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May 17, 2017

Honorable Scott Pruitt
Administrator
U.S. Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

RE: Maryland CAA Section 126 Petition
Docket ID No. EPA-HQ-OAR-2016-0691

Dear Administrator Pruitt,

On November 16, 2016, the State of Maryland filed a petition pursuant to Section 126 of the federal Clean Air Act (CAA) directed at 36 electric generating units (EGUs) in Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia. While the Midwest Ozone Group (MOG) recognizes that the Environmental Protection Agency (EPA) has yet to open a formal comment period in the docket for this matter, it is aware of a presumed informal comment submitted to you by a number of NGOs including the Adirondack Council, the Environmental Integrity Project, the Clean Air Task Force, the Maryland Environmental Health Network, Clean Air Watch, Moms Clean Air Force, Earthjustice, the Sierra Club, Environmental Advocates of New York, WE ACT for Environmental Justice, and Environmental Defense Fund.

By way of background, MOG is an affiliation of companies, trade organizations, and associations which have drawn upon their collective resources to advance the objective of seeking solutions to the development of a legally and technically sound national ambient air quality program. MOG has been actively engaged in a variety of issues and initiatives of EPA related to the development and implementation of air quality policy including not only the development of National Ambient Air Quality Standards ("NAAQS") but also such programs as transport rules, petitions under 176A and 126 and the development of state-based alternatives to EPA transport rules. MOG members operate more than 85,000 MW of coal-fired generation in more than ten states.

Because the NGO comments described above are significantly erroneous and failed to even mention the status of Maryland's air quality, MOG offers the enclosed comments.

summarized below, at this time to urge that the Maryland petition be denied on both technical and legal grounds.

1. Current Maryland ozone air quality already attains 2008 (75 ppb) NAAQS except for one monitor in 2016

The most fundamental reason that the petition is flawed is that CAA §126 requires that, prior to Maryland or any party asserting a claim against an upwind source, it must demonstrate that there is an ozone non-attainment or maintenance problem in the downwind area. The current ozone air quality in Maryland, however, already attains the 2008 (75 ppb) ozone NAAQS. Both the most recent EPA design values (2013-2015) and tentative new design values using 2014-2016 data for Maryland monitors are significantly below the 2008 ozone NAAQS with one exception involving the Cecil monitor in 2016 when design value went from 73 to 76 ppb, a level barely in excess of the 2008 NAAQS, and which occurred at a time that EGU emissions were decreasing significantly, making it highly unlikely that EGUs caused the increase. Indeed, source contribution analyses show that the largest source category contributor to Cecil ozone concentrations is intra-Maryland motor vehicle emissions, not transported EGU emissions.

2. EPA 2017 data projects that all Maryland monitors, including Cecil, will attain or are attaining the 2008 ozone NAAQS

EPA Tier 3 modeling shows all Maryland monitors, including Cecil and Harford, in attainment with the 2008 ozone NAAQS in 2025, thus satisfying EPA's historical test for not interfering with maintenance. EPA found that simply implementing existing on-the-books control programs will result in all monitors in Maryland attaining the 2008 ozone NAAQS by 2018. MOG is also aware of numerous additional on-the-books emission reduction programs not yet included in EPA's 2017 emissions modeling. These other programs will also greatly improve Maryland air quality and EPA should include these reductions in additional modeling prior to deciding the merits of the petition. MOG believes that modeling done that properly accounts for these programs will confirm that the petition is not justified.

3. The CSAPR Update Rule legally and practically moot Maryland petition

EPA's final CSAPR Update rule has already resolved the responsibility of the states and sources named in the Maryland's petition (filed pursuant to CAA Section 126) for addressing ozone impact on Maryland's air quality. Since EPA has already considered the relief requested by Maryland in connection with its 126 petition and rejected it, the pending petition must be denied.

4. EPA must consider international emissions as part of the petition analysis

The CAA requires EPA to assess the impact of natural and manmade international emissions as part of its petition analysis. EPA data show that all of Maryland's monitors are significantly impacted by international emissions, and that all would attain the 75 ppb NAAQS "but for" those

emissions. Proper accounting for international contributions as required by the CAA will moot the petition and avoid over control that is prohibited in connection with the implementation of the Good Neighbor provisions of the CAA.

MOG submits that the Maryland petition is fatally flawed on both legal and technical grounds. The fact the EPA itself has concluded that all of Maryland's monitors are either now in attainment or will be attainment with the 2008 ozone NAAQS by the attainment deadline of 2017 is alone enough to reject the petition. MOG looks forward to participating in the public comment process once the docket is open for comments but submits these comments now in response to the disingenuous, legally, and technically flawed attempt by the NGOs to influence your decision in advance of the public process.

Very truly yours,

Edward L. Kropp

Edward L. Kropp
Legal Counsel
Midwest Ozone Group

CC: Sarah Dunham, Acting Assistant Administrator
Office of Air and Radiation

Benjamin Gibson
Office of Air Quality Planning and Standards

COMMENTS OF THE MIDWEST OZONE GROUP REGARDING STATE OF MARYLAND, CLEAN AIR ACT §126 PETITION; DOCKET ID NO. EPA–HQ–OAR–2016–0690

MAY 17, 2017

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COMMENTS OF THE MIDWEST OZONE GROUP

REGARDING STATE OF MARYLAND, CLEAN AIR ACT §126 PETITION;

DOCKET ID NO. EPA–HQ–OAR–2016–0690.[1]

On November 16, 2016, the State of Maryland filed a petition pursuant to Section 126 of the federal Clean Air Act (CAA) directed at 36 electric generating units (EGUs) in the states of Indiana, Kentucky, Ohio, Pennsylvania and West Virginia. The petition not only directly affects EGUs owned and operated by the members of the Midwest Ozone Group (MOG) but also raises several significant policy matters that are of significant concern to MOG. While MOG will defer to the owners of the individual EGUs on matters specific to those units, MOG will address in these comments more general concerns about the legal and technical deficiencies of the petition.

MOG is an affiliation of companies, trade organizations, and associations that draws upon their collective resources to seek solutions to the development of legally and technically sound national ambient air quality management programs.[2] MOG's primary efforts are 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, implementation guidance, and state developed alternatives to EPA transport rules. 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 interstate air pollution rules and the impacts on their facilities, their employees, their contractors, and the consumers of their electric power.

MOG's concerns regarding the Maryland petition go to the fundamental premise of CAA §126 – to provide a carefully crafted mechanism by which states can resolve disputes of interstate transport of air pollutants as they relate to significant contribution to a nonattainment or maintenance problem. The basic premise of CAA §126 as applied in this case is that Maryland

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[1] These comments were prepared with the technical assistance of Alpine Geophysics, LLC. Comments or questions about this document 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 and kathy.beckett@steptoe-johnson.com and skipp.kropp@steptoe-johnson.com respectively.

[2] 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.

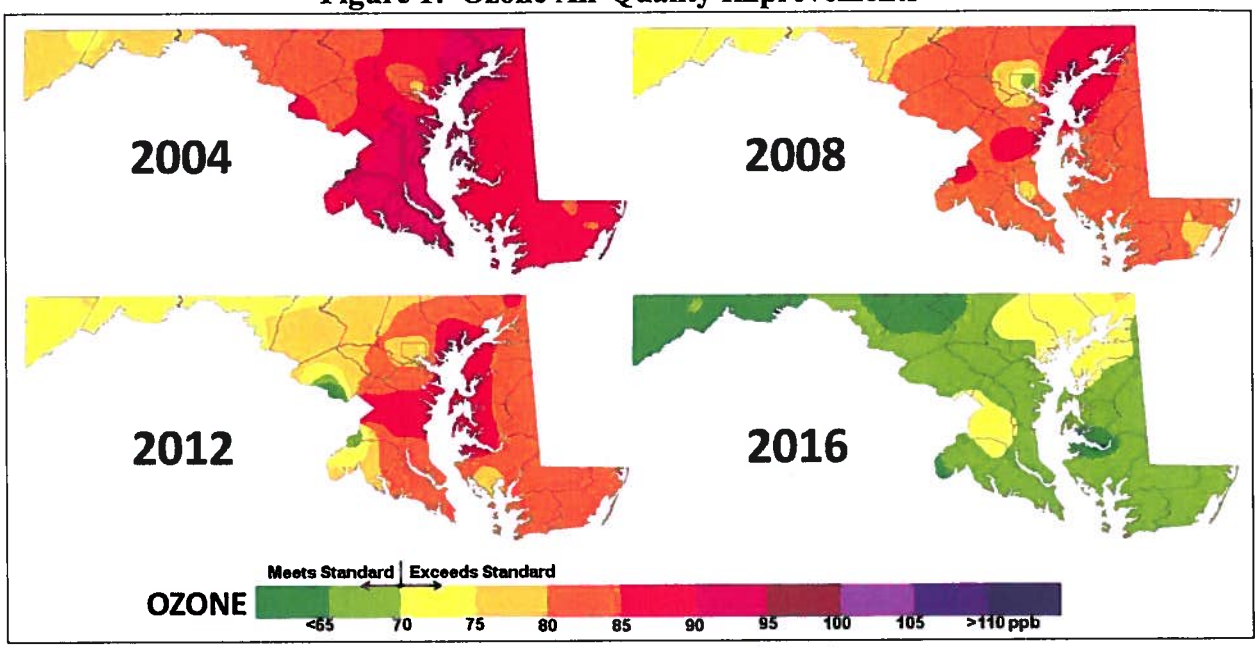
must first demonstrate that it has an ozone non-attainment or maintenance problem before it can assert a claim against an upwind source. See CAA §§126(b) and 110(a)(2)(D)(ii). As we will point out in these comments, there is no legitimate basis for Maryland to make a claim under CAA §126 as there are no ozone nonattainment or maintenance issues in Maryland associated with the 2008 ozone NAAQS and, therefore, this petition must fail.

The following are some, but certainly not all, of the deficiencies in Maryland §126 petition that render it fatally defective.

1. Maryland's current ozone air quality is already measuring attainment of the 2008 (75 ppb) ozone NAAQS.

The following graphic from Maryland's own web site show the dramatic improvement in ozone air quality that has occurred in Maryland over recent years.

