June 21, 2022

The Honorable Michael Regan, Administrator
U.S. Environmental Protection Agency
William J. Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Sent via Regulations.gov

Re: Comments on Federal Implementation Plan Addressing Regional Ozone Transport for the 2015 Ozone National Ambient Air Quality Standard[1] (Docket ID No. EPA–HQ–OAR–2021–0668)

Dear Administrator Regan:

Thank you for this opportunity to comment on EPA's proposed Federal Implementation Plan Addressing Regional Ozone Transport for the 2015 Ozone National Ambient Air Quality Standard (Docket ID No. EPA–HQ– OAR–2021–0668).[2]

The undersigned health organizations are dedicated to protecting the populations we serve from the health harms of ozone pollution and its precursor pollutants. Ozone is a powerful lung irritant. When inhaled, it causes inflammation and other damage that can impact multiple body systems. Ozone exposure can also shorten lives. Short-term exposure causes breathing problems such as chest tightness, coughing, shortness of breath and worsened symptoms for people with asthma and COPD.[3] Long-term exposure may cause lasting harm to respiratory health. Ozone exposure also increases the risk of metabolic disorders like diabetes;[4] harm to the central nervous system;[5,6] reproductive and developmental harm, including preterm birth and

[1] CAA Sec 110(a)(2)(D)(i)(I), "good neighbor provision" or the "interstate transport provision;
[2] ENVIRONMENTAL PROTECTION AGENCY - 40 CFR Parts 52, 75, 78 and 97; [EPA–HQ–OAR–2021–0668; FRL 8670–01– OAR]; RIN 2060–AV51. Federal Implementation Plan Addressing Regional Ozone Transport for the 2015 Ozone National Ambient Air Quality Standard.
[3] U.S. EPA. (2020, Apr). Integrated Science Assessment for Ozone and Related Photochemical Oxidants. EPA/600/R-20/012. Section 3.1.4.1.
[4] U.S. EPA. (2020, Apr). ISA. Section 3.2.4.6.
[5] U.S. EPA. (2020, Apr). ISA. Section 5.1.3.
[6] U.S. EPA. (2020, Apr). ISA. Sections 7.2.1 and 7.2.2.

stillbirth;[7],[8] possible cardiovascular effects;[9] and premature death.[10] Nitrogen oxides (NOx) are a powerful air pollutant on their own, as well as being a precursor to ozone and numerous other pollutants, all of which have additive detrimental impacts on human health and environment.

We strongly support measures to require the cleanup of polluting sources, and urge EPA to strengthen and then finalize this rule into law without delay. We offer some general comments in the first section followed by more specific comments in the second section.

I. General Comments:

1. We support this ozone transport proposal to reduce NOx) emissions from specific fossil fuel-fired power plants in 25 states and specific large industries in 23 states, which contribute to the nonattainment of the 2015 ozone standard in several downwind states.
2. The proposal is long overdue, the culmination of both the states and EPA not following their respective statutory obligations under the Clean Air Act (CAA)[11] – submitting/acting on State Implementation Plans (SIPs) and proposing FIPs. Setting NAAQS for pollutants becomes meaningless if states are not implementing them and EPA is not enforcing them. Public health in nonattainment areas is yet to benefit from the stronger health-based ozone standards promulgated seven years ago.
3. We strongly urge EPA to extend NOx emissions control requirements to all combustion-driven electricity generating units (EGUs) and all major industry sources in both upwind and downwind areas to reduce both transported and localized NOx and ozone pollution. Doing so is essential in meeting EPA's Objective 4.1 to Improve Air Quality and Reduce Localized Pollution and Health Impacts in its Strategic Plan[12]. For regulatory purposes, ozone season is considered May 1 -September 30, but in some southern and western states of the country, this season extends to all 12 months of the year (See Figure 1A below). Localized NOx and ozone pollution in these areas impacts local fenceline communities. Some of these states are among the poorest in the nation (See Figure 1B below). Addressing the public health concerns in these areas is one of the goals identified by the Agency in its Strategic Plan.[3]

