August 14, 2013

VIA EMAIL AND U.S. MAIL

Governor Martin O’Malley
100 State Circle
Annapolis, MD 21401-1925

RE: Please Ensure That the Maryland Department of the Environment Protects the Health of Maryland Residents from Coal Plant Air Pollution

Dear Governor O’Malley:

On behalf of the Sierra Club, Chesapeake Climate Action Network, and the Chesapeake Chapter of the Physicians for Social Responsibility, we thank you for the steps that your Administration is taking to address greenhouse gas emissions in the State. Your commitment to forge ahead with the development of renewable energy, including offshore wind, will provide wide-ranging benefits to the State’s environment and economy well beyond its direct climate impacts. At the same time, however, despite the strides that the State is making to curtail its carbon pollution and despite the important initial advances that Maryland made to reduce emissions of other air contaminants under the Healthy Air Act, Maryland continues to suffer from some of the worst air quality in the East. To date, the Maryland Department of the Environment (MDE) has not taken the necessary steps to address the contribution of in-state sources—and particularly the State’s coal plants—to Maryland’s air quality problems. We therefore urge you to ensure that MDE acts expeditiously to curtail the State’s emissions of sulfur dioxide and nitrogen oxides, as required by law, in order to protect the public health and Maryland’s environment.

Maryland remains home to some of the most poorly controlled coal-fired power plants for sulfur dioxide (SO₂) in the region. Indeed, Maryland has two of the only coal plants in the Mid-Atlantic that operate without any post-combustion emission controls for SO₂ and without a commitment to retire or clean up. Moreover, these plants are located in densely populated areas and operate under permits which, as multiple sets of air quality modeling analyses (including modeling by the State’s own Power Plant Research Project) have confirmed, are insufficiently stringent to protect the public health. EPA itself has informed MDE that the Department must act to address the modeled SO₂ air quality violations for these plants. However, the Department to date has delayed taking decisive action.
Of equal concern, Maryland routinely records some of the highest levels of ozone in the East. Yet more than half of the coal units in Maryland lack selective catalytic reduction (SCR), a cost-effective control technology for nitrogen oxides (NO\textsubscript{x}) capable of dramatically reducing emissions of this significant ozone precursor. Pollution from upwind states blowing into Maryland is also a major contributor to Maryland’s ozone problems, and as a result MDE has been pressing for upwind states to set coal plant emission limits based upon the installation and use of SCR. But MDE’s leverage to extract emission reductions from upwind states is weakened to the extent MDE has not required the same levels of controls on Maryland’s own coal plants. This is especially true given that Maryland is itself an upwind state and its NO\textsubscript{x} pollution has been demonstrated to cause ozone and particulate matter attainment issues in other downwind states.

The undersigned groups have spent considerable time over the past year urging MDE to do exactly what the Department privately acknowledges that it must do: Establish legally enforceable health-protective SO\textsubscript{2} and NO\textsubscript{x} emission limits for the state’s six remaining coal plants.\textsuperscript{1} To date, however, the Department has not committed itself to a timetable or to a workable process to address the serious human health threats from these plants. We remain deeply concerned that MDE will not take the necessary steps to remedy these air pollution problems without additional prompting and direction from your office.

We therefore urge you to ensure that MDE uses the legal tools readily available to it to protect the health of Marylanders from coal plant air pollution. A description of these tools, as well as additional information regarding the health threats posed by SO\textsubscript{2} and NO\textsubscript{x}, is provided in the Appendix to this letter. We look forward to meeting with you and working with your office to ensure that Maryland continues to lead on protecting human health and the environment.

Thank you for your consideration.