Figure 1: Ozone Air Quality Improvements



Source: http://mde.maryland.gov/programs/Air/AirQualityMonitoring/Pages/HistoricalData.aspx

The most recent EPA design values (2013-2015) and the tentative design values (2014-2016) for the Maryland monitoring stations. When assessed against the 2008 ozone NAAQS, (75 ppb), the results show that all monitors are measuring design values over the 2014 through 2016 period that are below the 2008 ozone NAAQS with one exception. That exception occurred in 2016 when the Cecil monitor measured design value increased from 73 to 76 ppb – barely in excess of the 75.9 ppb concentration that would show continued attainment of the 2008 NAAQS. Following are the 4th high and 3 year 2015 and 2016 design values for all Maryland monitors: Table 1: Recent maximum daily 8-hr ozone design values (ppb):

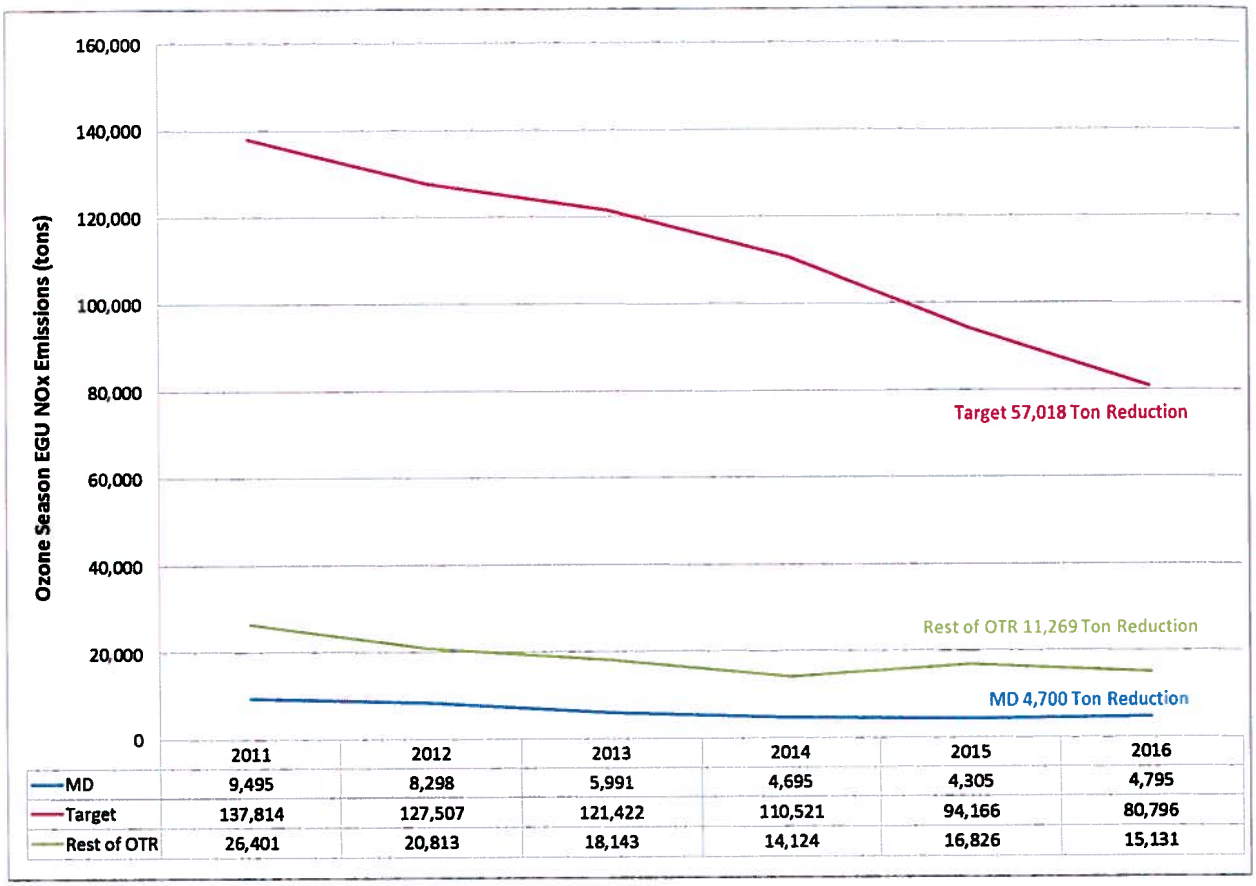
State	County	Site ID	4th Highest (ppb)				3-yr Avg (ppb)	
			2013	2014	2015	2016	2013-2015	2014-2016
Maryland	Anne Arundel	240030014	71	66	71	76	69	71
Maryland	Baltimore	240051007	68	67	78	73	71	72
Maryland	Baltimore	240053001	67	68	72	78	69	72
Maryland	Calvert	240090011	67	70	67	70	68	69
Maryland	Carroll	240130001	68	64	70	72	67	68
Maryland	Cecil	240150003	72	74	74	80	73	76
Maryland	Charles	240170010	64	67	68	73	66	69
Maryland	Dorchester	240190004	67	65	61	67	64	64
Maryland	Dorchester	240199991	68	65	65	68	66	66
Maryland	Frederick	240210037	69	63	70	70	67	67
Maryland	Garrett	240230002	64	63	67	66	64	65
Maryland	Harford	240251001	72	67	74	79	71	73
Maryland	Harford	240259001	68	70	73	77	70	73
Maryland	Kent	240290002	67	68	72	72	69	70
Maryland	Montgomery	240313001	69	64	72	68	68	68
Maryland	Prince George's	240330030	68	65	72	70	68	69
Maryland	Prince George's	240338003	69	69	69	76	69	71
Maryland	Prince George's	240339991	72	69	67	70	69	68
Maryland	Washington	240430009	67	61	67	70	65	66
Maryland	Baltimore (City)	245100054	63	60	72	75	65	69

Over the last three years, the 4th high values at the Cecil monitor were 74, 74, and 80 ppb and occurred at a time when overall EGU emissions were decreasing, as will be discussed in greater detail elsewhere in these comments. This fact alone challenges Maryland's representation in the petition that additional controls on upwind EGUs are needed to achieve attainment and maintenance of the 2008 ozone NAAQS at all Maryland ozone monitoring sites.

2. The increases in ozone concentrations in 2016 at the Cecil monitor occurred at a time when EGU emissions decreased.

It is particularly curious that the Cecil monitor measured an increase in ozone concentration in 2016 because 2016 ozone season EGU NO_X emissions in the targeted states continued the downward trend that has been observed over a number of years. This downward trend is illustrated in the following graphics which compare the EGU emissions of the target states of Indiana, Kentucky, Pennsylvania, Ohio, and West Virginia to reductions occurring in Maryland and the remaining OTR states. EPA's final assessment of the merits of this petition must examine the possibility that there are other factors or sources of emissions that caused such an increase in monitored ozone concentrations, particularly with all other Maryland monitors measuring design values that are well below the 2008 ozone NAAQS of 75 ppb.

Figure 2: CEM Reported EGU Emissions from Petition Targeted States



	2011	2012	2013	2014	2015	2016
MD	9,495	8,298	5,991	4,695	4,305	4,795
Target	137,814	127,507	121,422	110,521	94,166	80,796
Rest of OTR	26,401	20,813	18,143	14,124	16,826	15,131

3. Emission trends for states targeted by the petition are decreasing.

The Maryland petition is directed at EGU's in five upwind states that have in fact experienced a significant reduction in NOx emissions from EGU sources over recent years. These reductions not only reflect the good faith of these upwind states in regulating their own sources but also the effectiveness of USEPA programs adopted to meet the Good Neighbor provisions of the Clean Air Act.

In its recent air quality assessment report[3], Maryland itself concedes its recognition of a reduction in NOx emissions from sources in upwind states by offering the following statement:

> "Maryland has a long history of working in partnership with other states and taking action, when it is necessary, to reduce "incoming ozone." … These efforts have begun to show results. NOx emissions from power plants in upwind states have been decreasing each year."

Set forth below are charts developed from EPA National Emission Inventory (NEI) summaries[4] illustrating emission reduction in the five states targeted by the Maryland petition.

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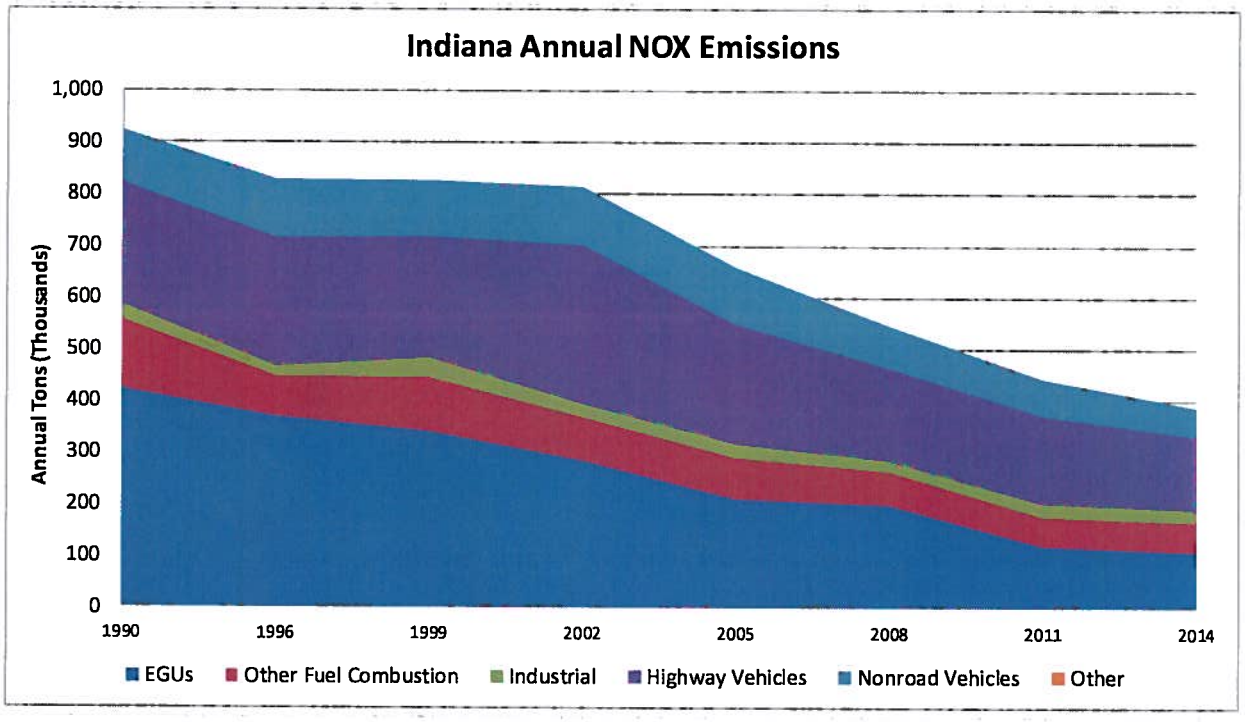
[3] http://mde.maryland.gov/programs/Air/Documents/MDCleanAirProgress2017.pdf.