[7] Gao Q, Zang E, Bi J, Dubrow R, Lowe SR, Chen H, Zeng Y, Shi L, Chen K. Long-term ozone exposure and cognitive impairment among Chinese older adults: A cohort study. J Env Int. 2022; 160:107072.
[8] U.S. EPA. (2020, Apr). ISA. Section 7.1.3.
[9] Mendola P, Ha S, Pollack AZ, Zhu Y, Seeni I, Kim SS, Sherman S, & Liu D. (2017). Chronic and acute ozone exposure in the week prior to delivery is associated with risk of stillbirth. Int J Environ Res Pub Health. 14:731.
[10] U.S. EPA. (2020, Apr). ISA. Sections 4.1 and 4.2.
[11] U.S. Environmental Protection Agency Office Of Inspector General (2021, June 14). EPA Has Reduced Its Backlog of State Implementation Plans Submitted Prior to 2013 but Continues to Face Challenges in Taking Timely Final Actions on Submitted Plans. *Report No. 21-E-0163.* States' SIP Submittals to EPA Are Frequently Late; EPA Has Taken Steps to Address Its SIP Backlog Through Process Changes and Improvements; Delays in EPA SIP Actions May Impact States' Ability to Achieve Air Quality Standards and Prolong Periods of Regulatory Uncertainty
[12] FY 2022-2026 EPA Strategic Plan Overview: The Plan renews commitment to EPA's four principles— follow the science, follow the law, be transparent, and advance justice and equity; Goal 4: Ensure Clean and Healthy Air for All Communities - Obj 4.1: Improve Air Quality and Reduce Localized Pollution and Health Impacts; Goal 4: Air; Obj 4.1: Reduce ozone season emissions of nitrogen oxides from electric power generation sources by 21% from the 2019 baseline of 390,354 tons. Improve measured air quality in counties not meeting the current National Ambient Air Quality Standards from the 2016 baseline by 10%; Strive to ensure all people with low socio-economic status live in areas where the air quality meets the current fine particle pollution National Ambient Air Quality Standards.

Figure 1. Length of annual ozone season in states across the US[13] (panel A); 10 poorest states in the US (panel B)[14]; upwind states that are contributing above 1% of the 2015 ozone NAAQS and monitors affected in the downwind states (panel C)[15]

4. Regarding the timelines for implementing the controls, EPA must move up the compliance requirements in the final rule. EPA expects the "emissions reductions in the selected control stringency would be achieved as soon as they are available, some of which are scheduled to occur by the 2023 ozone season and prior to the August 3, 2024, attainment date for areas classified as Moderate nonattainment for the 2015 ozone NAAQS, and the rest of which occur as soon as possible thereafter through the 2026 ozone season, prior to the August 3, 2027, attainment date for areas classified as Serious nonattainment for the 2015 ozone NAAQS." The agency, however, fails to note that these proposed controls are already too late for several Marginal nonattainment areas, which are among the 36 EPA-identified nonattainment and maintenance problem areas.[16] These areas failed to attain the standard by the August 2021 deadline and EPA just proposed reclassifying them to the Moderate nonattainment classification.[17] The public health benefits of the 2015 ozone standard are yet to be realized in these areas. More information on the need for tighter timeframes for compliance with this rule can be found below in our specific comments.
5. This regulation to meet the 2015 ozone standard is being proposed at a time when the CASAC ozone panel is reviewing the standard. Potential revision of the current 70 parts per billion (ppb), which the Lung Association has repeatedly asked to be lowered to no higher than 60 ppb as warranted by science, could bump up new areas into nonattainment or into different classification of nonattainment. EPA should seize this opportunity to make the controls as stringent as technologically feasible to maximize the public health benefits, especially given the time-intensive steps from promulgation to implementation.
6. We appreciate that EPA is finally addressing the allowances trading framework. Inadequate caps and review of banked allowances and the continued decline of their prices has meant that it has been cheaper and easier for a facility operator to buy emission allowances than to start running controls, resulting in continued high levels of ozone pollution in many areas.