Respectfully submitted,

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\textsuperscript{1} The groups sent letters to MDE regarding sulfur dioxide compliance for Maryland coal plants on June 29, 2012, October 15, 2012, November 1, 2012, January 18, 2013, and June 6, 2013, met with Secretary Summers or Air Director Tad Aburn on multiple occasions, and had numerous in-depth conversations regarding these issues with Deputy Secretary Kathy Kinsey. The groups also submitted comments to MDE regarding ozone compliance issues in the Baltimore and metro DC areas on April 19, 2013 and July 19, 2013 and had meetings and conversations with the Department regarding power plant ozone and NO\textsubscript{x} compliance issues.
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cc (via email):
Abigail Hopper, Director, Maryland Energy Administration
Robert M. Summers, Secretary of the Environment
George S. (Tad) Aburn, Director, Air & Radiation Mgmt. Administration, MDE
Kathy Kinsey, Deputy Secretary for Operations & Regulatory Programs, MDE
Douglas Gansler, Maryland Attorney General
Erin Fitzsimmons, Special Assistant for the Environment, OAG
Mary Raivel, Assistant Attorney General
I. Health and Environmental Impacts of Sulfur Dioxide and Nitrogen Oxides

Exposure to sulfur dioxide (SO₂) even in very short time periods—as short as five minutes—has been shown to cause significant adverse human health effects. SO₂ causes decrements in lung function, aggravation of asthma, and respiratory morbidity. Short-term SO₂ exposure is especially risky for children, the elderly, and asthmatics. And EPA has determined that SO₂ exposure can aggravate existing heart disease, leading to increased hospitalizations and premature deaths.

In addition, sulfur dioxide (along with nitrogen oxides) is one of the primary causes of acid rain. Acid rain results in serious adverse impacts to both aquatic and terrestrial ecosystems, increasing the acidity of water and soils, which can decrease the survival of certain fish and aquatic life. Increases in soil acidity can also impair the ability of some types of trees to grow and resist disease, and cause aluminum to be released and to flow into water bodies where it is directly toxic to aquatic organisms.

Nitrogen oxides are likewise responsible for a host of adverse environmental and human health impacts, as well as contributing to the formation of several other harmful air contaminants. Ground-level ozone, for example, is formed when NOₓ and volatile organic compounds (VOCs) interact in the presence of sunlight. Ozone’s effects on the human respiratory system include inducing asthma attacks in asthmatics and aggravating chronic lung diseases like emphysema and bronchitis. Long-term exposure to ozone may result in the permanent scarring of lung tissue. Exposure to ozone can also lead to “chronic, adverse effects on lung development in children from the age of 10 to 18 years . . . .” However, the greatest harm “may occur later in life, since reduced lung function is a strong risk factor for complications and death during adulthood.”

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4 Id.
7 EPA, Effects of Acid Rain – Forests, http://www.epa.gov/acidrain/effects/forests.html; see also EPA, Effects of Acid Rain – Surface Waters and Aquatic Animals.
11 Id. at 1063.
Nitrogen oxides also react in the atmosphere to form fine particulate matter (PM$_{2.5}$). Fine particulate matter is responsible for numerous health and environmental problems. Due to its small size, fine particulate matter penetrates deep into the lungs and can decrease lung function, cause heart attacks, aggravate asthma, and lead to premature death in people with heart or lung disease. Children and the elderly are most likely to be adversely affected by exposure to fine particulates, but even healthy adults can experience symptoms from exposure to elevated levels of PM$_{2.5}$. Fine particulate matter is additionally a major contributor to haze, impairing visibility throughout the country.

Finally, nitrogen oxides cause significant direct damage to the environment. In Maryland, excess nitrogen and chemical contaminants from atmospheric deposition impact the Chesapeake Bay and its watershed. Too much nitrogen entering the Chesapeake Bay leads to eutrophication, a process that causes accelerated growth of algae. Excessive algae in the Bay can block sunlight needed for submerged aquatic vegetation to grow. When the algae die, they sink to the bottom of the Bay and decompose in a process that depletes the oxygen in the water. The Chesapeake Bay Program estimated that approximately one-third of the nitrogen that reaches the Chesapeake Bay comes from air deposition. Of that one-third, approximately 60% is attributable to NO$_x$. And, as noted above, nitrogen oxides are one of the key air pollutants causing acid deposition with its myriad adverse environmental impacts.

Given the deleterious environmental and human health impacts from SO$_2$ and NO$_x$ and from the associated ozone and fine particulate matter pollution, it is incumbent upon the State to take appropriate steps to protect its citizens and ensure that EPA’s health protective air quality standards for these pollutants are not violated.