4 https://www.epa.gov/sites/production/files/2016-12/national_tier1_caps.xlsx

Indiana

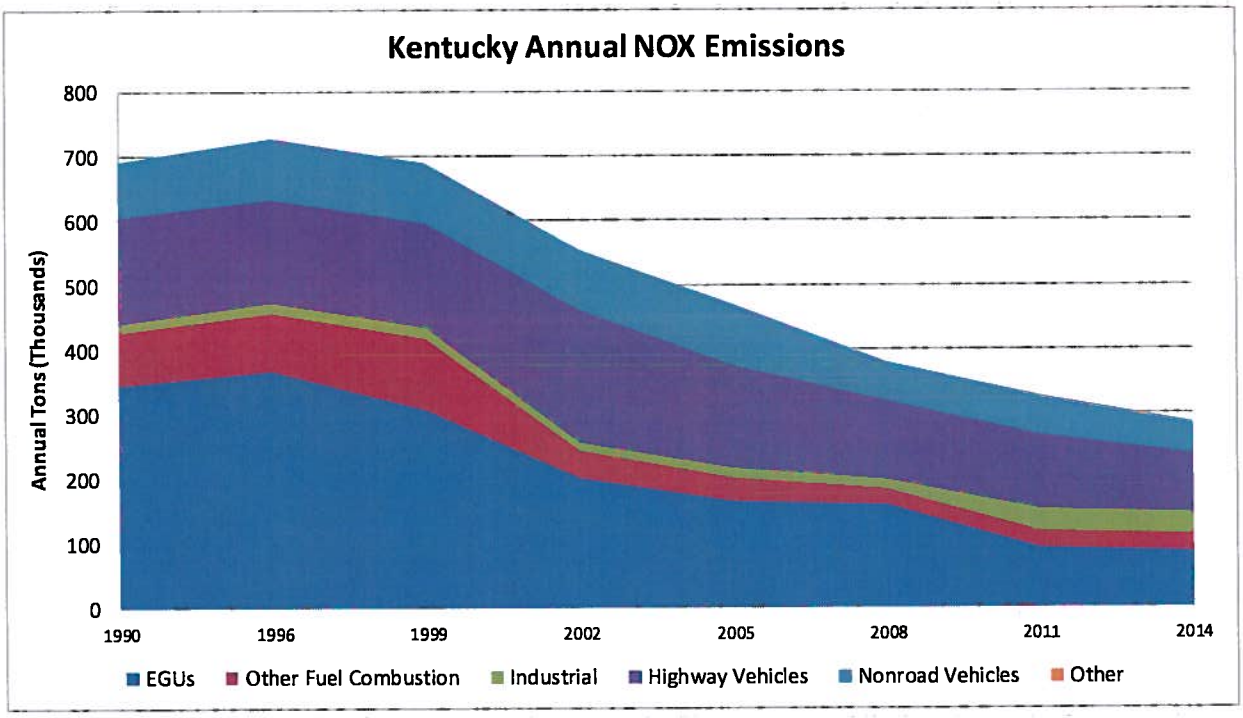
	Annual NOX Emissions (Thousand Tons)						
Year	EGUs	Other Fuel Combustion	Industrial	Highway Vehicles	Nonroad Vehicles	Other	Total
1990	422	134	29	235	102	0	924
1996	369	78	19	249	113	0	828
1999	341	104	38	235	109	0	827
2002	284	84	26	307	113	0	814
2005	211	80	26	232	110	0	659
2008	199	65	20	180	82	1	546
2011	120	57	24	171	71	0	444
2014	109	57	24	142	56	0	388
% Change	-74%	-58%	-17%	-40%	-45%	172%	-58%



Indiana EGU NOx Emissions Change of -74% between 1990 and 2014

Kentucky

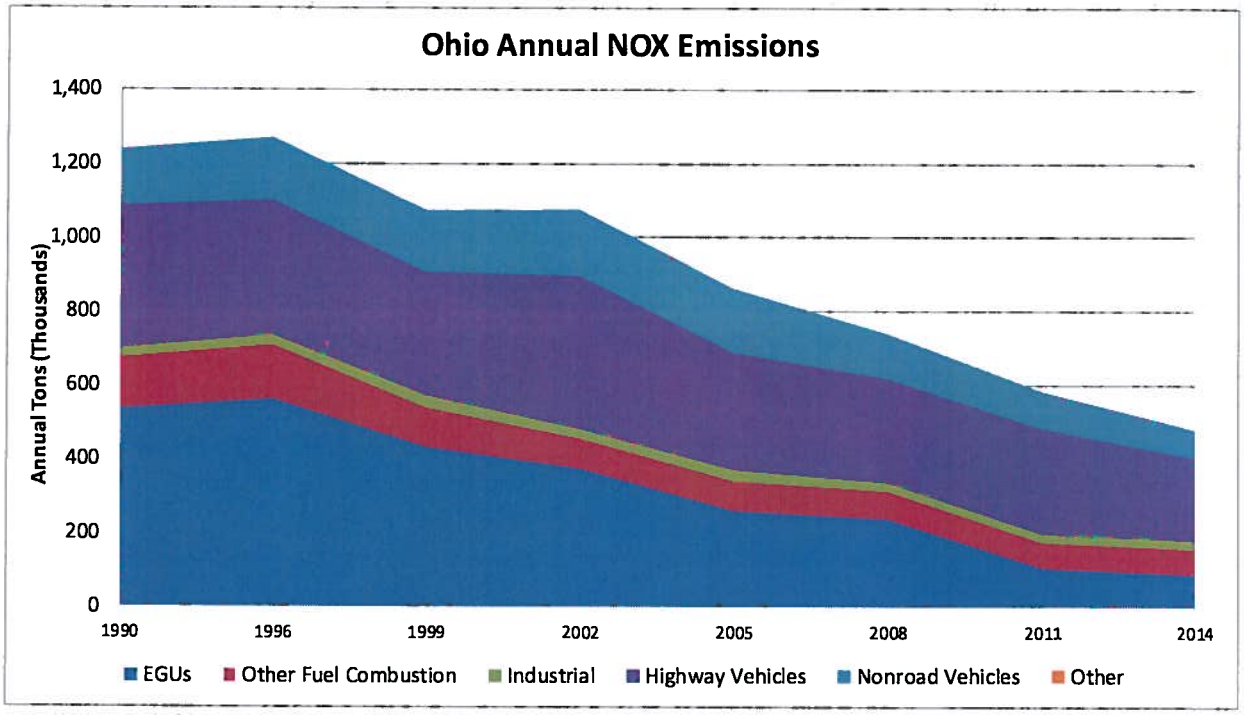
	Annual NOX Emissions (Thousand Tons)						
Year	EGUs	Other Fuel Combustion	Industrial	Highway Vehicles	Nonroad Vehicles	Other	Total
1990	345	82	13	165	86	0	691
1996	367	90	16	160	95	1	728
1999	307	111	17	162	91	2	690
2002	201	43	12	206	93	0	555
2005	165	36	15	159	92	3	471
2008	159	25	14	122	58	3	381
2011	93	26	33	116	57	3	328
2014	87	26	33	91	46	3	286
% Change	**-75%**	**-68%**	**157%**	**-45%**	**-47%**	**4998%**	**-59%**



Kentucky EGU NOx Emissions Change of -75% between 1990 and 2014

Ohio

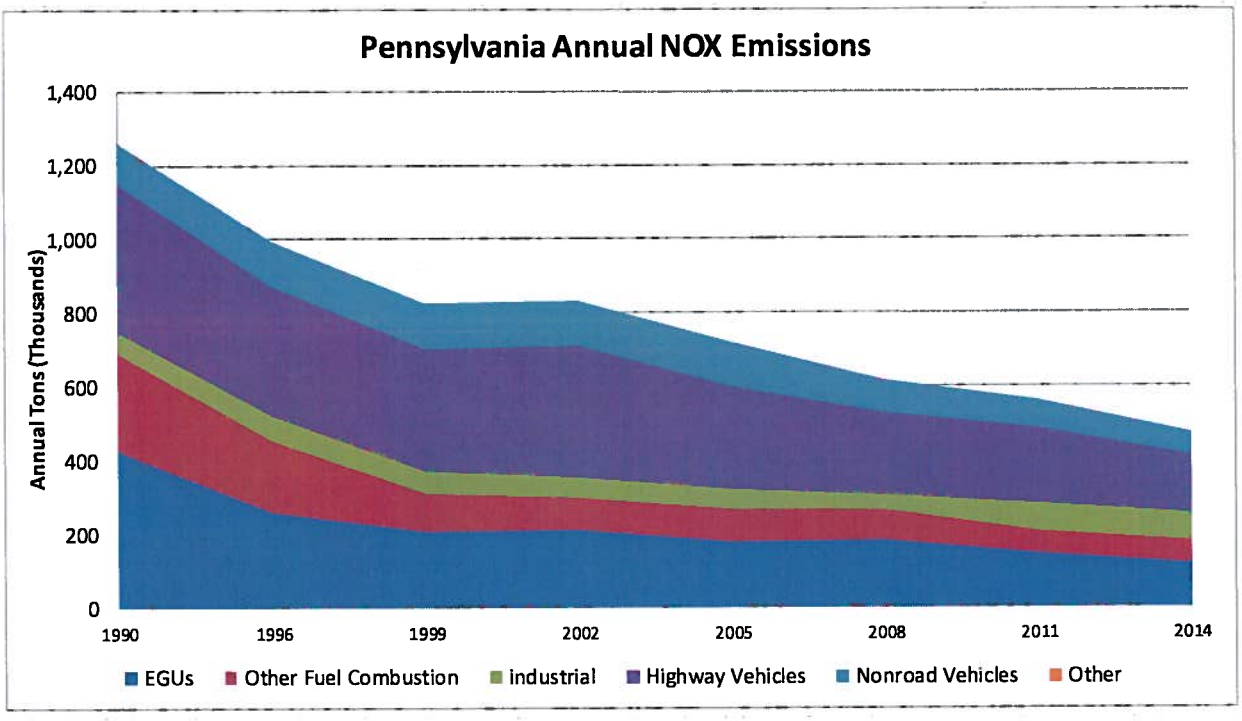
	Annual NOX Emissions (Thousand Tons)						
Year	EGUs	Other Fuel Combustion	Industrial	Highway Vehicles	Nonroad Vehicles	Other	Total
1990	535	139	24	388	152	0	1,238
1996	562	146	26	367	169	0	1,270
1999	432	106	33	335	167	0	1,074
2002	374	81	25	415	180	0	1,076
2005	260	81	30	318	174	0	863
2008	237	75	23	282	122	0	740
2011	105	69	23	286	100	1	584
2014	86	69	23	225	77	1	480
% Change	-84%	-50%	-7%	-42%	-50%	920%	-61%



