecticut	Fairfield
05-26-2016	99	Connecticut	Fairfield	07-22-2016	100	Connecticut	Middlesex
05-27-2016	81	Connecticut	Fairfield	07-25-2016	77	Maryland	Anne Arundel
05-28-2016	81	Connecticut	Fairfield	07-26-2016	91	Maryland	Baltimore
06-01-2016	77	Maryland	Carroll	07-27-2016	108	Maryland	Baltimore
06-07-2016	78	Connecticut	New Haven	07-29-2016	78	Maryland	Baltimore
06-11-2016	80	New York	Chautauqua	08-11-2016	87	Connecticut	Fairfield
06-16-2016	79	New York	Suffolk	08-12-2016	79	Connecticut	Fairfield
06-20-2016	80	Maryland	Cecil	08-13-2016	77	Connecticut	Fairfield
06-23-2016	78	Connecticut	Fairfield	08-24-2016	81	Connecticut	Fairfield
06-24-2016	84	Pennsylvania	Northampton	08-25-2016	79	Connecticut	Litchfield
06-25-2016	76	Pennsylvania	Armstrong	08-29-2016	82	Maryland	Anne Arundel
06-26-2016	87	Connecticut	Fairfield	08-31-2016	80	Pennsylvania	Bucks
07-06-2016	87	Connecticut	Fairfield	09-05-2016	76	Pennsylvania	Allegheny
07-08-2016	77	Delaware	Sussex	09-08-2016	80	Connecticut	Fairfield
07-12-2016	79	Pennsylvania	Washington	09-14-2016	91	Maryland	Baltimore
07-15-2016	84	Connecticut	Fairfield	09-22-2016	83	Pennsylvania	Chester
07-17-2016	79	Connecticut	Fairfield	09-23-2016	88	Maryland	Baltimore