[13] https://www.climatecentral.org/gallery/maps/ozone-season-lengths-across-the-country
[14] https://www.fcnl.org/updates/2021-11/top-10-poorest-states-us
[15] EPA (2022, Mar 29). Federal Implementation Plan Addressing Regional Ozone Transport for the 2015 Ozone National Ambient Air Quality Standards - Informational Webinar
[16] *Ibid* 7; metro areas of Denver, CO; Greater CT (includes coastal areas); Chicago, IL; Philadelphia, PA; Dallas, TX; Houston, TX; western shoreline of Lake Michigan in WI (including Milwaukee, Manitowoc and Door Counties;
[17] https://www.govinfo.gov/content/pkg/FR-2022-04-13/pdf/C1-2021-27887.pdf; TABLE 1—2015 OZONE NAAQS MARGINAL NONATTAINMENT AREA EVALUATION SUMMARY

II. Specific Comments:

Page 12. EPA requests comment on several topics regarding the implementation of emissions limits for non-EGU sources that are proposed in this rulemaking, including controls on emissions units and control installation timing

In 2017, the Ozone Transport Commission (OTC) published a whitepaper[18] on controlling NOx emissions from 8 major non-EGU source categories (industrial/commercial/institutional (ICI) boilers, stationary gas (combustion) turbine engines, stationary reciprocating internal combustion engines (RICE), cement kilns, glass furnaces, and natural gas pipeline compressor prime movers) which are among those covered by the proposed rule. The reasonably available control technologies (RACT) discussed in the whitepaper include both pollution prevention methods and add-on (combustion, post-combustion, and other) technologies. The paper also includes the state regulations in the ozone transport region (OTR) states that have successfully adopted these technologies. We recommend implementing the relevant technologies described in this paper to achieve the best possible emission rates and realize maximum public health benefit.

We urge EPA to require the covered industry sources to economically install, modify, or adapt these established/standard technologies and optimally operate them starting in the next (2023) ozone season, given that this is already long overdue.

Page 47. The EPA requests comment on the assumed performance or emissions rate of the technology, the representative cost, and the timing for installation.

Page 47. Additionally, the EPA requests comment on whether other EGU ozone-season NO_X Mitigation technologies should be required to eliminate significant contribution. For instance, the EGU NO_X Mitigation Strategies Proposed Rule TSD discusses certain mitigation technologies that have been applied to ''peaking'' units (small, low capacity factor gas combustion turbines often only operating during periods of peak demand)

EPA is proposing combustion add-on emissions reduction technologies for coal-fired EGUs, e.g. selective catalytic reduction (SCR) for larger units, selective non-catalytic reduction (SNCR) for smaller EGUs. These modular technologies are not only feasible but decades old[19] and have been reliably used across the world. With the high stakes of public health at issue, we urge EPA to require

a. installation and feasible adaptation of SCR controls and their optimal operation *whenever* the EGU is in operation
b. SCR controls for EGUs utilizing any combustible fuel including natural gas, since thermal NOx needs to be addressed even if fuel-bound nitrogen is not the major source of NOx emissions.[20]
c. installation and feasible adaptation of SNCR controls and their optimal operation for smaller EGUs (including peaking units - small non-CAMD EGUs of ≤25MW), *whenever* they are in operation, irrespective of their fuel source. In a whitepaper published in 2016 on high electric demand days, the OTC "revealed that peaking units can contribute over 30% of total OTR EGU NOx mass on the episode days that were analyzed, and that a NOx emissions reduction potential of over 20 tons per day could be realized if gas and oil-fired combustion turbines without installed controls were to meet 'moderate RACT' emissions levels. Where they have not already done so, states should adopt NOx RACT

[18] Ozone Transport Commission. (2017). White Paper on Control Technologies and OTC State Regulations for Nitrogen Oxides (NOx) Emissions from Eight Source Categories
[19] Mitsubishi. https://power.mhi.com/products/aqcs/lineup/flue-gas-denitration
[20] EPA. (1999, Nov). Nitrogen Oxides (NOx), Why and How They Are Controlled. EPA-456/F-99-006R.

for gas and oil-fired combustion turbines (noting however that RACT must meet technological and economic feasibility requirements)."[21]

Regarding timing requirements for the post-combustion controls on coal-fired EGUs, EPA proposes requiring the operation of existing controls by 2024 and installing (retrofitting) new controls by 2026. Additionally, EPA proposes backstop daily emissions rates of 0.14 lb/mmBtu for coal-fired steam units of ≥100 MW in covered states. "The backstop emissions rates will first apply in 2024 for coal-fired steam sources with existing SCRs, and in 2027 for those currently without SCRs."