II. MDE Has Both the Legal Authority and Legal Duty to Regulate Sulfur Dioxide and Ozone Precursors from Coal Plants to Protect Maryland Residents

A. Sulfur Dioxide

MDE is required to regulate SO$_2$ emissions from the State’s coal plants in conjunction with implementing EPA’s current ambient air quality standard for SO$_2$. Specifically, MDE must include enforceable modeling-informed emission limits in its forthcoming infrastructure state implementation plan for SO$_2$.

In order to address the significant health threats from sulfur dioxide, on June 3, 2010, EPA issued a new SO$_2$ national ambient air quality standard (NAAQS), recognizing that the prior 24-hour and annual SO$_2$ standards did not adequately protect the public against adverse respiratory effects associated with short term SO$_2$ exposure. Due to both the shorter averaging

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13 Id.
14 See id.
16 Id.
17 The new 2010 SO$_2$ NAAQS standard is a 1-hour standard set at 75 ppb, or approximately 196 micrograms per cubic meter. 40 C.F.R. § 50.17(a).
time and the numerical difference, the new 1-hour SO\textsubscript{2} NAAQS is far more protective of human health than the prior SO\textsubscript{2} NAAQS and promises huge health benefits. EPA has estimated that 2,300-5,900 premature deaths and 54,000 asthma attacks a year will be prevented by the new standard.

In promulgating the final 2010 standard, EPA made clear that air dispersion modeling was the best and most appropriate way to evaluate compliance with the NAAQS for medium and large sources, such as coal plants.\(^\text{19}\) The final rule described dispersion modeling as “the most technically appropriate, efficient, and readily available method for assessing short-term ambient SO\textsubscript{2} concentrations in areas with large point sources.”\(^\text{20}\) The preference for modeling to evaluate source-specific SO\textsubscript{2} impacts and to establish SO\textsubscript{2} limits has a robust history in the Agency.\(^\text{21}\) and use of modeling for this purpose has been repeatedly upheld by the courts.\(^\text{22}\) Indeed, just last month, the Third Circuit upheld EPA’s imposition of stringent SO\textsubscript{2} limits on the Portland Generating Station in Pennsylvania that were based upon the results of air dispersion modeling conducted by New Jersey and the Agency.\(^\text{23}\)

MDE is required to include modeling-informed enforceable SO\textsubscript{2} emission limits for Maryland’s coal plants sufficient to ensure maintenance of the new NAAQS in its forthcoming SO\textsubscript{2} infrastructure state implementation plan (ISIP). Under the Clean Air Act, within three years of promulgation of a new NAAQS, states must adopt and submit plans to the EPA that provide for the “implementation, maintenance, and enforcement” of the NAAQS within their borders.\(^\text{24}\) These plans are known as Infrastructure SIPs or ISIPs. Because EPA promulgated its NAAQS for SO\textsubscript{2} in 2010, ISIPs from states are due this year. The Act requires that ISIPs be adequate to prevent violations of the NAAQS. Specifically, under Section 110(a)(2)(A) of the Act, a state’s ISIP must “include enforceable emission limitations . . . as well as schedules and timetables for

\(^{18}\) EPA, Final Regulatory Impact Analysis (RIA) for the SO\textsubscript{2} National Ambient Air Quality Standards (NAAQS), at 5-35, tbl. 5.14 (June 2010).

\(^{19}\) SO\textsubscript{2} Final Rule, 75 Fed. Reg. at 35,570 (noting that “it is more appropriate and efficient to principally use modeling to assess compliance for medium to larger sources”).

\(^{20}\) Id. at 35,551.