Figure O. 2016 Ozone Season EGU NOx Emissions From CT, DE, MD, NY, and NY

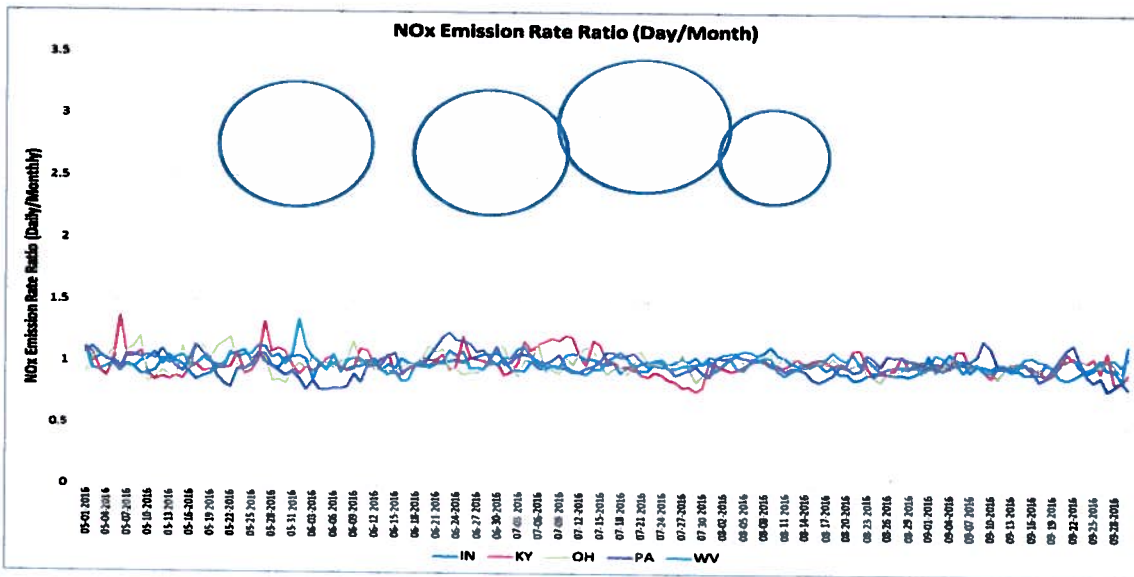
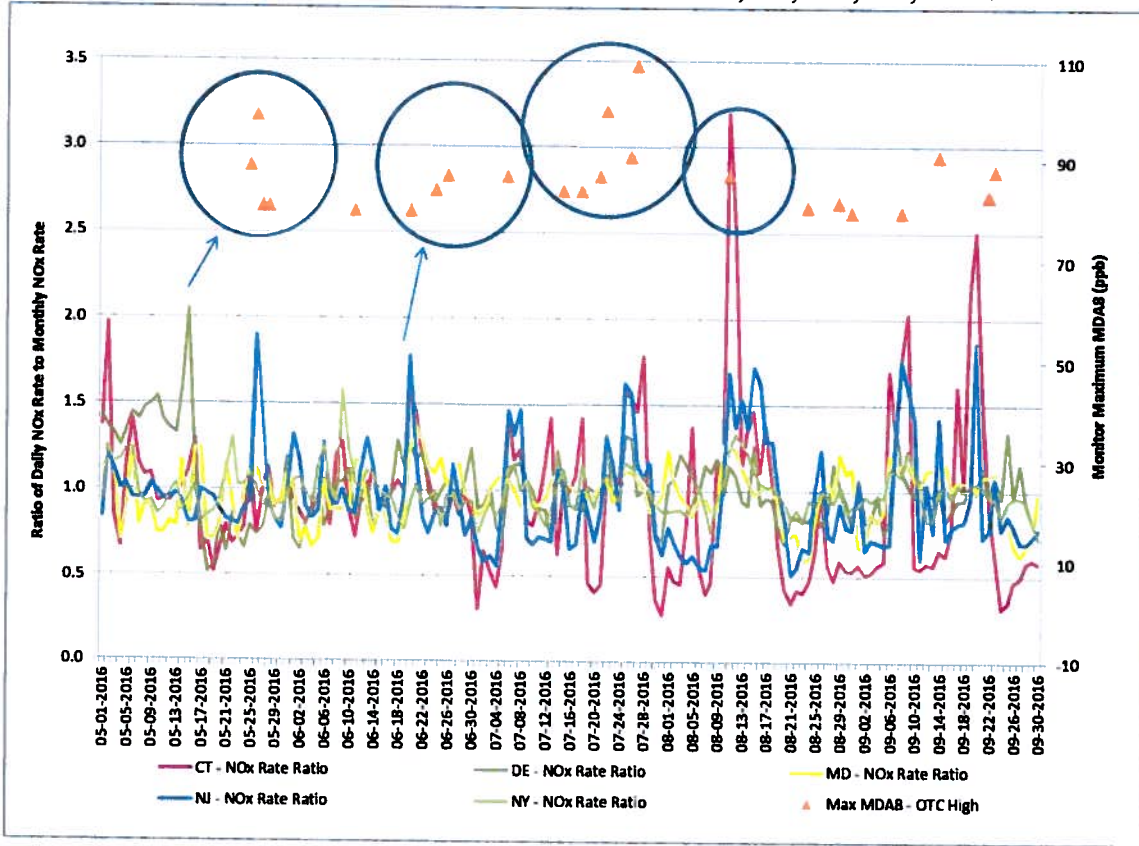


Figure P. Daily EGU NOx Emission Rates in Target States and PA on Petitioning States High Rate Days.

**12. Emission impact of local sources is significantly greater per ton on ozone concentrations at local monitors than emissions from sources in upwind states.**

In a report prepared for MOG by Alpine Geophysics entitled “Relative Impact of State and Source Category NOx Emissions on Downwind Monitors Identified Using the 2017 Cross State Air Pollution Rule Modeling Platform,” Alpine examined the relationships between state-source category NOx emissions and their relative relationship and impact on ozone concentrations at downwind monitors.<sup>30</sup>

Alpine has determined the greatest relative contribution to ozone concentrations for each monitor assessing location and source category impacts. The Alpine report identifies which source category, and from what state, can be found the greatest per ton NOx contribution to the monitors’ modeled ozone concentrations. Results from Alpine’s calculations were normalized to the results of the maximum individual state/category contributor, so that one can easily identify the greatest ppb per ton state/source category. This provides an easy way of determining which categories have greater relative impact compared to other source categories. In addition to recognizing the usefulness of this impact factor in determining which states and categories are the largest ppb/ton contributors to each monitor, the results could be used to assist policy makers in the development of control strategies and their relative impact on ozone concentrations at various locations. Resulting monitor-level relative impact factors for the twenty-one eastern state monitors are presented in the tables set forth in that report.

