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west virginia department of environmental protection

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April 6, 2017

Administrator Scott Pruitt  
US Environmental Protection Agency  
William Jefferson Clinton Building  
1200 Pennsylvania Avenue NW  
Washington, D.C. 20460

Attention: Docket ID No. EPA-HQ-OAR-2016-0751; Notice of Availability of the Environmental Protection Agency's Preliminary Interstate Ozone Transport Modeling Data for the 2015 Ozone National Ambient Air Quality Standard (NAAQS) [82 FR 1733, 06JAN2017]

Dear Administrator Pruitt:

The West Virginia Department of Environmental Protection (WVDEP), Division of Air Quality appreciates the opportunity to provide comments on the U.S. Environmental Protection Agency's (USEPA) *Notice of Availability of the Environmental Protection Agency's Preliminary Interstate Ozone Transport Modeling Data for the 2015 Ozone National Ambient Air Quality Standard*. The WVDEP supports USEPA's efforts to provide technical assistance to the states in their development of State Implementation Plans (SIPs) to address the requirements of Clean Air Act section 110(a)(2)(D)(i)(I) ("Good Neighbor" provisions) and appreciates USEPA's willingness to consult with states on this important matter.

The WVDEP joins in the comments submitted by the Association of Air Pollution Control Agencies (AAPCA)<sup>1</sup> regarding the *Preliminary Interstate Ozone Transport Modeling Data for the 2015 Ozone National Ambient Air Quality Standard* (NODA). In particular, the WVDEP is concerned with the inclusion of implementation of the Clean Power Plan (CPP) in the 2023 projections; the application of the one percent threshold, established in CSAPR, for interstate transport obligations; and USEPA's continued reliance on the Integrated Planning Model (IPM). WVDEP is also concerned that the modeled contributions are not consistent with the modeled NO<sub>x</sub> reductions, possibly indicative of an issue with CAMx v6.32.

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<sup>1</sup>Letter to Docket ID No. EPA-HQ-OAR-2016-0751 from the Association of Air Pollution Control Agencies, dated March 13, 2017.

### Inclusion of CPP

WVDEP notes that with the inclusion of the CPP in the 2023 projections, IPM projections<sup>2</sup> include the shutdown of the following WV units:

Grant Town (ORIS ID 10153), Units 1 A and 1B, with a capacity of 80 MW,  
Fort Martin (ORIS ID 3943), Units 1 and 2, with a total capacity of 1107 MW, and  
Mt. Storm (ORIS ID 3954), Unit 3, with a capacity of 529 MW.

IPM further predicts the decreased utilization of West Virginia's coal-fired fleet. A review of the actual summer generation for 2015 and 2016<sup>3</sup>, 2018 projections under the CSAPR update<sup>4</sup>, and the 2023 projections<sup>5</sup>, show a significant decrease (23% below 2016 actual levels) in estimated fossil-fired West Virginia power generation for the summer of 2023. The predicted shutdowns and decreased utilization, during the summer of 2023, results in decreased NOx emissions of 48% from reported 2016 levels and 59% from projected 2018 levels.<sup>6</sup>

<b>West Virginia</b>	<b>2015</b>	<b>2016</b>	<b>2018</b>	<b>2023</b>
Gross Generation (MWh)	32,346,888.67	33,945,282.32	33,787,128.39	26,187,547.02
NOx (tons)	26,937.368	21,177.919	26,698.303	10,921.260

Note: 2015 and 2016 data as reported to CAMD for May - September, Projected 2018 and 2023 Fossil-fired generation.

Operators of the EGU units at Grant Town, Fort Martin and Mt. Storm have not informed the WVDEP of any intentions of shutting them down. It is understood that IPM may have predicted that the units would not operate for economic reasons in the future but we are deeply concerned that projections based on incorrect assumptions may result in flawed results and subsequent policy decisions.