\(^{21}\) See, e.g., Declaration of John C. Vimont, Region 9 Regional Meteorologist, Cal. ex rel. Van de Kamp v. Santa Marta Chili, Inc., Case No. SM 64010, at 11 (Cal. Super.) (Nov. 30, 1990) (explaining that ambient measurements cannot be relied upon when setting emission limits or determining ambient impacts from an industrial source and that these determinations should instead “be based on an appropriate modeling analysis”); Declaration of Roger W. Brode, Physical Scientist, EPA Air Quality Modeling Group, Nat’l Envtl. Dev. Ass’n Clean Air Project v. EPA, Case No. 10-1252, at 3-4 (D.C. Cir.) (Jan. 18, 2011) (explaining that “the performance of the AERMOD model was extensively evaluated based on a total of 17 field study data bases” and that “adoption of the AERMOD model has significantly reduced the potential for overestimation of ambient impacts from elevated sources in complex terrain compared to other models”); see also generally SO\textsubscript{2} Final Rule at 35,551 (noting that “[h]istorically, we have favored dispersion modeling to support SO\textsubscript{2} NAAQS compliance determinations for areas with sources that have the potential to cause an SO\textsubscript{2} NAAQS violation” and citing numerous examples).

\(^{22}\) See, e.g., Mont. Sulphur & Chem. Co. v. EPA, 666 F.3d 1174, 1184-85 (9th Cir. 2012) (upholding EPA’s reliance on modeling of SO\textsubscript{2} compliance in the Billings/Laurel, Montana area as basis for EPA’s SIP call, SIP disapproval, and FIP promulgation); Sierra Club v. Costle, 657 F.2d 298, 332 (D.C. Cir. 1981) (“Realistically, computer modeling is a useful and often essential tool for performing the Herculean labors Congress imposed on EPA in the Clean Air Act.”); Republic Steel Corp. v. Costle, 621 F.2d 797, 805-06 (6th Cir. 1980) (approving use of modeling to predict future violations and incorporating “worst-case” assumptions regarding weather and full-capacity operations of pollutant sources).

\(^{23}\) See GenOn REMA, LLC v. EPA, Case No. 12-1222, slip op. at 11 (3d Cir. July 12, 2013).

\(^{24}\) 42 U.S.C. § 7410(a)(1).
compliance, as may be necessary or appropriate to meet the applicable requirements” of the Clean Air Act, including the requirement to maintain compliance with the NAAQS. EPA regulations also reaffirm the need for enforceable emission limits in ISIPs, requiring that the SIP “must demonstrate that the measures, rules, and regulations contained in it are adequate to provide for the timely attainment and maintenance of the national standard that it implements.” Consequently, applicable legal authority indicates that MDE must expeditiously promulgate an ISIP with enforceable modeling-informed emission limits sufficient to protect citizens’ health by ensuring that Maryland’s coal plants do not cause violations of the applicable SO\textsubscript{2} air quality standard.

**B. Ozone Precursors**

MDE must likewise impose more stringent limits on in-state sources of ozone precursors to bring the Baltimore and metro Washington areas into compliance with EPA’s 1997 and 2008 ozone standards.

To address the serious health threats from ozone, in 1997 EPA established the first national ambient air quality standard for ground-level ozone. Based on subsequent clinical studies showing respiratory effects at levels below the 1997 standard, EPA revised the NAAQS downward in 2008 “to provide increased protection for children and other ‘at risk’ populations against an array of [ozone]-related adverse health effects . . .” EPA estimates that the 2008 8-hour ozone NAAQS has the potential to avoid 260-2,000 premature deaths annually as of 2020. The total benefits in ozone reduction from this standard are estimated to save $3 to $17 billion per year. In fact, 2011 and 2012 ozone ambient monitoring data indicate that these estimates of the health benefits of reducing ozone exposure by EPA may have been low.

Despite improvements in air quality over the past decade, neither the Baltimore nor the metro Washington areas achieved compliance with either the 1997 or with the more stringent

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25 Id. § 7410(a)(2)(A) (emphasis added). As defined by the Act, the term “emission limitation” means “a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter.” Id. § 7602(k).

26 See 40 C.F.R. § 51.112(a). Section 51.112(a)(1) further specifies that “[t]he adequacy of a control strategy shall be demonstrated by means of applicable air quality models, data bases, and other requirements specified in appendix W of this part (Guideline on Air Quality Models).” Id. (emphasis added). Consequently, 40 C.F.R. § 51.112(a)(1) supports the use of sulfur dioxide air dispersion modeling to evaluate the adequacy of sulfur dioxide ISIPs for maintaining the 1-hour sulfur dioxide NAAQS.