The following graph, labeled as Figure Q, is found in the Alpine report relating to one of the two remaining final CSAPR update identified nonattainment monitors in the petitioning OTR states:

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<sup>30</sup><http://www.midwestozonegroup.com/files/RelativeImpactofStateandSourceCategoryNOxEmissionsonDownwindMonitorsIdentifiedUsingthe2017CrossStateAirPollutionRuleModelingPlatform.pdf>



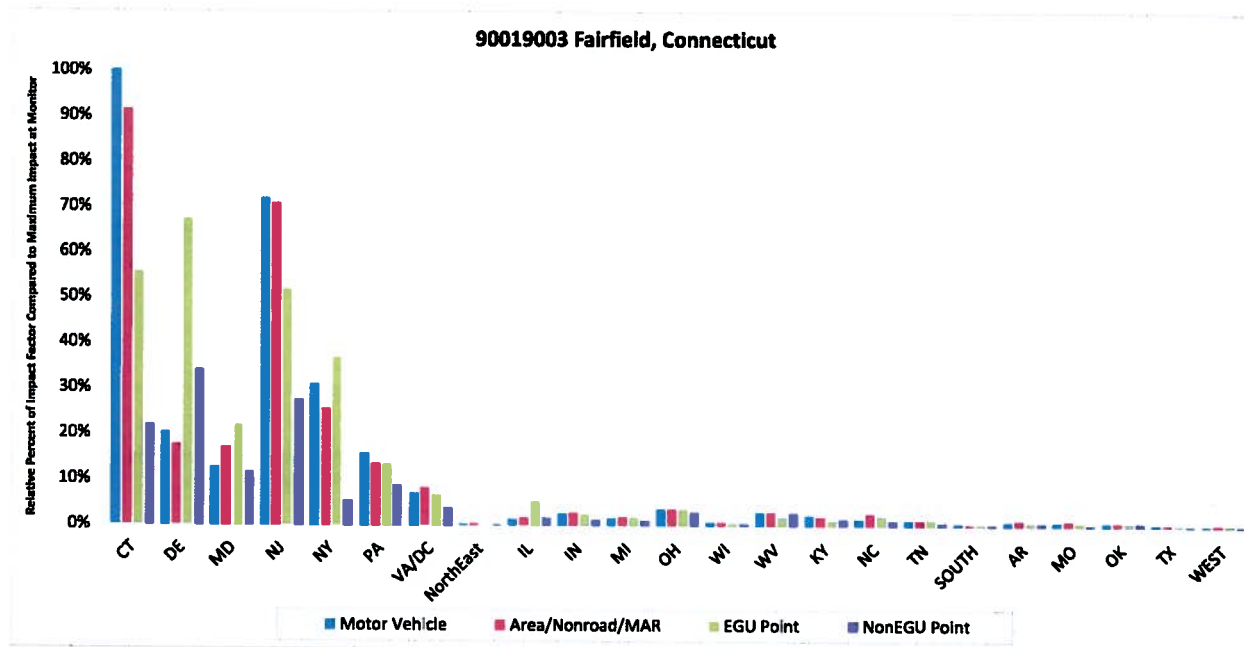


Figure Q. Fairfield, Connecticut Monitor Source and State Apportionment.

As can be seen from this chart, assuming linearity of NO<sub>x</sub> emissions and ozone concentration changes, the greatest improvement in ozone concentrations occur with reductions in emissions from sources located in Connecticut and largely from throughout states in the Northeast. Alpine’s study indicated that the three states with the next greatest potential to improve air quality on a per ton reduced basis by individual category in Connecticut are:

New Jersey: (over 70% of Connecticut’s maximum potential);

Delaware: (nearly 70% of Connecticut’s maximum potential); and

New York: (nearly 40% of Connecticut’s maximum potential).

This analysis further supports the conclusion that the control of local sources and local transport (particularly legally mandated controls which have yet to be adopted) are key components to addressing residual nonattainment concerns in the region with respect to the 2008 ozone NAAQS and provides an important preview of what might need to be done to address the 2015 ozone NAAQS.

**13. International emissions must be addressed as an integral part of the consideration of this petition.**

As an integral part of the agency’s consideration of this petition, and as required by CAA 179(B), EPA must assess the impact of natural and manmade international emissions. In doing so, EPA has the opportunity and duty to develop a reasonable and reasoned approach to the issue of international emissions so that so-called “upwind states” are not subject to the illegal over-control of emissions as a result of CAA 110(a)(2)(D) Good Neighbor SIPs.