WVDEP notes that USEPA does acknowledge that "In the 2023 projections presented in this NODA, the EPA's modeling does not project the operation of a number of coal-fired and oil-fired units due to simulated future-year economic conditions, whether or not such capacity has publicly-released plans to retire."<sup>7</sup>

One of the critical assumptions that EPA included was the implementation of the Clean Power Plan, which was stayed by the Supreme Court in February 2016.<sup>8</sup> On March 28, 2017, President Trump signed an Executive Order "Promoting Energy Independence and Economic

<sup>2</sup>Docket ID No EPA-HQ-OAR-2016-0751-0029. 2023 Parsed File.

<sup>3</sup>Data from <https://ampd.epa.gov/ampd/> Data for 2015 and 2016 for the CSAPR NOx Ozone Season Program.

<sup>4</sup>Docket ID No EPA-HQ-OAR-2015-0500-0455. Parsed File: 5.15 OS NOx Final Base Case, 2018.

<sup>5</sup>Docket ID No EPA-HQ-OAR-2016-0751-0029. 2023 Parsed File.

<sup>6</sup>Docket ID No EPA-HQ-OAR-2016-0751-0026. 2011el 2011ek 2017ek 2023el ptegu unit comparison

<sup>7</sup>82 FR 1736, 06JAN2017.

<sup>8</sup>*West Virginia et al. v. EPA*, No. 15A773 (U.S. Feb. 9, 2016)

Growth,” which further puts into question the future of the Clean Power Plan. The 2023 modeling was based on faulty, inaccurate data and cannot be relied upon “to help states develop”<sup>9</sup> Good Neighbor SIPs, which was USEPA’s stated reason for providing the information. Therefore, WVDEP strongly encourages USEPA to consult with states and incorporate more accurate assumptions and anticipated regulatory programs in the modeling for 2023. WVDEP further encourages USEPA to provide updated, credible national modeling results for 2023, utilizing states inputs and assumptions, by August 1, 2017, to provide the technical analysis needed for state air agencies to meet the October 26, 2018 deadline for Good Neighbor SIPs.

#### Application of the one percent threshold

WVDEP is concerned about the application of the one percent threshold to define significant contribution for interstate transport obligations. Although USEPA applied the same methodology in the CSAPR<sup>10</sup> and CSAPR Update<sup>11</sup>, this approach is not required and USEPA has used several alternatives for earlier significance assessments. In the EME Homer City decision, the US Supreme Court stated “The Good Neighbor Provision does not dictate a method of apportionment. . . . Under Chevron, Congress’ silence effectively delegates authority to EPA to select from among reasonable options. See *United States v. Mead Corp.*, 533 U. S. 218, 229.”<sup>12</sup>

USEPA has the authority, and in fact the obligation, to develop a methodology that determines significant contribution levels that are appropriate to the level of modeling accuracy. USEPA should determine whether an alternative to the one percent threshold is appropriate, especially when considering the foundation of this preliminary modeling is 2011 data projected to 2023, 12 years in the future; must account for highly complex terrain; and must forecast impacts and linkages across long distances for contributions that are almost undetectable at the monitor.

USEPA recommends a significant impact level (SIL) value of 1.0 ppb in their August 2016 draft *Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program*.<sup>13</sup> This recommendation was based on the results of a well-established statistical approach, the bootstrapping method, which USEPA used to identify levels of change in air quality concentrations considered to be a “significant impact” or an “insignificant impact” contribution to air quality.<sup>14</sup> USEPA in their *Technical Basis for the EPA’s Development of Significant Impact Thresholds for PM<sub>2.5</sub> and Ozone*, explains in “order to obtain a preconstruction permit under the PSD program, an applicant must demonstrate that the increased emissions from its proposed modification or construction will not “cause or contribute to” a violation of any National Ambient Air Quality Standard (NAAQS) or PSD increment (i.e.,

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<sup>9</sup>82 FR 1733, 06JAN2017

<sup>10</sup>76 FR 48208, 08AUG2011.

<sup>11</sup>81 FR 74504, 26OCT2016.