30 Id.

31 In 2012, much of the country experienced record high temperatures and very high ozone levels. Thus, the benefit analysis done in 2008, which did not consider levels that we would experience in the year before the first compliance year for marginal 2008 ozone NAAQS nonattainment areas, that is 2012, likely underestimated the amount of ozone reductions the 2008 ozone NAAQS will require, and thus the benefit it will provide.
2008 ozone NAAQS. Consequently, MDE is required to develop nonattainment SIPs (NSIPs) for each of these areas that include restrictions on local sources of ozone precursors sufficient to bring the areas into attainment of both the 1997 and 2008 NAAQS. By statute, an NSIP must, among other things, “provide for the implementation of all reasonably available control measures as expeditiously as practicable.” These measures must, “at a minimum,” include the imposition of reasonably available control technology or RACT for major stationary sources of VOCs and NOx. The sources subject to RACT, and from which MDE must look for additional emission reductions, including the area’s large coal plants.

III. MDE Has Not Publicly Committed to a Workable Plan and Time Frame for Taking the Actions Necessary to Resolve the Human Health Threat from Maryland’s Coal Plants

Maryland’s coal plants are operating under permits that allow the plants to cause exceedances of EPA’s health protective air quality standard for SO2 and are contributing to Maryland’s failing air quality for ozone. Nevertheless, MDE to date has not taken the steps necessary to protect human health and the environment by remedying these serious air quality problems.

A. MDE Has Yet to Act to Address the Serious Modeled SO2 Air Quality Violations Caused by Maryland’s Coal Plants

EPA has repeatedly explained that the most efficient and effective means of determining compliance with the 2010 SO2 NAAQS is through air dispersion modeling. MDE is in possession of multiple sets of air dispersion modeling results—including modeling from the State’s own Power Plant Research Project—showing that the emission limits on its coal plants allow pollution at levels that would cause massive exceedances of the health based standard reflected in the 2010 NAAQS. Moreover, more refined “time series” modeling conducted by Wingra Engineering demonstrates that the three Baltimore plants, as they are currently operating, are and have been actually causing unsafe levels of sulfur dioxide in the Baltimore area. The validity of these time series modeling results is corroborated by actual data from the lone air quality monitor in the greater Baltimore area.

In 2011, Maryland’s Power Plant Research Project (“PPRP”) retained a consultant to conduct modeling of 1-hour SO2 NAAQS compliance in the context of air permitting for the Energy Answers’ proposed waste-to-energy facility in Baltimore. The modeling considered emissions not only from the proposed Energy Answers facility, but also from the other large sources of SO2 in the Baltimore area: the area’s coal plants. PPRP’s consultant identified exceedances of up to 9 times the health-protective 1-hour SO2 standard and determined that these

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32 The Baltimore nonattainment area is composed of Baltimore, Carroll, Harford and Howard Counties as well as the City of Baltimore, and is home to three of Maryland’s six coal plants: C.P. Crane, H.A. Wagner and Brandon Shores. The metro Washington nonattainment area includes Calvert, Charles, Frederick, Montgomery and Prince George’s Counties in Maryland and is home to the other three Maryland coal plants: Chalk Point, Dickerson and Morgantown.

33 42 U.S.C. § 7502(c)(1) (emphasis added).

34 See id. § 7511a(b)(2)(C) & (f)(1).
were “due mostly to Brandon Shores/Wagner.” The consultant concluded that “compliance with 1 hour SO2 NAAQS in Baltimore is problematical and is related mostly to power plants.”

The Sierra Club likewise commissioned air dispersion modeling of the sulfur dioxide emissions from all six of Maryland’s coal plants. This modeling has confirmed the inadequacy of the present emission limitations for each of the plants, showing significant exceedances of the health-protective air quality standards large areas when the plants operate at allowable levels. The Sierra Club has provided copies of these modeling results to MDE, and has discussed the modeling results for several of the plants on multiple occasions with members of the Department.