We strongly disagree with EPA in regarding these timelines as being "as expeditiously as practicable". These timelines are unjustifiably long - the emissions controls manufacturers stated, in 2006, that complete (new) SCR installation, startup, and optimization can be accomplished within 48 weeks.[22] SNCR technology could be installed in an even shorter time, as EPA acknowledges: "SNCR installations generally have shorter project installation timeframes relative to other post-combustion controls." The optimal running of existing SCR and SNCR technology would take a fraction of the time of a new installation.

We therefore ask EPA to require optimal operation of existing SCR/SNCR technologies by the start of the 2023 ozone season, with the application of daily backstop emissions rates in this same timeframe. Installation and optimal operation of new SCR/SNCR technologies should be required no later than the start of the 2024 ozone season, accompanied by the daily backstops. There is no justification in extending these timeframes.

EPA should also work in close collaboration and consultation with local and state air agencies to expedite the permitting and RFQ process to ensure that the long-overdue health benefits from 2015 benefits are realized in the near term in communities most impacted by pollution today.

Page 62. Request for Comment on Non-EGU Control Strategies and Measures

1. **Request comment on our estimates regarding the effectiveness of low emissions combustion in controlling NO_X from RICE compared to other potential NO_X controls for these engines. We request comment on whether controls on ICI boilers and reciprocating IC engines are likely to be run all year (e.g., 8,760 hours/year) or only during the ozone season.**

Since NOx is a widespread year-round air pollutant on its own (in addition to being a precursor of the seasonal ozone) and has adverse public health impacts,[23] we strongly recommend requiring adaptation and running of optimal emissions controls on ICI boilers and reciprocating IC engines all through the year to protect public health.

2. **EPA solicits comment on the specific criteria that the EPA should apply in evaluating requests for extension of the 2026 compliance deadline for non-EGU sources.**

We urge EPA to require the installation, adaptation, and optimal running of emissions control technologies starting in the 2023 ozone season for all non-EGU sources covered in this proposed regulation. We do not foresee any scenario where a major for-profit industry (non-EGU source) would be unable to comply with emission control requirements in one year with an

[21] Ozone Transport Commission. (2016). White Paper: Examining the Air Quality Effects of Small EGUs, Behind the Meter Generators, and Peaking Units during High Electric Demand Days
[22] Institute of Clean Air Companies (2006). Typical Installation Timelines for NOx Emissions Control Technologies on Industrial Sources https://cdn.ymaws.com/www.icac.com/resource/resmgr/ICAC_NOx_Control_Installatio.pdf
[23] EPA. (1997, Aug). Nitrogen Oxides: Impacts on Public Health and the Environment. EPA 452/R-97-002.

emissions standard promulgated seven years ago. Therefore, we urge EPA to provide flexibility only for valid reasons to any covered source that fails to comply by the deadline.

Page 69. EPA requests comment on the process through which the EPA should review and act on an extension request—e.g., the appropriate deadline for submitting a request, and whether the EPA should provide an opportunity for public comment before granting or denying a request.

For operational flexibility of, or in the unforeseen (force majeure) event requiring the consideration of an extension request, EPA should allow a public hearing and solicit public input before making a final decision. The public in the location of the uncontrolled source and those who are directly impacted must be consulted before EPA makes a final decision.