Ohio EGU NOx Emissions Change of -84% between 1990 and 2014

Pennsylvania

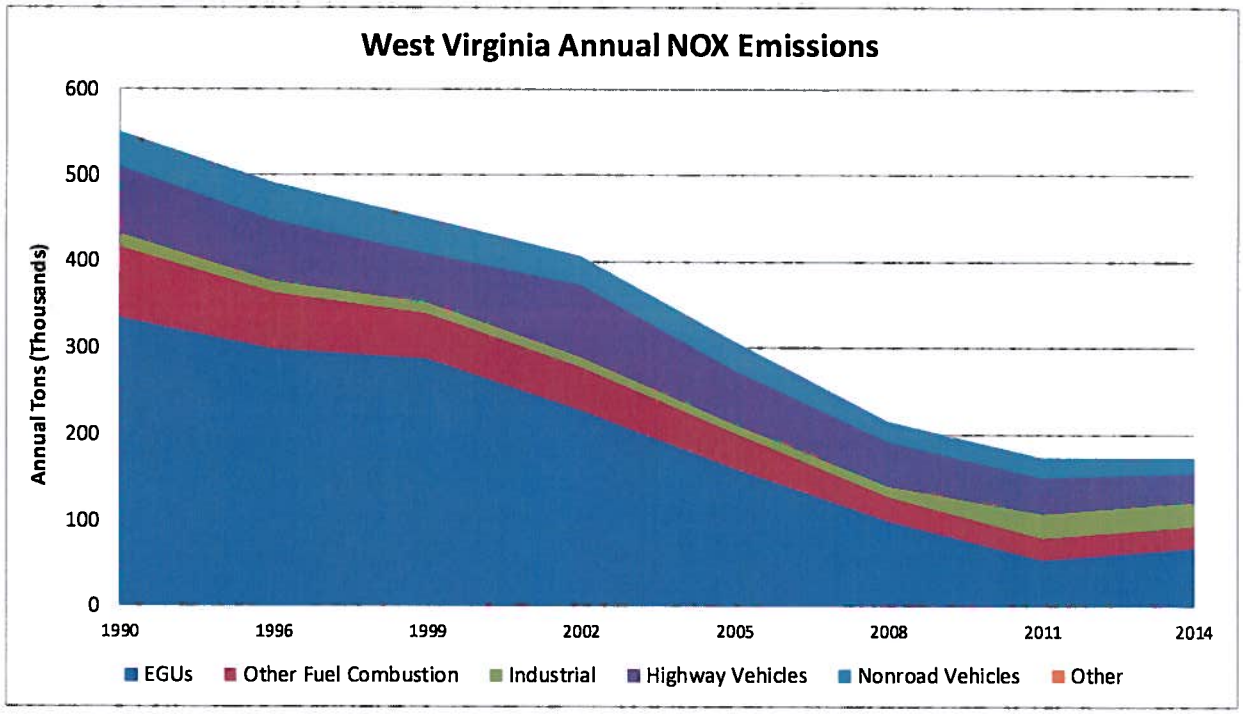
	Annual NOX Emissions (Thousand Tons)						
Year	EGUs	Other Fuel Combustion	Industrial	Highway Vehicles	Nonroad Vehicles	Other	Total
1990	425	266	58	401	111	0	1,262
1996	260	194	67	352	123	0	995
1999	207	103	60	332	125	0	827
2002	211	87	54	357	123	0	833
2005	178	89	54	278	120	0	720
2008	183	83	39	224	88	0	617
2011	146	61	75	204	76	0	562
2014	119	61	75	157	62	0	474
% Change	**-72%**	**-77%**	**28%**	**-61%**	**-44%**	**-7%**	**-62%**



Pennsylvania EGU NOx Emissions Change of -72% between 1990 and 2014

West Virginia

	Annual NOX Emissions (Thousand Tons)						
Year	EGUs	Other Fuel Combustion	Industrial	Highway Vehicles	Nonroad Vehicles	Other	Total
1990	335	82	15	78	40	0	551
1996	299	66	12	71	44	0	491
1999	287	52	13	57	41	1	450
2002	228	50	11	84	33	0	407
2005	160	41	10	63	33	2	308
2008	99	28	12	52	22	2	215
2011	54	25	28	42	22	1	173
2014	68	25	28	34	17	1	173
% Change	-80%	-69%	84%	-57%	-58%	381%	-69%



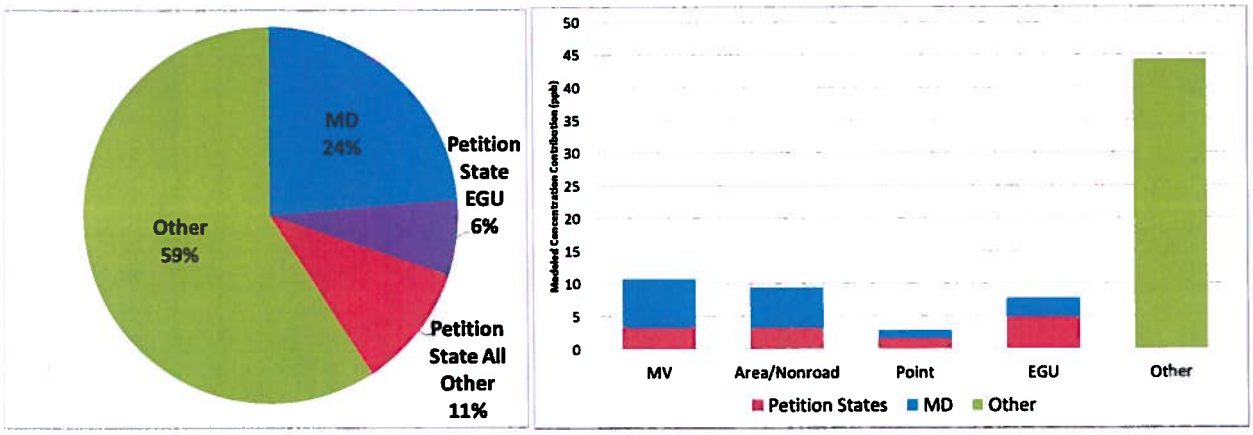
West Virginia EGU NOx Emissions Change of -80% between 1990 and 2014

As can be seen from these graphics the five states being targeted by the Maryland petition already reduced their annual EGU NOx emissions from 72% to 84% from 1990 to 2014. Additionally, ozone season EGU NOx emissions, as presented in the previous section, show reductions of over 57,000 tons between 2011 and 2016 from the petition targeted states. As will be discussed elsewhere in these comments, these emission reductions are continuing as the result of other on-the-books regulatory programs regardless of any value in reducing ozone concentrations in Maryland.

4. **The most significant individual source category contributor to ozone concentrations at the Cecil monitor are motor vehicle emissions from within Maryland itself. Also, the 36 EGUs identified in Maryland's §126 petition are a subset of the 6% contributed by <u>all</u> EGUs from the Target 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 ozone concentrations being predicted at the Cecil monitor.[5] As can be seen from the following graphics, emissions from EGUs in upwind target states are small (6% for <u>all</u> EGU sources in target states, not just the 36 identified units) relative to emissions from Maryland or other source region and category contributions. Emissions are consistently higher in source categories of local motor vehicle, nonroad mobile, and area source contribution than any other source category.