In addition to modeling the impacts of the plants when they operate at their allowable limits, the Sierra Club retained experts to evaluate the real time impacts of Crane, Wagner, and Brandon Shores on Baltimore residents and to determine whether the existing Health Air Act standards were sufficient to preserve air quality in Baltimore. The former “time series” analysis, which pairs actual hourly emissions data from the plant with contemporaneous meteorological conditions, showed that the three plants analyzed, both individually and collectively, were causing unsafe concentrations of air pollution in the Baltimore area. The accuracy of this time series modeling is strongly corroborated by the air quality monitoring data recorded at the Essex monitor, where predicted impacts for the years 2006-2010 were within 18% of the actual observed results and within 12% of the observed value for the years 2007-2011. Consistent with these results, the latter analysis of the sufficiency of the Health Air Act limits determined that it “is highly probable” that, despite the plants’ compliance with the aggregate annual SO2 tonnage limits of the HAA, “there have been and will be violations of the 1-hour SO2 NAAQS” due to emissions from the plants.

Despite the large and growing body of evidence before MDE demonstrating the inadequacy of the air permits for the coal plants in Maryland and highlighting the actual adverse air quality impacts from the Baltimore-area plants, the Department has yet to take decisive steps to address these impacts. MDE has engaged in nearly a year of discussions with the Baltimore plants’ new owner, Raven Power Holdings, regarding SO2 compliance issues at the plants. Yet the Department has not required, and Raven has not offered to take, any meaningful actions to reduce these impacts or provided a workable path to ensuring timely compliance with EPA’s health-protective air quality standards. Moreover, MDE recently sent a letter to the Sierra Club informing the Club that the Department does not intend to take any substantive action to address

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35 Email from Mark Garrison, ERM to John Sherwell, PPRP, RE: EA modeling (Apr. 5, 2012).
36 Id.
37 Predicted impacts are measure in the form of the average of 4th highest annual impacts as prescribed by EPA’s NAAQS.
38 A copy of Dr. Sahu’s report and accompanying exhibits was provided to MDE on January 18, 2013. Dr. Sahu concluded that the “combined annual limit [under the HAA] does not and cannot assure that the short-term 1-hour SO2 NAAQS will not be violated.” Id. at 1-2. Dr. Sahu’s report also confirms that lone SO2 air quality monitor in the Baltimore area, located in Essex, is not appropriately situated to detect the air quality impacts of the Baltimore coal plants, and thus provides little guidance in determining whether the plants are having unsafe impacts. Id. at 12-16. And Dr. Sahu’s analysis demonstrated that the Brandon Shores plant, which is the only facility in the Baltimore area with state-of-the-art emission controls for SO2 has been operating these controls at a lower efficiency since 2010. Id. at 9.
major SO₂ sources in its forthcoming ISIP. By contrast, other states are taking action to control the impacts from their large SO₂ sources. For example, Delaware recently informed large sources in the state that it would be lowering the emission limits for these sources in order to ensure that their impacts remained below EPA’s health protective air quality standard. And Massachusetts has required its remaining coal plants to undertake SO₂ compliance demonstrations using air quality modeling to evaluate the adequacy of their presently authorized limits. The Department of Environmental Protection in Massachusetts is now translating the results of this modeling into enforceable short-term emission limits for each of the plants. Maryland’s delay in imposing health-protective short-term emission limits jeopardizes the health of its citizens.

B. Maryland’s Coal Plants Are Contributing to the State’s Failing Air Quality for Ozone and MDE Has Not Taken the Necessary Actions to Remedy Its Ozone Problem

As explained above, the Baltimore and metro Washington areas are both failing to attain either the 1997 or the more stringent and health-protective 2008 ozone NAAQS. For the 2008 NAAQS, the Baltimore area in Maryland recorded the highest ozone levels in the East and was the only area to receive a “moderate” nonattainment designation under the newer standard. Based on this designation, MDE will be responsible for submitting to EPA a nonattainment State Implementation Plan (NSIP) that includes measures sufficient to bring the Baltimore area into attainment of the standard. This will require imposition of additional measures to ratchet down emissions of ozone precursors from major local sources. Likewise, additional control measures will be required in both the Baltimore and metro Washington areas to comply with the 1997 NAAQS. Even before submitting its June 17, 2013 “serious” NSIP for the Baltimore area, MDE candidly conceded that its proposed control measures “were not sufficient to achieve the 1997 standard . . . .” And MDE also recognized in its response to comments that “[a]dditional measures will be required to meet a new nonattainment status or to attain the tougher 2008 ozone NAAQS.” Moreover, the NSIP was released two days after Baltimore missed its June 15 deadline for meeting the 1997 ozone standard, and MDE has already explained that it will be required to develop a “severe” NSIP based on the area’s failure to timely achieve the 1997 standard.