Page 114. We request comment on whether emissions limits for other types of fuels should be included in a final FIP, and if so, the types of fuels and the emissions limits that boilers powered by these fuels should be required to meet. Additionally, the EPA seeks comment on whether the EPA should establish less stringent emissions rates for boilers with low utilization rates, and if so, the appropriate emissions rate(s) and corresponding boiler utilization rate(s). The EPA also seeks comment on whether a different averaging time other than the 30-day averaging time proposed for boilers would be more appropriate and requests information supporting any suggested alternative.

For both EGU and non-EGU sources of NOx emissions, we urge EPA to cover all combustible fuel types with provisions for operational adaptation and optimization for innovation and best practices, since thermal NOx is the major mechanism of NOx production and it is independent of fuel type.[24]

Page 123. We request comment on how to address the climate benefits and other categories of non-monetized benefits of the proposed rule.

We ask EPA to work with data scientists working on air pollution, climate change, and health to develop a framework to quantify climate benefits (health, economic, ecosystem benefits) associated with NOx reduction. One option would be to develop and include an approximate range of health and economic benefit in terms of $/ton for each co-pollutant controlled and that would allow for cumulative benefits to be assessed.

Climate benefits from NOx reduction arise from multiple ways. For example,

1. Reducing NOx emissions can lead to reduction of some GHGs
    i. Among the numerous oxides of nitrogen that are formed from combustion sources is nitrous oxide, which is a much more potent and long-lived greenhouse gas than CO_2.[25]
    ii. Oxides of nitrogen produce inorganic and organic particulate matter in secondary reactions.[7] These particle pollutants are known as “climate forcers” and influence the amount of solar energy (including heat) the Earth retains.[26]

Reducing NOx will help avoid health harms that compound the impacts of climate change. NOx, ozone, and particulate matter are all associated with poor respiratory health and numerous morbidities. Climate change is a health emergency, including from increased ozone production and wildfire smoke and extreme weather. For example, scientists from Delaware have shown found “a general increasing trend, weaker in the early midcentury and stronger in the late

[24] EPA. (1999, Nov). Nitrogen Oxides (NOx): Why and How They Are Controlled. EPA-456/F-99-006R.
[25] https://www.epa.gov/climate-indicators/greenhouse-gases
[26] https://www.eea.europa.eu/articles/cleaner-air-benefits-human-health#:~:text=Reducing%20air%20pollution%20helps%20tackle,including%20heat)%20the%20Earth%20retains.

midcentury, with 2 and 5 extra high ozone days per year, respectively, from 16 (days) in 2015".[27] Using the 2011 emissions dataset, EPA's own researchers have recently shown ozone to increase 1-5 ppb in the central Great Plains and Midwest by 2050 and more than 10 ppb by 2095.[28] People with chronic health conditions are often at greater risk of harm from these and other climate impacts. Reducing NOx will help remove risks that exacerbate the health impacts of climate change.

III. Conclusion:

NOx and ozone harm public health, and our organizations strongly support measures to clean up the polluting sources that contribute to unhealthy levels of these pollutants. We urge EPA to seize the opportunity presented in this rule to maximize the benefits for public health. EPA should expand this proposal to extend NOx emissions control requirements to all combustion-driven EGUs and all major industry sources in both upwind and downwind areas, and should tighten compliance timelines to quickly improve health. Finally, we urge EPA to finalize and implement proposal without delay.

Signed,

Allergy & Asthma Network

Alliance of Nurses for Healthy Environments

Asthma and Allergy Foundation of America

Climate Psychiatry Alliance

American Lung Association

National Association of Pediatric Nurse Practitioners

National League for Nursing

Physicians for Social Responsibility

[27] Archer, C. L., Brodie, J. F., & Rauscher, S. A. (2019). Global Warming Will Aggravate Ozone Pollution in the U.S. Mid-Atlantic. *Journal of Applied Meteorology and Climatology*, *58*(6).

[28] Nolte, C. G., Spero, T. L., Bowden, J. H., Sarofim, M. C., Martinich, J., & Mallard, M.S. (2021, Oct). Regional temperature-ozone relationships across the U.S. under multiple climate and emissions scenarios. *J Air Waste Manag Assoc.*, *71*(10),1251-1264.