Figure 3: Upwind EGU Emissions versus Others



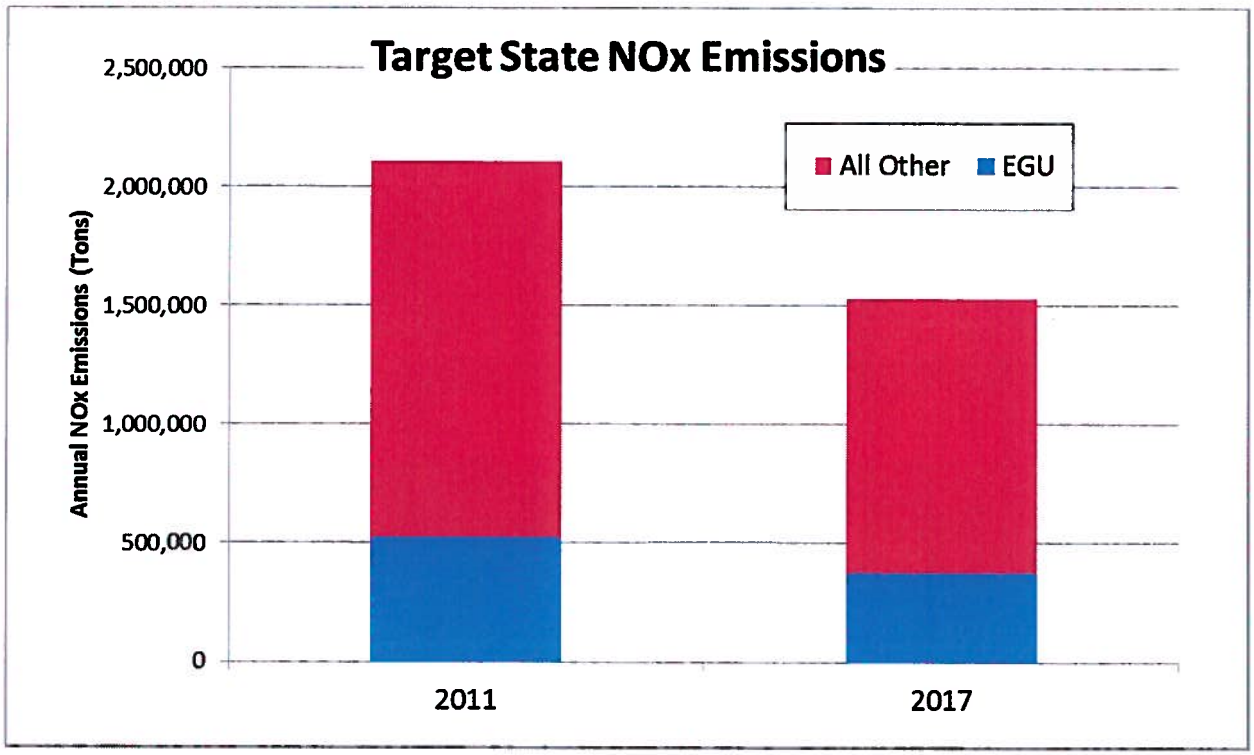
5. Maryland's AQ improves with noted reductions in local ozone precursors.

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, regardless of any effects on ambient ozone concentrations. As published by EPA, annual target State-level NO_X emissions are expected to decline between 2011 and 2017. A study[6] prepared by Alpine Geophysics summarizes this data. The bar chart set out below illustrates petition identified target state-level annual NO_X emissions from all anthropogenic categories for the base year 2011 and projected base case of 2017. As can be seen in this bar chart, NO_X emissions from these states will have decreased by approximately 425,000 tons (27%) from 2011 to 2017. Comparatively, annual NO_X

[5] https://protect-us.mimecast.com/s/QQg9B4FZK56uk?domain=midwestozonegroup.com
[6] http://www.midwestozonegroup.com/files/CSAPR_Documented_Emission_Reductions_and_Control_Scenarios.pdf

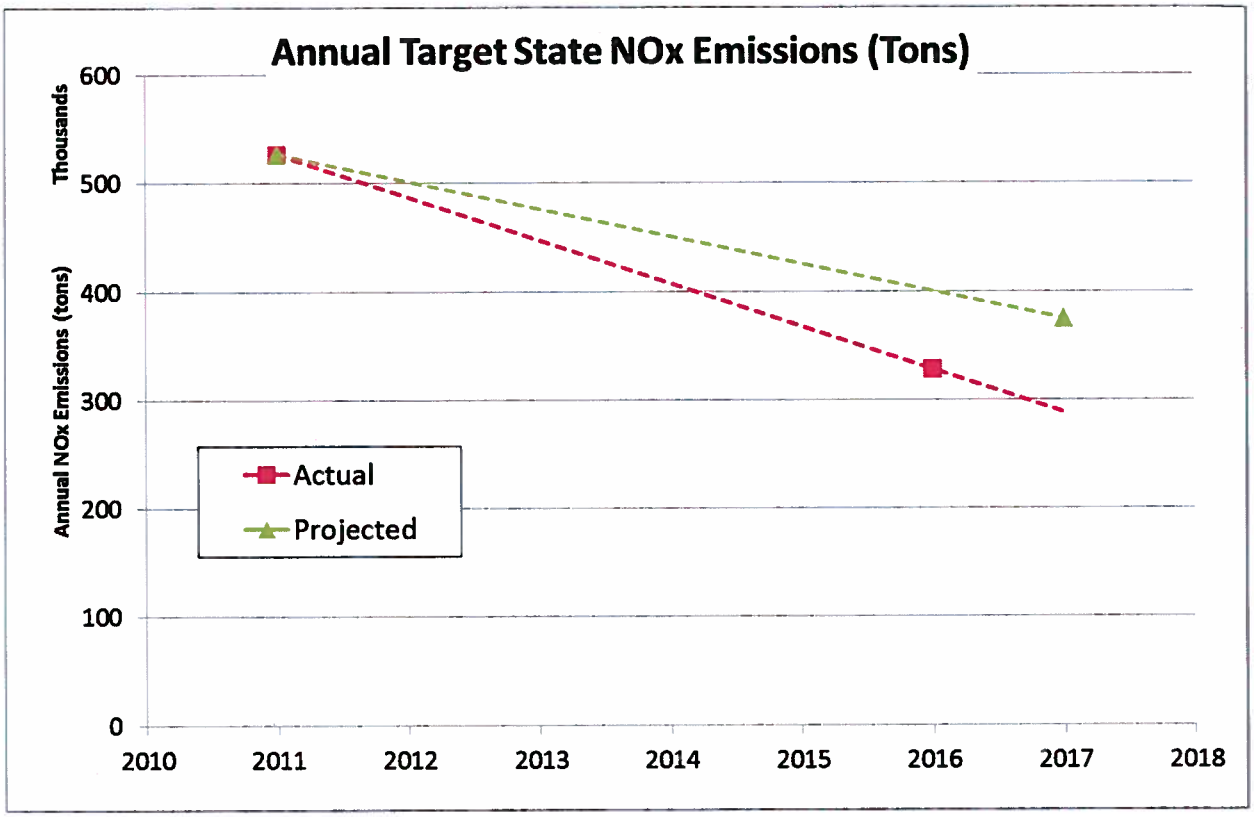
emissions from electric generating utilities (EGUs) will have decreased by 152,000 tons, or 29% from 2011 to 2017.

Figure 4: Annual NO_X emission reduction trends, all sources and EGUs for petition target states



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

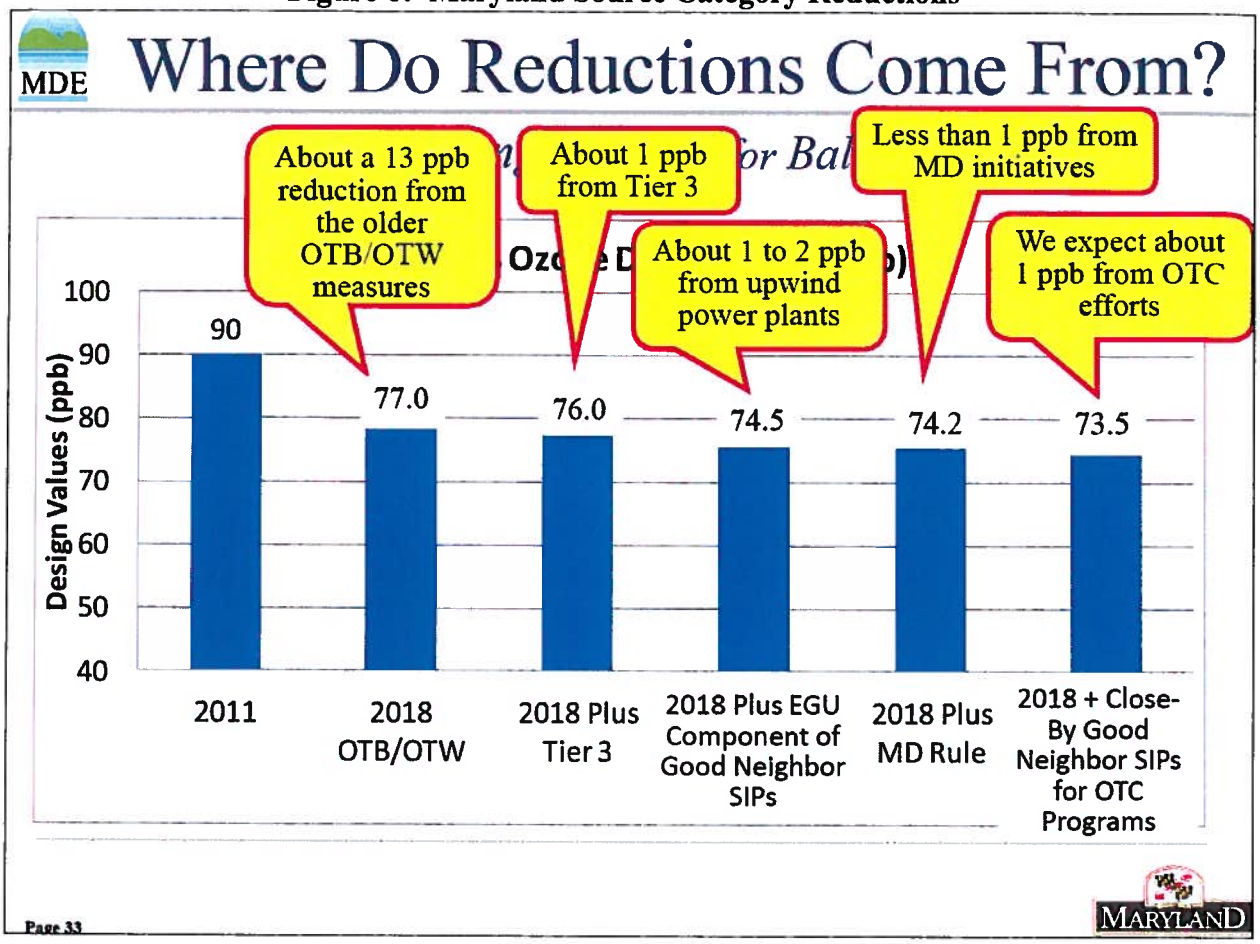
Figure 5: Annual EGUs NO_X emission trends and projection for petition target states



Maryland's expected improvement in air quality is perhaps best illustrated by the material presented by Maryland at the New Jersey Clean Air Council Hearing on April 14, 2015.[7] Maryland used the following chart to show how they believe these additional control programs will bring its monitors into attainment with the 2008 ozone NAAQS. As can be seen from the graphic used in that presentation Maryland believes that it will be able to reach attainment with the 75 ppb ozone NAAQS with nothing more than on-the-books/on-the-way controls, Tier 3 controls, OTC measures and local Maryland initiatives – without additional reductions emission reductions from upwind states.