<sup>12</sup>*EPA v. EME Homer City Generation, L.P.*, (2014)

<sup>13</sup>[www.epa.gov/sites/production/files/2016-08/documents/pm2\\_5\\_sils\\_and\\_ozone\\_draft\\_guidance.pdf](http://www.epa.gov/sites/production/files/2016-08/documents/pm2_5_sils_and_ozone_draft_guidance.pdf)

<sup>14</sup>[www.epa.gov/sites/production/files/2016-08/documents/pm2\\_5\\_sils\\_and\\_ozone\\_technical\\_basis\\_document.pdf](http://www.epa.gov/sites/production/files/2016-08/documents/pm2_5_sils_and_ozone_technical_basis_document.pdf)

the source will not have a significant impact on ambient air quality at any location where an exceedance of the NAAQS or PSD increment is occurring or may be projected to occur).”<sup>15</sup>

In the NODA, EPA is proposing to set the threshold for significant contribution at 0.7 ppb, or 1% of the NAAQS. This is inconsistent with the results of the statistical analysis USEPA completed to set the SIL for PSD purposes. On the basis of a statistical analysis USEPA considers a 1 ppb contribution from a single source insignificant, yet a 0.7 ppb contribution from an entire state is considered significant based on an arbitrary methodology. The WVDEP encourages the USEPA to consider an alternative approach for determining what constitutes a significant contribution, with a basis in commonly accepted scientific and mathematical theory, accounting for the level of modeling accuracy considering complex terrain and long distances.

#### EPA’s continued reliance on IPM

WVDEP is also concerned about USEPA’s continued reliance on the IPM for projecting future year emissions from electric generating units (EGUs). WVDEP has commented on a number of unit-level errors, including inaccurate retirements, fuel switching and decrease utilization, in IPM runs used to support earlier interstate transport rules.

USEPA solicited “comments on whether and, if so, how different projection techniques for EGUs would affect emissions and air quality in a manner that could further assist states with their analysis of transported air pollution.”<sup>16</sup> USEPA cited the “inherent uncertainty in anticipating any future-year composition of the EGU fleet”<sup>17</sup> yet continues to rely on IPM, a proprietary, least cost optimization model. The many assumptions included in the model (i.e. fuel prices, demand growth, regulatory requirements, allowance prices, etc.) are subject to change and can lead to faulty results. As an example, USEPA’s IPM modeling results for the January 2004 Notice of Proposed Rulemaking (NPR) for the Clean Air Interstate Rule (CAIR), Base Case 2003 parsed for year 2010<sup>18</sup>, projected 12 units in West Virginia would have SCR installed by 2010. Of these 12 units, 1 unit was retired in 2012 – without having installed SCR; 9 units were retired in 2015 – without having installed SCR; and 2 units installed SCR in 2007. This historical review of IPM projections demonstrates that IPM projections are not predictions of what will happen, but instead are a possible result based on specific assumptions. Real world conditions, differing from the assumptions, result in different outcomes.

WVDEP encourages the use of alternative modeling methodologies, such as the approach used by the Eastern Regional Technical Advisory Committee (ERTAC). The ETRTAC EGU tool is a behavioral pattern matching approach, which reflects economic and regulatory factors that impact EGU behavior, through the use of the Energy Information Agency’s (EIA’s) Annual Energy Outlook (AEO). The AEO provides modeled projections of domestic energy markets, and includes cases with different assumptions of macroeconomic growth, world oil prices,

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<sup>15</sup>Ibid.

<sup>16</sup>82 FR 1736, 06 JAN 2017.

<sup>17</sup>Ibid.

<sup>18</sup>[www.epa.gov/airmarkets/ipm-analysis-clean-air-interstate-rule-cair](http://www.epa.gov/airmarkets/ipm-analysis-clean-air-interstate-rule-cair)

technological progress, and energy policies. Projections in the AEO are not predictions of what will happen, they are modeled projections of what may happen given certain assumptions and methodologies.<sup>19</sup> The ERTAC tool has the added advantage of transparency, since it non-proprietary. It can be utilized by the state air agencies at no cost, and can be updated more frequently.