Figures R and S below depict NAAQS NODA projected 2023 ozone design values (ppb) at monitors determined to be nonattainment or maintenance in the eastern states.<sup>31</sup> These monitor locations are shown by EPA to be in attainment of both 75 and 70 ppb NAAQS in terms of combined U.S. domain contributed emissions (those generated inside the continental U.S. modeling domain) and the initial & boundary conditions.<sup>32</sup>

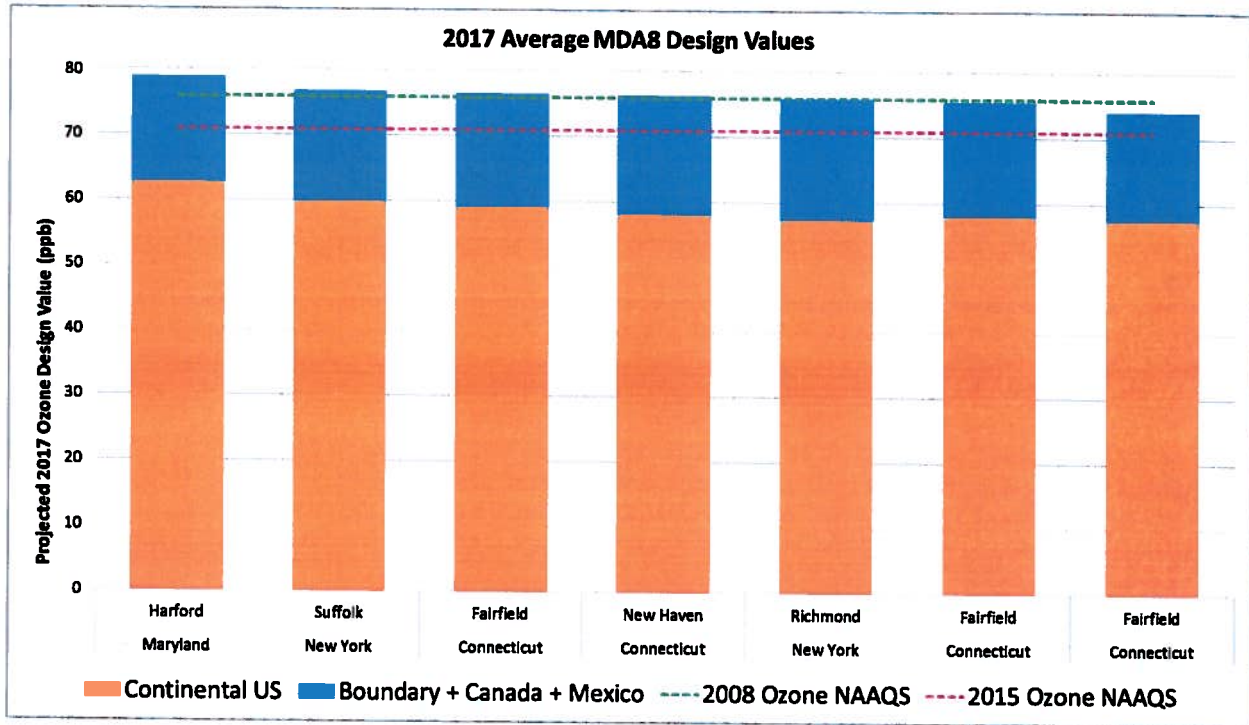


Figure R. 2017 Average MDA8 Design Values for Petitioning States.

Monitor ID	State	County	Maximum Daily 8-hr Ozone Design Value (ppb)		
			2017 Base Case Average	Contribution from Boundary + Canada + Mexico	2017 Base Case Minus Boundary + Canada + Mexico
90010017	Connecticut	Fairfield	74.1	16.7	57.4
90013007	Connecticut	Fairfield	75.5	17.6	57.9
90019003	Connecticut	Fairfield	76.5	17.4	59.1

<sup>31</sup> EPA-HQ-OAR-2015-0500-0459

<sup>32</sup> Note: Conditions which are comprised of anthropogenic and natural sources of ozone and precursors emanating from outside the 36 km modeling domain, e.g., international transported anthropogenic and biogenic emissions, and a small amount of U.S. emissions which exit the regional model domain but get re-imported into the domain via synoptic-scale recirculation.