[7] http://midwestozonegroup.com/files/MOGMay7Final050515.pdf

Figure 6: Maryland Source Category Reductions



6. USEPA projects that in 2017 all Maryland monitors, including Cecil, will attain or are already in attainment of the 2008 75 ppb ozone NAAQS.

In its final CSAPR update rule, EPA identified only two residual nonattainment monitors from within the Northeast, both located in Connecticut; monitor 090019003 in Fairfield and monitor 090099002 in New Haven. In Maryland, no monitors were identified as in nonattainment of the 2008 ozone NAAQS in the final 2017 budget control case projection.

As can be seen in the table below, the final 2017 CSAPR budget control strategy[8] achieves a resulting 2017 average design value for all monitors in Maryland, with the exception of Harford monitor 240251001, as in attainment of the 75 ppb NAAQS. However, the Harford monitor 240251001 is currently measuring a three year, 2014 through 2016, design value of 73 ppb which is well below the predicted design value of 78.0 ppb.

[8] Table D-8, EPA-HQ-OAR-2015-0500-0555

Table 2: Maryland Monitors and 8-hr Ozone Design Values (ppb)

Final CSAPR Update Monitor	2011	Final CSAPR Update Base Case Modeling for 2017 (without PA RACT II controls)	Final CSAPR Update Base Case Modeling for 2017 (with partial PA RACT II NO_X controls)	Final CSAPR Update Control Strategy Case Modeling for 2017 (considering final CSAPR budgets)
Anne Arundel - 240030014	83.0	69.1	69.0	68.3
Baltimore - 240051007	79.0	68.6	68.4	67.9
Baltimore - 240053001	80.7	71.1	71.1	70.5
Calvert - 240090011	79.7	69.0	69.0	68.5
Carroll - 240130001	76.3	65.8	65.8	64.5
Cecil - 240150003	83.0	69.9	69.7	68.6
Charles - 240170010	79.0	64.7	64.8	63.5
Dorchester - 240199991	75.0	65.2	65.5	64.8
Frederick - 240210037	76.3	66.5	66.1	64.9
Garrett - 240230002	72.0	61.6	61.4	58.2
Harford - 240251001	90.0	78.8	78.8	78.0
Harford - 240259001	79.3	66.9	66.9	66.1
Kent - 240290002	78.7	65.6	65.6	64.6
Montgomery - 240313001	75.7	65.4	65.4	64.6
Prince George's - 240330030	79.0	66.4	66.4	65.7
Prince George's - 240338003	82.3	68.1	68.1	67.2
Prince George's - 240339991	80.0	67.0	67.0	66.3
Washington - 240430009	72.7	63.3	62.8	61.1
Baltimore (City) - 245100054	73.7	66.1	66.0	65.4

As it relates to this petition by Maryland, it is significant that Maryland has been predicted by EPA to have one 2008 ozone nonattainment monitor in 2017 and that monitor is currently observed to be in attainment of the 75 ppb standard using most recent year three-year design values. We urge EPA to confirm this prediction as it additionally addresses the merit of the Maryland petition.

7. The only maintenance monitor in Maryland that has been identified by USEPA is the Harford monitor – a monitor where ambient ozone concentrations are more affected by bay breeze than interstate transport.

The only monitor in Maryland that has been identified by USEPA as being a maintenance monitor is Harford. This monitor is referred to as "Edgewood" by Maryland. All other monitors in Maryland have been determined by USEPA to be in attainment and in no need of further regulatory attention under the Good Neighbor SIP provisions of CAA Section 110(a)(2)(D)(i) and therefore under CAA Section 126. The following is a complete list of all monitors in the East that USEPA has identified as being maintenance monitors under the CSAPR Update Rule.

Table 3 - Ozone Maintenance Monitors

Monitor ID	State	County	Average design value 2009–2013	Maximum design value 2009–2013	Average design value 2017	Maximum design value 2017	2013–2015 design value
090010017	Connecticut	Fairfield	80.3	83	74.1	76.6	81
090013007	Connecticut	Fairfield	84.3	89	75.5	79.7	83
211110067	Kentucky	Jefferson	85.0	85	76.9	76.9	[121] N/A
240251001	Maryland	Harford	90.0	93	78.8	81.4	71
260050003	Michigan	Allegan	82.7	86	74.7	77.7	75
360850067	New York	Richmond	81.3	83	75.8	77.4	74
361030002	New York	Suffolk	83.3	85	76.8	78.4	72
390610006	Ohio	Hamilton	82.0	85	74.6	77.4	70
421010024	Pennsylvania	Philadelphia	83.3	87	73.6	76.9	73
481210034	Texas	Denton	84.3	87	75.0	77.4	83
482010024	Texas	Harris	80.3	83	75.4	77.9	79
482011034	Texas	Harris	81.0	82	75.7	76.6	74
482011039	Texas	Harris	82.0	84	76.9	78.8	69

A bay breeze is a local meteorological event that arises from a pressure gradient formed from the temperature contrast of "air over land" and "air over water". Due to the differences in temperature of the two areas of air, a low-level pressure gradient forms with higher air pressure over the water. Synoptic, or area wide, low level winds lack the force to oppose this local pressure gradient. During the day air is forced from the water surface over the land. At night, when the land cools quicker than the water, the wind flow reverses and the wind flows from the land to the water body.

This is important because the local bay breeze effect recirculates and or traps pollutants causing high measurements at the ambient monitors in comparison to other local monitors not affected by the bay breeze effect. This phenomenon was studied and is discussed in *EM Magazines September 2014 issue, Chesapeake Bay Breeze - Enhancement of Air Pollution Episodes and Boundary Layer Venting.*

This study concluded the following "Much like other locations susceptible to sea, bay, or lake breeze circulations, the Chesapeake Bay breeze plays an important role in local air pollution events in Maryland. The transport of emissions from the Baltimore-Washington metropolitan area, favorable O_3 production conditions over the bay waters, and subsequent transport of high O_3 via the bay breeze, lead coastal locations, such as Edgewood, MD, to observe some of the worst air pollution in the region". The article's conclusion goes on to state, "The bay breeze was shown to increase surface O_3 pollution in Maryland well above the regional background. Even as O_3 precursors in the United States are reduced through emissions programs, the relatively frequent sea, bay or lake breeze circulations will likely continue to create localized pollution events".

Similarly, in a study[9] conducted during the 2011 ozone season, a notable period as this is the calendar year meteorology that EPA uses in the CSAPR update modeling platform, researchers found that on eight of the nine days in which a bay breeze or interrupted bay breeze event was observed at Edgewood, ozone observations exceeded the 75 ppb NAAQS, and the only two days with observed maximum daily 8-hour ozone concentrations of greater than 95 ppb

9 Stauffer, R.M., Thompson, A.M., Martins, D.K. et al. J Atmos Chem (2015) 72: 335. doi:10.1007/s10874-012-9241-6

occurred on bay breeze impacted days. The bay breeze day that did not exceed the EPA standard was just less than the 2008 NAAQS. In this region, ozone was found to peak an average of three hours later when the bay breeze was sustained all day compared to other studied days in July 2011.

These results indicate that while bay breezes and the processes associated with them are not necessary to cause exceedances near the Harford monitor, bay breezes exacerbate poor air quality that is sustained into the evening, oftentimes leading to nighttime observed exceedances. The maximization of ozone well past typical midday ozone peak periods gives evidence that bay breeze transport is a dominant process at Harford, compared to other sites in Maryland, and appears to play a defining role in Edgewood's poor air quality relative to the other ozone monitors in the regional nonattainment area.

Given the inappropriate location of the Harford monitor as an indicator of regional air quality and the influence of bay breeze circulation on observed ozone exceedances, it should not be considered for policy development on such critical issues as implementation of the Good Neighbor SIP requirements of the Clean Air Act.

8. USEPA Tier 3 modeling demonstrates that all Maryland monitors, including Cecil and Harford, will be in attainment with the 2008 ozone NAAQS in 2025 thus satisfying the agency's long standing test for addressing maintenance areas.

On April 28, 2014, EPA finalized the *Control of Air Pollution From Motor Vehicles - Tier 3 Motor Vehicle Emission and Fuel Standards* (Tier 3) rule[10] that established more stringent vehicle emissions standards and reduced the sulfur content of gasoline beginning in 2017, as part of a systems approach to addressing the impacts of motor vehicles and fuels on air quality and public health. The gasoline sulfur standard was designed to make emission control systems more effective for both existing and new vehicles, and enabled more stringent vehicle emissions standards. The vehicle standards reduced both tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy duty vehicles. This resulted in significant reductions in pollutants such as ozone, particulate matter, and air toxics across the country and helped state and local agencies in their efforts to attain and maintain health-based NAAQS.

To support this rule, a national scale air quality modeling analysis was performed[11] to estimate the impact of the Tier 3 standards on future year annual and 24-hour PM2.5 concentrations, daily maximum 8-hour ozone concentrations, annual nitrogen dioxide concentrations, annual nitrogen and sulfur deposition levels, annual ethanol and select annual and seasonal air toxic concentrations as well as visibility impairment. EPA states in their

10 79 FR 23414
11 EPA-HQ-OAR-2011-0135-5061

summary of air quality findings that "[our] modeling indicates that there will be substantial decreases in ozone across most of the country as a result of the Tier 3 standards.[12]"

Specifically, as noted in Appendix B of the air quality modeling technical support document referenced above, EPA identifies that with the initial implementation of Tier 3 standards which commences in 2017, all counties in Maryland will be in attainment of the 2008 8-hour ozone NAAQS by 2018. Table 4 below provides an excerpt of that Appendix. Results of 2030 projections show even greater improvement in air quality with the full implementation of the rule.

