

## Enclosure

### **Response to Petition from Sierra Club to Redesignate as Nonattainment 57 Areas with 2012 Design Values Violating the 2008 8-Hour National Ambient Air Quality Standards for Ozone**

By Petition dated November 14, 2013, Sierra Club requested that the U.S. Environmental Protection Agency redesignate as nonattainment 57 areas with 2012 design values violating the 2008 national ambient air quality standards (NAAQS) for ozone. Sierra Club further requested that the EPA set specific boundaries for the areas, as identified in the Petition. For the reasons discussed below, the EPA is denying the Petition.

Whenever the EPA promulgates a new or revised NAAQS, the EPA has a mandatory duty under CAA section 107(d)(1) to designate all areas in the country no later than 2 years from promulgation of the new or revised NAAQS. (The EPA may extend the deadline by up to 1 year if the EPA has insufficient information to complete the designations in 2 years.) For the 2008 ozone NAAQS, the EPA completed these initial area designations in spring of 2012. The EPA based the designations on the most recent certified air quality data available at that time (e.g., generally, 2008-2010 data and, in some cases, 2009-2011 data). For areas designated as attainment that subsequently violate the NAAQS, the CAA provides the EPA with discretion regarding whether and when to redesignate such areas to nonattainment. Section 107(d)(3) of the CAA states, “on the basis of air quality data, planning and control considerations, or any other air quality-related considerations the Administrator deems appropriate, the Administrator may at any time notify the Governor of any State that available information indicates that the designation of any area or portion of an area within the State or interstate area should be revised.” Thus, unlike initial designations, the Administrator does not have a mandatory duty to initiate the redesignation process.

Ground-level ozone is not emitted directly into the air, but is created by chemical reactions between ozone precursors, primarily oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC), in the presence of sunlight. Therefore, the CAA and the EPA’s regulations to control ozone focus on reducing emissions of NO<sub>x</sub> and VOC. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NO<sub>x</sub> and VOC.

Ozone design values are statistics that describe the air quality status of a given area relative to the level of a NAAQS. They are based on a 3-year average of the annual 4<sup>th</sup> highest daily maximum 8-hour ozone concentration. Variations in weather conditions play an important role in determining ozone levels and thus design values can fluctuate from year to year. Ozone levels tend to be highest during the summer months, especially during periods of hot, dry and stagnant weather conditions. The EPA notes that the summer of 2012 was characterized by unusually hot, dry, and stagnant weather conditions, while, conversely, the summer of 2009 was characterized by cooler and wetter than normal conditions throughout much of the United States. These weather conditions contributed to annual 4<sup>th</sup> highest daily maximum 8-hour ozone concentrations which were 6 parts per billion (ppb) higher on average in 2012 than in 2009. This translates to an average 2 ppb increase in ozone design values from the 2009-2011 period to the 2010-2012 period.

In evaluating whether the agency should exercise its discretion under CAA section 107(d)(3) to initiate the redesignation process for the areas identified in the Petition, the EPA considered air quality trends and expected emissions reductions in the near term. The EPA tracks the levels of ozone and the other NAAQS pollutants in the air and how much of each pollutant (or the pollutants that form them) is emitted from various pollution sources. The agency reviews these values year after year to see how the

levels and emissions of the pollutants have changed over time. Nationally, ozone levels have shown a notable decline since 2002. (See <http://www.epa.gov/airtrends/ozone.html>.) The EPA expects this overall long-term trend to continue as additional emissions reductions are achieved through existing regulations. Based on the 2013 ozone design values, 22 of the 57 areas identified in the Petition are again attaining the NAAQS. The EPA notes that if the EPA were to grant the Petition to initiate the redesignation process for one or more areas, we would base the redesignations on the most recent, quality assured air quality design values rather than the 2012 design values. Therefore, the EPA would not grant the Petition for any area for which the most current design value shows attainment.

Our expectation that ozone levels will continue to decline is supported by emissions inventories and projected inventories of NO<sub>x</sub> and VOC emissions that indicate significant emissions reductions in the coming years. The EPA compiles the National Emissions Inventory (NEI)<sup>1</sup> every 3 years. The NEI is a compilation of emissions data collected from state, local and tribal air agencies as well as from the EPA's emissions collection for emissions trading programs and from EPA emissions estimation tools and models. The 2011 NEI is the most recent emissions inventory. In addition, the EPA has projected emissions for 2018,<sup>2</sup> which have been compiled from a variety of sources and include projected emissions reductions from numerous existing EPA regulations. The 2018 projected emissions are estimated using the EPA models for electric generating utilities, on-road vehicles and nonroad engines, as well as by projecting 2011 emissions to 2018 for other sources. A comparison of the 2011 NEI and the projected 2018 emissions inventory provides a prediction of the change in NO<sub>x</sub> and VOC emissions over that several year period.<sup>3</sup>

Emissions of NO<sub>x</sub> in the United States are expected to decline by 29 percent from 2011 through 2018, even when accounting for increases in some sectors, such as the oil and gas production industry. A comparison of the 2011 NEI and the projected 2018 emission inventory predicts a reduction of NO<sub>x</sub> emissions from 14.1 million tons in 2011 to 10 million tons in 2018, a 4.1 million ton reduction. Existing EPA regulations primarily account for those reductions, which come from a variety of sources. On-road mobile source emissions reductions of 3 million tons are predicted from Tier 2, heavy duty, and other motor vehicle standards implemented years ago, as older vehicles are replaced with newer cars and trucks meeting better fuel economy and other standards. The 3 million ton estimate also includes early reductions from the recently finalized Tier 3 standards that EPA expects will provide significant NO<sub>x</sub> emissions reduction benefits from on-road mobile sources in 2018. Approximately 740,000 tons of NO<sub>x</sub> reductions come from locomotive and nonroad engine rules. Reductions from electric generation account for about 500,000 tons of the projected reductions, resulting from the ongoing EPA NO<sub>x</sub> trading programs as well as other factors such as increased use of natural gas. Expected NO<sub>x</sub> emissions increases of about 140,000 tons for the oil and gas sector and about 30,000 tons for other smaller sectors partly offset the reductions, but the net result is still an overall 29 percent decrease in NO<sub>x</sub> emissions.