39 Ltr. from Robert M. Summers, Secretary, MDE to Zachary M. Fabish, Staff Attorney, Sierra Club (June 6, 2013) (“The Department will take your comments into consideration in developing the SIP, however, the issues you raise and the information to which you refer are more applicable to an attainment demonstration SIP, which is prepared after nonattainment designations are made.”).
41 Pursuant to EPA’s February 1, 2012 finding that the Baltimore area had failed to attain the 1997 ozone standard by the required attainment date, EPA established a due date of September 30, 2012 for Maryland to submit a “serious” NSIP to EPA. See 77 Fed. Reg. 4901, 4901 (Feb. 1, 2012). The actual NSIP was submitted more than eight months after that date.
42 Aburn Decl. ¶ 5. Although MDE attributes this to the warm ozone season weather in 2012, 2012 was by no means an outlier for NAAQS exceedances for the Baltimore nonattainment area of the 2008 standard. In 2011, there were 74 exceedances of the 2008 NAAQS in the Baltimore nonattainment area. In 2010, there were 76 exceedances. See EPA AirData Database, Baltimore-Towson, MD, 8-hour ozone standard (0.075 ppm), available at http://www.epa.gov/airdata/ad_rep_mon.html.
43 MDE July 22, 2013 Resp. to Cmts.
At the same time, MDE has recently acknowledged that the metro Washington nonattainment area is also failing to attain the 1997 ozone NAAQS. In a June 12, 2013 letter to EPA, MDE observed that it would be “premature” for EPA to approve attainment demonstrations when no viable strategy to address interstate transport of ozone is in place.\(^3\) and urged EPA to “reconsider approval of the attainment demonstration” for the metro Washington area.\(^4\) If EPA agrees with MDE’s comments, which were consistent with the comments submitted by the Sierra Club, MDE will be required to promulgate a new NSIP for the metro Washington area for the 1997 ozone standard as well. This will require MDE to achieve further NO\(_x\) reductions from local sources.

Maryland’s coal plants, as the largest stationary sources of NO\(_x\) in the Baltimore and metro Washington nonattainment areas, play an important role in contributing to local air quality problems and to ozone and particulate matter pollution in downwind states.\(^5\) Because seven of the thirteen coal units in the State lack SCR—the state-of-the-art emission control technology for NO\(_x\)—there are significant additional emission reductions available to MDE should it choose to require them. The ozone season NO\(_x\) emission rates from these units are 7 to 10 times higher than those demonstrated to be achievable by the SCR-equipped Morgantown plant.\(^6\) Requiring Maryland’s coal plants to achieve emission rates readily attainable using SCR\(^7\) could reduce ozone season NO\(_x\) emissions from these plants by 60% or more than 3,200 tons/year. Maryland not only has the opportunity to take advantage of these additional cost-effective reductions when issuing its forthcoming NSIPs, it has a twofold obligation to do so. First, MDE has called upon upwind states to limit their coal plant NO\(_x\) emissions based upon installation and use of SCR to minimize their contribution to Maryland’s ozone nonattainment. Second, EPA has shown that Maryland’s air emissions significantly contribute to downwind states’ ability to achieve compliance with the 1997 ozone air quality standards as well as the 1997 and 2006 fine particulate air quality standards.\(^8\) Consequently, if MDE wants to persuasively exhort upwind states to curtail their NO\(_x\) emissions, MDE must ensure that Maryland acts in kind and requires SCR on its own in-state coal units.