Table 4 - Excerpt of EPA Table B-1, 8-Hour Ozone Design Values for Tier 3 Scenarios (units in ppb)

State	County	2007 Baseline DV	2018 Reference DV	2018 Tier 3 Control DV	2030 Reference DV	2030 Tier 3 Control DV
Maryland	Anne Arundel	85.7	69.42	68.43	64.77	63.22
Maryland	Baltimore	83.3	71.97	71.52	68.57	67.72
Maryland	Calvert	78.0	64.47	63.83	59.56	58.58
Maryland	Carroll	82.3	65.89	64.82	61.19	59.37
Maryland	Cecil	89.0	73.70	72.82	68.24	67.02
Maryland	Charles	80.7	64.67	63.80	60.61	59.33
Maryland	Frederick	80.3	63.69	62.69	59.6	57.75
Maryland	Garrett	73.3	64.57	64.22	62.57	62.01
Maryland	Harford	90.7	76.59	75.87	71.07	69.99
Maryland	Kent	81.3	67.08	66.25	62.12	60.94
Maryland	Montgomery	82.7	66.92	65.63	62.14	59.74
Maryland	Prince Georges	85.3	69.05	68.01	64.5	62.63
Maryland	Washington	76.7	63.30	62.58	59.17	58.17
Maryland	Baltimore City	67.0	60.40	60.01	57.88	57.19

Based on these EPA findings, with no more than adhering to existing on-the-books control programs already promulgated by the Agency for improving air quality in the region, Maryland is predicted to achieve attainment of the 2008 8-hour ozone NAAQS in all counties by 2018 thereby rendering unnecessary the need for Maryland's §126 petition.

12 Id., Page 10

9. Had EPA air modeling projections taken into account the significant emission reduction programs that are legally mandated to occur, it would have predicted Maryland to have no nonattainment or maintenance areas.

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 predicted air quality in Maryland and therefore are substantive to the merit of the subject petition. As part of its review of the merits of the petition, we urge that EPA conduct a full assessment of these reductions. In addition, EPA must consider that any effort to impose new controls on sources in the 5 target states would necessarily result in over-control prohibited by the Clean Air Act and applicable judicial precedent. These additional control programs not yet considered in EPA's modeling include -

a. Pennsylvania RACT II.

The final Pennsylvania Reasonably Available Control Technology II ("PA RACT II)[13] requirements apply to major NO_X or VOC emitting facilities in existence on or before July 20, 2012. The applicability threshold for the RACT II rule is 100 tpy and 50 tpy for NO_X 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, the regulations limiting EGU NO_X emissions as well as emissions from other major sources of NO_X and VOC began at that time and are now being implemented on a year – round basis. From a report prepared by Olympus Power, LLC entitled "Estimation of Pennsylvania RACT II Rule on Pennsylvania Ozone Season NO_X Emissions from Electric Generation Units"[14], it is apparent that EGU NO_X emissions from EGUs in 2017 will be only 27,010 tons compared with 44,551 tons of actual CAMD ozone season emissions in 2014 – a 39% reduction. More significantly, when these 2017 NO_X emissions are compared with EPA IPM 5.14 data (which predicted ozone season EGU NO_X emissions to be 52,173 tons) – a 48% reduction is realized. The Olympus Power emission estimation is consistent with the Pennsylvania Department of Environmental Protection's (PADEP) estimation of EGU ozone season NO_X emissions which is a range of 20,588 to 29,540 tons of NO_X.

[13] 25 PA. Code §§129.91-129.95

[14] http://www.midwestozonegroup.com/files/PARACTNOx.pdf

b. OTC Measures

The State of Maryland, itself, has identified[15] nine programs that the OTC has recommended for implementation by its member states to reduce both NO_X and VOC. These programs (set out below) have the potential to reduce a total of nearly 27,000 tons of ozone season NO_X and 22,000 tons of ozone season VOC emission reductions.

Table 5 - NO_X and VOC Reduction Programs

OTC Model Control Measures	Regional Reductions (tons per year)	Regional Reductions (tons per day)
Aftermarket Catalysts	14,983 (NO_X) 3,390 (VOC)	41 (NO_X) 9 (VOC)
On-Road Idling	19,716 (NO_X) 4,067 (VOC)	54 (NO_X) 11 (VOC)
Nonroad Idling	16,892 (NO_X) 2,460 (VOC)	46 (NO_X) 7 (VOC)
Heavy Duty I & M	9,326 (NO_X)	25 (NO_X)
Enhanced SMARTWAY	2.5%	
Ultra Low NOX Burners	3,669 (NO_X)	10 (NO_X)
Consumer Products	9,729 (VOC)	26 (VOC)
AIM	26,506 (VOC)	72 (VOC)
Auto Coatings	7,711 (VOC)	21 (VOC)

Here too, we urge EPA to determine the extent to which OTC states are following the recommendation of the OTC and to assess the impact that these programs have on air quality in Maryland.

[15] http://midwestozonegroup.com/files/MOG_May_7_Final_050515.pptx

Beyond the aforementioned programs, Maryland air quality will benefit in the very near future from other programs. For example, a recent report from the Maryland PIRG[16] found that Maryland will receive $71 million to reduce NOx emissions from diesel engines and electric transportation projects as part of the national Volkswagen settlement. Maryland and EPA should both consider that investment in an 'on the way' project and include in future projections.

10. The CSAPR Update Rule legally and practically resolves the issues raised by the Maryland petition.

USEPA's final CSAPR Update rule (adopted pursuant to CAA Section 110(a)(2)(D)(i)) has already resolved the responsibility of the states and sources named in the Maryland's petition (filed pursuant to CAA Section 126) for addressing ozone impact on Maryland's air quality, because both sections of the CAA call for the application of the same legal standard.

CAA §126(b) provides -

> Any state or political subdivision may petition the Administrator for a finding that any major source or group of stationary sources emit or would emit any air pollutant in violation of the prohibition of section 110(a)(2)(D)(ii) … [17]

CAA §110(a)(2)(D)(i) provides -

> Each plan shall … contain adequate provisions … prohibiting … any source … from emitting any air pollutant in amounts which will … contribute significantly to non-attainment in, or interfere with maintenance by, any other state

Thus, resolution of the question of interstate transport under CAA §110(a)(2)(D)(i) effectively and legally resolves any issues that might be raised in a petition filed under CAA §126(b).

Significantly, during the course of the rulemaking on the CSAPR Update, EPA specifically solicited comment on whether to impose emission limits on the basis of the type of shorter time-frame that has been proposed by Maryland in this petition. After carefully considering the comments filed in response to that request for comment EPA made the final decision to establish a program for the regulation of NO_X emissions from EGUs including those named in the Maryland petition. It is that CSAPR Update program that currently applies to the EGUs named in the Maryland petition. Compliance with those requirements is all that is needed to satisfy any obligation that the named sources and states have to the State of Maryland.

In an affidavit filed in support of the agency's position in connection with the challenge to the Kentucky Good Neighbor SIP, then Assistant Administrator Janet McCabe offered the

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16 http://marylandpirg.org/reports/mdp/deceit-transformation

17 Appalachian Power Co. v. EPA, 249 F.3d 1032 (D.C. Cir.) held this to be a scrivener's error and that the reference here was intended to be to section 110(a)(2)(D)(i) rather than to section 110(a)(2)(D)(ii) as written.

following explanation of why imposing the best emission rate of a source should not be legally mandated, as has been proposed by Maryland.

> The EPA also considered the extent to which certain EGUs were able to operate at a rate better than 0.10 lb/mmBtu. However, the EPA did not assume and does not agree with Ms. Clements that it is appropriate to assume that EGUs can necessarily operate at the best rate ever achieved in the last 10 years. In the context of evaluating achievable NO_X emission rates for EGUs with existing SCR, the EPA found that it is not reasonable to assume that it is cost effective for an EGU with SCR to achieve its best ever rate over the course of its operating life. Specifically, the EPA found that the lowest NO_X year for SCRs often reflects installation of a brand new system, including brand new catalyst. The NO_X removal efficiency under brand new conditions is not necessarily cost-effectively sustainable over time.

EPA has already considered the relief requested by Maryland in connection with its 126 petition and has rejected such a request. Accordingly, the Maryland petition should be rejected as being without legal or technical bases.

11. The 2015 70 ppb ozone NAAQS does not provide a basis for the petition.

The 2015 70 ppb ozone NAAQS was finally adopted by USEPA on October 1, 2015. A memorandum of Acting Assistant Administrator McCabe also dated October 1, 2015, specifically notes that -

> Formal attainment plans for the 2015 standards are not anticipated to be due until 2020 or 2021 …[18]

The memorandum goes on to explain the plan for addressing interstate ozone transport as follows -

> The "Good Neighbor" provision of the CAA, section 110(a)(2)(D)(i)(l), requires upwind states to develop SIPs that prohibit emissions of pollutants in amounts that will contribute significantly to non-attainment, or interfere with maintenance of, a NAAQS in another state. These Good Neighbor SIPs are due within 3 years of promulgation of a new or revised NAAQS, meaning that transport SIPs for the 2015 ozone NAAQS will be due by October 2018.

A petition filed now under CAA §126 is clearly a premature action as it relates to the 2015 ozone NAAQS given the careful framework by which any new NAAQS is to be implemented as well as the circumstance that all measured ozone design values in Maryland

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[18] https://www.epa.gov/sites/production/files/2015-10/documents/implementation_memo.pdf, p.