90099002	Connecticut	New Haven	76.2	18.2	58.0
240251001	Maryland	Harford	78.8	16.1	62.7
360850067	New York	Richmond	75.8	18.5	57.3
361030002	New York	Suffolk	76.8	16.9	59.9

Figure S. NAAQS Projected Ozone Design Values as Impacted by International Sources.

However, EPA’s modeling data show that “but for” these boundary conditions and the international component, these critical monitors in the Northeast would be in attainment of both the 2008 and 2015 ozone NAAQS.

The CAA addresses international emissions directly. Section 179(B) subsections (a)(2) states that: Notwithstanding any other provision of law, an implementation plan or plan revision required under this chapter shall be approved by the Administrator if— (2) the submitting State establishes . . . that the implementation plan of such State would be adequate to attain and maintain the relevant national ambient air quality standards . . . but for emissions emanating from outside of the United States.

If a state is able to demonstrate attainment “but for” international transport after adopting all reasonably available control measures, CAA Section 179(B) requires that EPA approve the CAA-required state implementation plan.

Addressing international emissions is important not only to downwind states such as the ones shown in Figures R and S, but also upwind states that are the target of the 176A petition and also obligated to submit under CAA Section 110(a)(2)(D) Good Neighbor SIPs. As the U.S. Supreme Court in the Homer City case ruled, it is essential that Good Neighbor states be required to eliminate “only those ‘amounts’ of pollutants that contribute to the nonattainment of NAAQS in downwind States...” . . .EPA cannot require a State to reduce its output of pollution by more than is necessary to achieve attainment in every downwind State. . . “<sup>33</sup>

In addition, the D.C. Circuit has commented that “. . . the good neighbor provision requires upwind States to bear responsibility for their fair share of the mess in downwind States.” However, this “mess” seems to be related to international emissions for which upwind states have no responsibility.<sup>34</sup>

All demonstrations under CAA Section 179B(b) and involving states with ozone nonattainment, regardless of an area’s classification (including nonattainment areas classified as Marginal), must include a showing that the air agency adopted all RACM, including RACT, for the area in accordance with CAA Section 172(c)(1), 42 U.S.C. 7502(c)(1). Specifically, any such demonstration would need to show that the area could otherwise attain NAAQS compliance by application of reasonable controls on sources of emissions that are within the state’s jurisdiction

<sup>33</sup>134 S.Ct. at 1608.

<sup>34</sup> 696 F.3d. at 14.

in the absence of the impact of international emissions. The significant impact on local air quality of legally mandated control programs, including but not limited to RACT. Combined with the obligation to impose those controls even in the face of consideration of international emissions, the Petitioning States should be required to assess the impact of international emissions and legally mandated controls to inform EPA and other states relative to Good Neighbor SIP development.. Target States must not be held responsible for creating Good Neighbor SIPs address downwind significant contribution that is attributable to Petitioning States' deficient programs or international emissions

For the Target States facing the obligation to submit approvable state implementation plan revisions to satisfy Good Neighbor SIP requirements, the requirements on Clean Air Act Section 179B(a) are applicable and require only that a plan or revision “meets all the requirements applicable to it under the chapter other than a requirement that such plan or revision demonstrate attainment and maintenance of the relevant national ambient air quality standards by the attainment date.” That section of the CAA provides that upon that showing “that the implementation plan of such State would be adequate to attain and maintain the relevant national ambient air quality standards by the attainment date but for emissions emanating from outside of the United States, such a plan shall be approved by the Administrator.”

Figure T below was prepared by Alpine Geophysics for MOG and depicts EPA's projected 2023 8-hour ozone design values across the U.S. excluding the international emissions sector. The exclusion of international emissions was executed for all such emissions whether from international borders or beyond. Note that this projection shows not a single monitor in the continental U.S. with a design value exceeding 57 ppb when these boundary and international emissions are excluded. Modeling the U.S. emissions inventory projected to 2023 but without the impact of unregulated emission categories demonstrates that the CAA programs in the U.S. are performing as intended.