Emissions of VOC in the United States are expected to decline by 10 percent from 2011 through 2018, even when accounting for increases in some sectors such as the oil and gas production industry. A comparison of the 2011 and 2018 emission inventories predicts a reduction of VOC from 17.2 million tons in 2011 to 15.5 million tons in 2018, a 1.7 million ton reduction. Existing EPA regulations

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<sup>1</sup> 2011 National Emissions Inventory Technical Support Document  
(<http://www.epa.gov/ttn/chief/net/2011inventory.html#inventorydoc>).

<sup>2</sup> 2011 and 2018 Emissions Modeling Platform Technical Support Document  
(<http://www.epa.gov/ttn/chief/emch/index.html#2011>).

<sup>3</sup> The projected 2018 emissions inventory may be used by the Office of Air and Radiation in several contexts, including the development of rules related to the transport of air pollution and the NAAQS.

primarily account for those reductions, which come from a variety of sources. On-road mobile source reductions of 1.2 million tons come from Tier 2, heavy duty, and other standards implemented years ago, as older vehicles are replaced with newer cars and trucks meeting better fuel economy and other standards. The 1.2 million ton estimate also includes early reductions from the recently finalized Tier 3 standards that the EPA expects will provide VOC emission reduction benefits from on-road mobile sources in 2018. Another approximately 664,000 tons of VOC reductions come from nonroad engine rules. Expected VOC increases of about 298,000 tons for the oil and gas sector and about 27,000 tons for other smaller sectors partly offset the reductions, but the net result is an overall 10 percent decrease in VOC.

The EPA notes that, based on 2013 design values, all but 1 of the areas identified in the Petition would be classified as Marginal if redesignated to nonattainment. The Marginal classification is for nonattainment areas with ozone levels closest to the level of the NAAQS. Under CAA section 182(a), Marginal areas have nominal planning requirements (e.g., submission of periodic emissions inventory and establishment of reasonably available control technology) and are not required to submit attainment demonstrations. Attainment demonstrations, which are required for nonattainment areas with higher classifications, are state plans that describe the local, regional and national control measures to be implemented to reduce emissions in order for the area to demonstrate attainment by the required attainment date. When Congress amended the CAA in 1990, it anticipated that nonattainment areas with ozone concentrations close to the level of the NAAQS would likely come into attainment within 3 years after designation as nonattainment without any additional local planning. Therefore, redesignating the areas identified in the Petition to nonattainment that would be classified as Marginal would not on its own result in additional local attainment planning requirements for the areas. The EPA believes that the NO<sub>x</sub> and VOC emissions reductions discussed above that are projected in the near term from existing regulations will assist the areas identified in the Petition in meeting the ozone NAAQS.

For newly violating areas, the EPA and states may pursue various options for addressing emerging air quality problems. Historically, EPA's recommended approach has been to assist state and local officials, local stakeholders and tribes to develop collaborative strategies to bring newly-violating areas back into attainment as soon as possible. The EPA Regional Offices address the emerging air quality problems as part of the annual grant negotiations with their states. The annual EPA grant guidance includes a performance measure to have the EPA Regional Office and the respective state target grant funds to specific actions to bring newly violating designated attainment areas into compliance with the respective NAAQS. (*See Performance Measure OAQPS N30 in OAR National Program Guidance Fiscal Year 2014 - <http://www2.epa.gov/planandbudget/national-program-manager-guidances#fy2014>.)* The grant agreements have included enforceable and voluntary agreements, such as the EPA's Ozone Advance Program,<sup>4</sup> to reduce emissions. Nineteen of the 57 areas listed in the Sierra Club Petition have chosen to participate in Ozone Advance, a voluntary program that encourages emissions reductions in ozone attainment areas by providing EPA assistance to help these areas continue to meet the ozone NAAQS. While the program itself does not establish any regulatory requirements, it provides a framework for local action and for closer collaboration with the EPA. The EPA provides technical advice and other support including identifying available tools and resources that may be used to put plans in place to keep ozone levels under control.

For the reasons explained above, the EPA is choosing not to exercise its discretion to initiate the redesignation process for the areas identified in the Sierra Club Petition. Furthermore, because the EPA is denying the Petition and is not initiating the process to redesignate any of the 57 areas identified in the

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<sup>4</sup> See Ozone Advance Program website at <http://www.epa.gov/ozonemadadvance/>.

Petition, the issue of appropriate nonattainment area boundaries is not triggered. However, the EPA notes that, even if the EPA were to grant the Petition to initiate the redesignation process for one or more areas, we would not grant the request to establish specific boundaries for designated nonattainment areas. Section 107(d)(3)(A-C) of the CAA establishes the process for redesignating areas to nonattainment, which is an interactive process between states and the EPA. It is only upon completion of that process resulting in a redesignation of an area to nonattainment that the final boundaries of the nonattainment area would be established.