COMMENTS OF MIDWEST OZONE GROUP
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OTC STAKEHOLDERS MEETING
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Transport Modeling

Midwest Ozone Group (MOG) members operate some 90,000 MW of fossil-fuel fired electric generating capacity in the Midwest and Pennsylvania. MOG has on-going concerns about the technical basis for continued calls for reductions of inter-state transport of NO_X related to ozone nonattainment in the Northeast Ozone Transport Region.

At a time when ozone air quality is dramatically improving, attainment of the 2008 ozone national ambient air quality is being measured at nearly all of the monitoring sites in the OTAG region and when states are seeking their own resolution of the complex issue of how emissions from upwind states relate to downwind areas, EPA has proposed an update of its CSAPR program, supported by most Ozone Transport Commission (OTC) member states, that again singles out emissions from electric generating units (EGU's) - one of the smallest contributors to downwind air quality concentrations. The result is that not a single remaining modelled downwind area air quality problem is predicted to be resolved by the proposed program.

In its December 3, 2015, proposal, EPA concluded that ozone season emissions of NO_X in 23 eastern states affect the ability of downwind states to model attainment and maintainance of the 2008 ozone NAAQS. MOG believes that EPA's proposal is based on dispersion modeling results that are fatally flawed as a result of both erroneous modeling platform assumptions and outdated modeling input parameters.

Recent technical analyses performed by Alpine Geophysics LLC (Alpine) at the request of MOG reveal that, for the primary monitor of concern (090013007) at Fairfield, Connecticut, it is not so much EGUs that are impacting upon that monitor – but rather other sources including: area sources (24%); Boundary and Canada/Mexico/water (predominantly international emissions) (24%); motor vehicles (22%); and biogenics and fire (18%). EGUs are a much smaller contributor at 8% and non EGU point sources at only 4%.

The Alpine analysis found that EPA's 2017 modeling results are both incomplete and flawed and do not provide a reliable basis for the proposed rule. Among the concerns about the EPA modeling are the following:

1. In running its air quality computer model, EPA chose to reset the "timestep" parameter in the model that defines the altitude from peak winds that are used in the calculations of vertical transport for the purpose of speeding-up the processing time of the computer which could otherwise take weeks or months. However, this was done without validation to determine the impact of this change or whether the accuracy of the model may have been adversely affected. It turns out that model accuracy has been adversely affected. Alpine analyzed EPA's modeling results for a small sample of days and found daily peak differences up to 2.8 ppb, raising questions about the basic conclusions of EPA's analysis, including both its attainment/nonattainment calculations as well as its calculations regarding which states may or may not be significant contributors to other states.

2. Even though EPA based its predicted future year ozone concentrations for each monitor on the 10 days with the highest modeled concentrations, it did not conduct a model performance validation on those 10 days. Instead EPA evaluated the performance of its model by looking at all days where ozone was observed to be above 60 ppb. Model performance conducted by Alpine on the 10 days selected by EPA for the proposed rule reveals model performance to be poor at monitors situated at complex meteorological locations, e.g., a land/water interface such as near the Connecticut monitor in question.
3. EPA's choice to use of 12 km grid cell modeling resulted in EPA selecting predicted ozone concentrations from predominantly water-based grid cells for all of its nonattainment monitors based on grid cells situated on land/water interfaces – and not from land-based grid cells where the monitor itself is located. This applies to all of the nonattainment monitors including those in:

   Fairfield, Connecticut;
   New Haven, Connecticut; and
   Sheboygan, Wisconsin.

   The Alpine Geophysics study finds that EPA's decision to base its future year projections on the selection of data from grid cells over water – and not from the grid cells over land where the monitors are located - effectively doubles the error found in its modeling results.
4. EPA has based its proposal on IPM 5.14 modeling that assumes significantly higher emissions than will actually exist in 2017. Specifically, EPA's modeling results failed to account for the following reductions in NOx and VOC emissions in 2017:

   a. Use of even EPA's own estimate of what emission will be in 2017 (the IPM v 5.15 emission inventory) will reduce assumed EGU NOx emissions by 93,000 tons per ozone season – a reduction larger than the 83,000 ton reduction per ozone season to be achieved by the proposed rule itself.
   b. EPA has failed to recognize that Pennsylvania RACT II controls will reduce ozone season NOx emissions from EGUs by an additional 19,000 tons per ozone season with additional NOx and VOC reductions occurring from other affected source categories.
   c. EPA failed to recognize that there are nine Northeast Ozone Transport Region control measures that will reduce regional NOx emissions by an additional 27,000 tons per ozone season (as well as reduce ozone season VOC emissions by 3,300 tons per ozone season.
   d. EPA failed to account for RACT controls applicable to documented nonattainment areas that are required by law to be in place by the ozone season of 2017. For example, Connecticut has already identified the need to lower the NOx limits on the municipal waste contributors and fuel burning units in Connecticut to achieve appropriate RACT limits.
   e. EPA has failed to account for the reductions in High Electric Demand Day (HEDD) emissions from sources in New York, New Jersey and Connecticut which Connecticut itself describes as necessary to "reach attainment in the NY-

NJ-CT nonattainment area.[1]"

Because of the flawed technical basis for EPA's proposed transport rule, MOG urges the OTC to make sure that any policy decisions are informed by good and current scientific and emissions data. Key drivers of that result would use the most current air quality data in applying the RRF of the model (which helps with both nonattainment and maintenance area determinations) and providing the model with all of the emission reductions within and outside of the OTR that are likely to impact on 2017 air quality, including CT and PA RACT controls and whatever must be done to address HEDD.

[1] "Reasonably Available Control Technology Analysis under the 2008 8-Hour Ozone National Ambient Air Quality Standard", dated July 17, 2014:
http://www.ct.gov/deep/lib/deep/air/ozone/ozoneplanningefforts/ract_2008_naaqs/2014-07-17_-_ct_final_ract_sip_revision.pdf