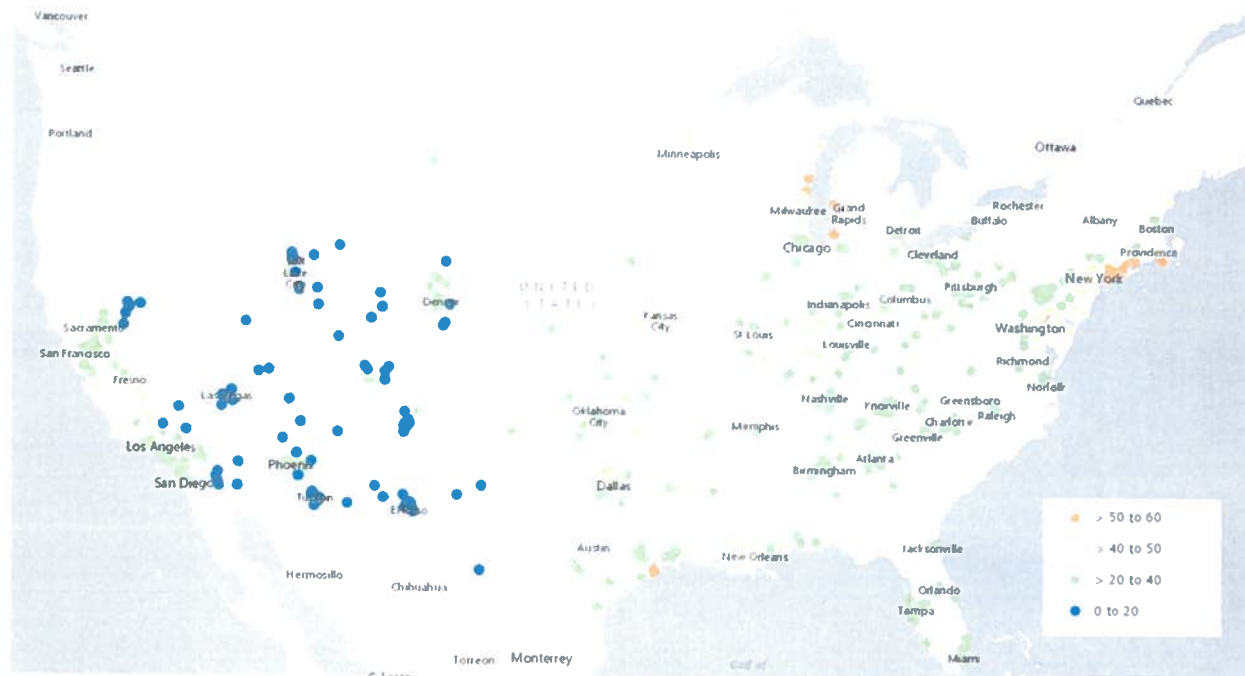


Figure T. Projected 2023 Ozone Design Values (ppb) Excluding Contribution from Boundary Condition and North American (Canada and Mexico) International Emissions.

In addition to changing emissions resulting from growth and control in the continental U.S., EPA has identified updated projected emissions in both Canada and Mexico that have been integrated into the modeling platform used in this modeling. EPA’s modeling boundary conditions, however, have been held constant at 2011 levels. This is inconsistent with recent publications that indicate emissions from outside of the U.S., specifically from international transport, are on the rise.<sup>35</sup>

This figure does not show the full impacts of excluding U.S. background. Consequently, EPA must reconsider its selection of “problem” monitors to be considered as part of any Good Neighbor SIP guidance because any residual nonattainment is demonstrably attributable to international emissions. For the aforementioned reasons, EPA should deny the pending 176A petition in part because any residual nonattainment in the OTR is attributable to international emissions.

#### 14. Conclusion.

MOG appreciates the opportunity to participate in the petition analysis process. Finally, we note that the Petitioning States offer no air quality analyses in their petition, and rely instead on outdated computer modeling published in 2005 to assert the nonattainment status of the region. Air quality is significantly improving in much of the OTR. The significant reduction in emissions projected by EPA to occur over the next several years will result in continued

<sup>35</sup> Atmos. Chem. Phys., 17, 2943–2970 (2017).

improvement in air quality throughout the OTR. For other monitors in the OTR, source apportionment analysis indicates that any additional controls should be local in nature. Finally, the overwhelming role of international emissions can no longer be ignored.

We agree with the conclusions reached by EPA that that are other and better processes to address the issues raised by this petition. Moreover, as demonstrated by the data presented in these comments, there are no technical or legal bases to support the petition.

The Midwest Ozone Group supports EPA's proposal to deny the petition.