CAMx concerns

WVDEP is also concerned with the validity of the CAMx modeling results. The CAMx modeling for both the CSAPR Update and the 2015 Ozone NODA were conducted using the same 2011 base year meteorology, using projected emissions for 2017 and 2023, respectively. Summer NO<sub>x</sub> emissions in West Virginia were predicted to decrease by 59% from 2017 to 2023, yet the projected contribution from West Virginia at some monitors, including projected maintenance and nonattainment monitors, did not change or increased. Of the 747 monitors identified in both the 2017 and 2023 projections, 127 monitors showed an increased contribution from West Virginia in 2023, and an additional 68 monitors showed no change despite the decrease in emissions. The table below shows the projected nonattainment and maintenance monitors in the Northeast and West Virginia's projected contribution.

Monitor ID	State	County	2009-2013 Base Period		2017 <sup>20</sup> Projections		2023 <sup>21</sup> Projections		Modeled Contribution	
			Avg DV	Max DV	Avg DV	Max DV	Avg DV	Max DV	2017 <sup>20</sup> WV	2023 <sup>21</sup> WV
90010017	CT	Fairfield	80.3	83	75.8	78.4	68.6	70.9	<b>0.67</b>	<b>0.73</b>
90013007	CT	Fairfield	84.3	89	77.1	81.4	69.4	73.2	<b>0.92</b>	<b>0.92</b>
90019003	CT	Fairfield	83.7	87	78.0	81.1	70.5	73.3	0.95	0.83
90099002	CT	New Haven	85.7	89	77.2	80.2	69.8	72.5	<b>0.66</b>	<b>0.90</b>
240251001	MD	Harford	90.0	93	81.3	84.0	71.3	73.7	2.99	2.59
360810124	NY	Queens	78.0	80	75.7	77.6	69.9	71.7	0.92	0.65
360850067	NY	Richmond	81.3	83	76.3	77.8	71.2	72.7	1.64	1.33
361030002	NY	Suffolk	83.3	85	79.2	80.8	71.3	72.7	0.98	0.86

WVDEP is uncertain if the updates to the Carbon Bond chemical mechanism in CAMx v6.30 related to halogen chemistry reactions that deplete ozone in marine environments, which is included in v6.32 for the NODA analysis, played a role in the unexpected contribution results given the significant decrease in NO<sub>x</sub> emissions. WVDEP encourages USEPA to review the changes in the modeling platforms used for the CSAPR Update and 2015 Ozone NODA.

<sup>19</sup>[www.eia.gov/outlooks/aeo/](http://www.eia.gov/outlooks/aeo/)

<sup>20</sup>Docket ID No EPA-HQ-OAR-2015-0500-0007. 2017 Ozone Contributions.

<sup>21</sup>Docket ID No EPA-HQ-OAR-2016-0751-0007. 2015 O3 NAAQS Preliminary Transport Assessment Design Values & Contributions.

In summary, WVDEP requests USEPA

- to provide updated, credible national modeling results for 2023, utilizing states inputs and assumptions, by August 1, 2017, to provide the technical analysis needed for state air agencies to meet the October 26, 2018 deadline for Good Neighbor SIPs;
- to consider an alternative approach for determining what constitutes a significant contribution, with a basis in commonly accepted scientific and mathematical theory, accounting for the level of modeling accuracy considering complex terrain and long distances;
- to consider the use of alternatives to IPM, such as the ERTAC EGU tool; and
- to review the changes between the modeling platforms for the CSAPR Update and the 2015 Ozone NODA.

WVDEP respectfully requests that USEPA consider the requests addressed in these comments. If you have any questions, you may contact me at (304) 926-0499 ext. 1966.

Sincerely,



William F. Durham, Director  
Division of Air Quality