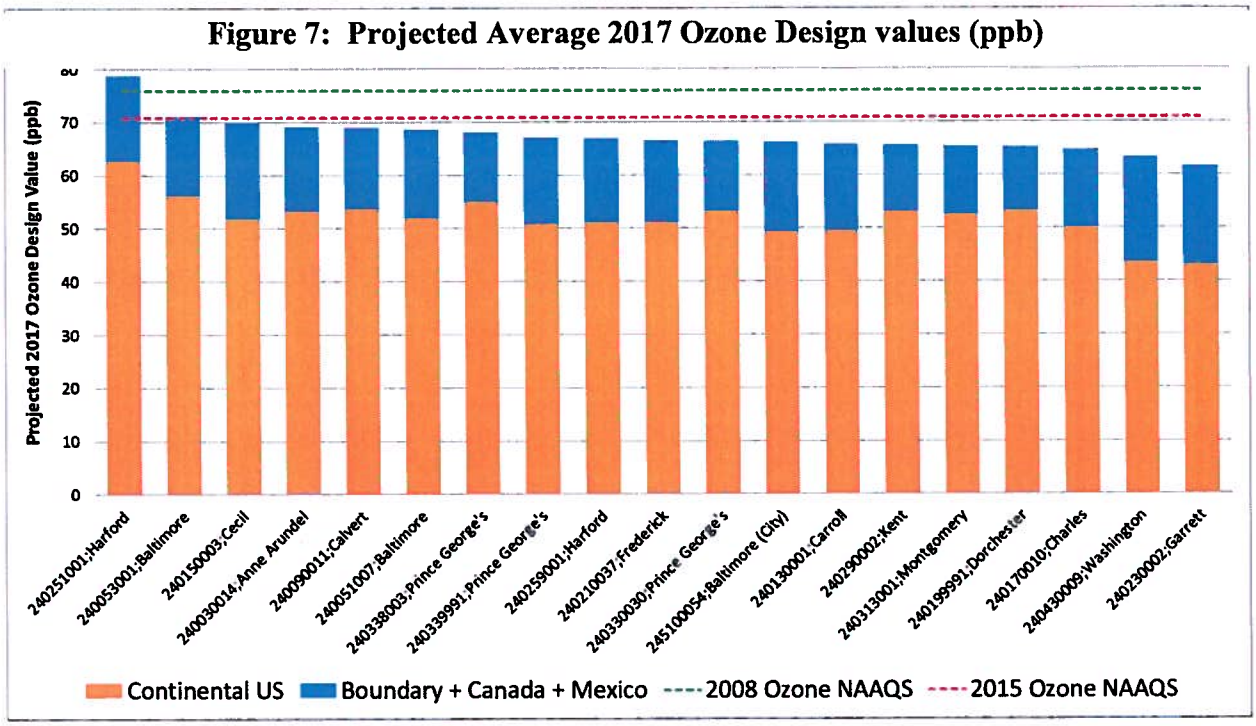
show measured attainment of that standard.

12. 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, 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 the states and EGUs that are the target of this petition are not subject to the illegal over-control of emissions.

The figure below depict all monitors in Maryland and their projected average 2017 ozone design values (ppb) at these monitors[19]. The data presented here show each monitor's projected ozone design values compared to the 75 ppb NAAQS in terms of contributed U.S. anthropogenic emissions and the aggregate of initial & boundary conditions[20] and North American international emissions originating from Canada and Mexico.

Figure 7: Projected Average 2017 Ozone Design values (ppb)



[19] EPA-HQ-OAR-2015-0500-0459

[20] Boundary conditions 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 some fraction of U.S. emissions which exit the regional model domain but get re-imported into the domain via synoptic-scale recirculation.

Table 6 - Maximum Daily 8-hr Ozone Design Value (ppb)

Monitor ID	State	County	2017 Base Case Average	Contribution from Boundary + Canada + Mexico	2017 Base Case Minus Boundary + Canada + Mexico
240251001	Maryland	Harford	78.8	16.1	62.7
240053001	Maryland	Baltimore	71.1	14.9	56.2
240150003	Maryland	Cecil	69.9	18.0	51.9
240030014	Maryland	Anne Arundel	69.1	15.8	53.3
240090011	Maryland	Calvert	69.0	15.4	53.6
240051007	Maryland	Baltimore	68.6	16.7	51.9
240338003	Maryland	Prince George's	68.1	13.1	55.0
240339991	Maryland	Prince George's	67.0	16.2	50.8
240259001	Maryland	Harford	66.9	15.7	51.2
240210037	Maryland	Frederick	66.5	15.4	51.1
240330030	Maryland	Prince George's	66.4	13.2	53.3
245100054	Maryland	Baltimore (City)	66.1	16.7	49.4
240130001	Maryland	Carroll	65.8	16.3	49.5
240290002	Maryland	Kent	65.6	12.5	53.1
240313001	Maryland	Montgomery	65.4	13.0	52.4
240199991	Maryland	Dorchester	65.2	11.9	53.3
240170010	Maryland	Charles	64.7	14.6	50.1
240430009	Maryland	Washington	63.3	19.8	43.5
240230002	Maryland	Garrett	61.6	18.6	43.0

The modeling data shows that "but for" these boundary conditions and the international components, all monitors in Maryland would be in attainment of both the 2008 and 2015 ozone NAAQS.

The CAA addresses international emissions directly. Section 179(B) subsections (a) and (b) state that -

(a) Implementation plans and revisions

> Notwithstanding any other provision of law, an implementation plan or plan revision required under this chapter shall be approved by the Administrator if—
>
> (1) such plan or revision meets all the requirements applicable to it under the[21] 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 specified under the applicable provision of this chapter, or in a regulation promulgated under such provision, and

[21] So in original. Probably should be "this".

(2) the submitting State establishes to the satisfaction of the Administrator 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 specified under the applicable provision of this chapter, or in a regulation promulgated under such provision, but for emissions emanating from outside of the United States.

(b) Attainment of ozone levels

Notwithstanding any other provision of law, any State that establishes to the satisfaction of the Administrator that, with respect to an ozone nonattainment area in such State, such State would have attained the national ambient air quality standard for ozone by the applicable attainment date, but for emissions emanating from outside of the United States, shall not be subject to the provisions of section 7511(a)(2) or (5) of this title or section 7511d of this title. (Emphasis added.)

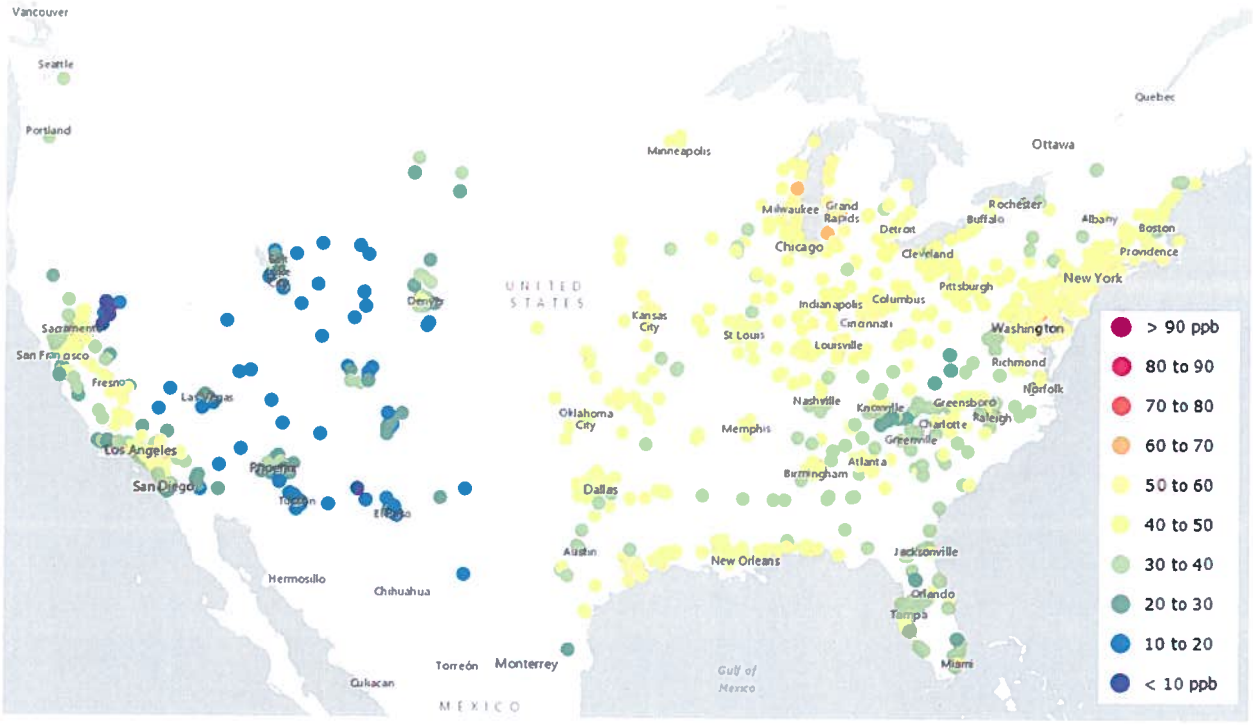
Addressing international emissions is important not only to Maryland but also states and sources targeted by the petition that are the target of this petition and also obligated to submit under CAA Section 110(a)(2)(D) Good Neighbor SIPs.

The U.S. Supreme Court has ruled that 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. Specifically, the Supreme Court stated: "EPA cannot require a State to reduce its output of pollution by more than is necessary to achieve attainment in every downwind State. . ." EPA v. EME Homer City Generation, 134 S. Ct. 1584, 1608 (2014).

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." Slip op at 11. However, this "mess" seems to be related to international emissions for which upwind states and sources have no responsibility.

Figure 8: Projected 2017 ozone design values (ppb) excluding the contribution from boundary condition, initial condition, Canadian and Mexican emission sources shown below was prepared by Alpine Geophysics for MOG and depicts the projected 2017 8-hour ozone Design Values across the US excluding the international emissions sector. The exclusion of international emissions was executed for all such emissions whether from international border areas or beyond. Note that this projection shows all monitors in the continental US with a design value equal to or less than 66 ppb when international emissions are excluded. Modeling the US emissions inventory projected to 2017 but without the impact of uncontrollable international emissions demonstrates that the CAA programs in the US are performing as intended.

Figure 8: Projected 2017 ozone design values (ppb) excluding the contribution from boundary condition, initial condition, Canadian and Mexican emission sources



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.[22] 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[23].

This figure does not show the full impacts of excluding U.S. background. Consequently, the 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.

13. Conclusion.

The Maryland's Section 126 Petition actions would not meaningfully impact ozone air quality in Maryland. However, ozone precursor emissions will continue to be reduced absent the Maryland Section 126 petition due to the CSAPR Update Rule, new Tier 3 federal gasoline standards, and other on-the-books controls.

[22] EPA-HQ-OAR-2016-0751-0009
[23] Atmos. Chem. Phys., 17, 2943–2970(2017).

Consequently, there is no legal or technical basis for this or any other CAA §126 petition against these sources seeking to address Maryland's ozone air quality.

Accordingly, the Midwest Ozone Group urges that USEPA deny the petition.