\(^{44}\) Ltr. from George S. (Tad) Aburn, Director, Air and Radiation Management Administration, MDE to Cristina Fernandez, Associate Director, Office of Air Planning Program, EPA Region III (June 12, 2013), at 2.

\(^{45}\) Id. at 3.

\(^{46}\) Mobile vehicular sources, because they emit NO\(_x\) and VOCs much closer to ground level, also play a very important role in local ground-level ozone formation and should be separately addressed. The process of achieving reductions from these sources (e.g., by reducing vehicle miles traveled through increased use of public transportation and more walkable communities) presents different challenges than reducing emissions from large stationary sources and is beyond the scope of this letter.

\(^{47}\) Based on 2012 ozone seasons emissions as reported to EPA and available from EPA’s Air Markets Program Data, available at epa.gov/camddataandmaps/.

\(^{48}\) For purposes of this calculation, it was assumed that MDE limits ozone season NO\(_x\) emissions to 0.07 lb/MMBtu. As the Morgantown plant’s 2012 ozone season emission rate of 0.03 lb/MMBtu demonstrates, significantly lower rates than 0.07 lb/MMBtu are capable of be achieved using SCR.

\(^{49}\) Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals; Final Rule, 76 Fed. Reg. 48,207, 48,213, Table III-1 (Aug. 8, 2011). For example, EPA found that Maryland contributes 0.15 \(\mu g/m^2\) to annual \(PM_{2.5}\) nonattainment in Pennsylvania. Id. at 48,240-41, Tables 5.D-1 & 5.D-2. And Maryland makes even larger contributions to 24-hour \(PM_{2.5}\) NAAQS nonattainment in both Ohio and Pennsylvania. See id. at 48,242-43, Tables 5.D-4 & 5.D-5. Maryland also contributes to maintenance of the 1997 ozone NAAQS in Connecticut. Id. at 48,245-46, Tables 5.D-7 & 5.D-9.
IV. We Urge You to Ensure that MDE Protects the Health of Marylanders by Expeditiously Requiring Health-Protective \(\text{SO}_2\) and \(\text{NO}_x\) Standards for Maryland’s Coal Plants

MDE has a duty in its forthcoming ISIP to include enforceable emission limits for Maryland’s coal plants sufficient to ensure that these plants do not cause or contribute to exceedances of EPA’s health-protective air quality standard for \(\text{SO}_2\). Indeed, EPA has specifically called upon MDE to address the modeled \(\text{SO}_2\) violations from several of the Maryland coal plants. The \(\text{SO}_2\) ISIP is the necessary and appropriate place to comply with EPA’s injunction to “take action” to protect Marylanders from the emissions from these plants. We therefore urge you to protect Maryland residents by ensuring that MDE takes meaningful action to limit \(\text{SO}_2\) emissions from Maryland’s coal plants. Absent a clear directive to act, the undersigned groups remain concerned that the Department will continue to allow Maryland’s coal plants to endanger the health of its citizens.

In addition, because neither the Baltimore nor the metro Washington nonattainment area is currently meeting EPA’s 1997 ozone standard and, consequently, both areas are also failing to meet EPA’s more stringent 2008 ozone standard, Maryland will shortly be tasked with developing NSIPs for both nonattainment areas to bring these areas into attainment. In each of these NSIPs, MDE should require emission reductions from in-state coal plants consistent with the limits it is requesting for coal plants in upwind states. Although MDE recently stated in response to a comment from Sierra Club that it is considering a “possible . . . tightening of the Maryland Health Air Act as a means of providing for further \(\text{NO}_x\) reductions from the power sector in Maryland,” MDE has not formally committed to imposing further restrictions on coal plants or requiring installation of SCR. We urge you to ensure that that MDE meets all deadlines for developing the NSIPs for the Baltimore and metro Washington areas and includes in these NSIPs enforceable requirements that each coal unit in the State be controlled at least to the level that Maryland has requested of upwind states.

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50 On September 14, 2012, U.S EPA Region III sent a letter to MDE stating that “MDE must . . . take action to address [the Power Plant Research Project’s] modeled violations” for the Baltimore-area plants.
51 MDE July 22, 2013 Resp. to Cmts.