



May 28, 2024

The Honorable Michael Regan
 Administrator
 U.S. Environmental Protection Agency
 1200 Pennsylvania Avenue NW
 Washington, DC 20004

Dear Administrator Regan:

Re: Docket EPA-HQ-OAR-2024-0135

The undersigned national health and medical organizations appreciate the opportunity to provide comments to EPA on key considerations as the agency drafts measures to reduce carbon emissions from the existing fleet of gas-fired power plants and additional measures to reduce the health-harming emissions that come from gas-fired turbines.

EPA's mission is to protect human health and the environment. This north star must guide the agency's work on reducing emissions from existing gas. The agency does, of course, have a responsibility to consider the impacts of these forthcoming standards and to engage with a variety of stakeholders to craft them. However, EPA's final standards must reflect the core truth that while numerous other federal statutes and programs exist to ensure electricity reliability and other aspects of the nation's power, human health is EPA's purview and no other agency with jurisdiction over the power sector has this same charge.

Health Impacts of Climate Change

The need to clean up emissions from gas turbines, both within and beyond the power sector, is urgent. Climate change is worsening air quality and harming public health. Warmer temperatures create enhanced opportunities for ground-level ozone to form. Ozone is a powerful air pollutant that makes it harder to breathe, can cause heart attacks and strokes, and can even lead to early death. Warmer temperatures and droughts are causing wildfires to be more frequent and intense, releasing fine particles of smoke that enter deep within the lungs and can lead to respiratory, neurological and cardiovascular problems, cause lung cancer and premature death. Seasonal allergies caused by pollen, spores, and vegetation-related agents have also become more severe and longer in duration. Flooding from increases in extreme precipitation events can threaten health long after floodwaters recede. Floodwaters can leave behind mold, sewage and toxic chemicals, the cleanup of which can also lead to more pollution as debris is burned and generators are turned on. Extreme weather disasters like flooding and events like wildfires can also often make it harder for patients to access their normal medical care and medications.

Additional health impacts due to climate change include heat-related illness and death, increased spread of vector-borne disease, and profound mental health impacts. Climate change is also a health equity issue. People of color and people living in low-income communities are more likely to have chronic conditions and to live and work in places with increased risks from climate change. People of color are also more likely to work in professions that require outdoor work, such as in agriculture and construction, where they face greater exposure to unhealthy air and increased heat. Low-income communities hit by weather disasters often take longer to recover and may lack resources to take protective steps ahead of future disasters.

Health Impacts of Gas-Fired Power Plants and Turbines

In addition to greenhouse gases, power plants emit air pollutants that can worsen local air quality and harm health, including oxides of nitrogen (NO_x). Nitrogen oxides react to form ozone. Ozone pollution can cause breathing problems, heart problems and premature death. Long-term exposure can lead to permanently reduced lung function in children and may cause central nervous system, reproductive and developmental harm.¹

NO_x is a powerful air pollutant on its own with serious impacts on human health and environment. It is highly reactive, and can cause a range of health harms, including airway inflammation, coughing and wheezing, and a greater likelihood of asthma attacks, emergency department visits and hospital admissions for people with lung disease. NO_x also forms secondary particles in the atmosphere.²

Stationary combustion turbines operated using gas also emit hazardous air pollutants (HAP), including formaldehyde, toluene, benzene, acetaldehyde, and metallic HAP. Many of these HAPS cause respiratory harm and are probable human carcinogens. For example, benzene can cause irritation, headaches and unconsciousness from acute exposure and blood disorders from chronic exposure, including blood cancers.³

¹ Environmental Protection Agency (EPA). (Jan. 2016). Integrated Science Assessment (ISA) for Oxides of Nitrogen – Health Criteria, Final Report - EPA/600/R-15/068.

² Ibid.

³ U.S. EPA. (May 2023). Regulatory Impact Analysis for the Proposed New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired EGUs; Emission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired EGUs; EPA-452/R-23-006.

In testimony submitted to a state air pollution control board on potential health impacts of a proposed new compressor station, researcher George Thurston noted the increased health risks of particles from fossil fuel combustion compared to other particles. While much research has been devoted to the impact of burning coal, he noted, “Although the mass of particles emitted per unit energy is less for oil- and gas-fired units, there is no reason to believe that they are less toxic on a pound for pound basis, and good reason to expect they would be more toxic, since there are so many more ultrafine particles emitted by natural gas burning facilities, per pound of emission; and ultrafine (e.g., nanoparticles, having diameters less than 0.1 µm) are thought to be far more toxic per unit mass than large particles, and because they can reach deep into the lung, even potentially passing across the lung’s membranes into the bloodstream to travel systemically throughout the body of a person who breathes them.”⁴

Health Considerations

We urge EPA to ensure that the many health impacts of gas turbines are included in its analysis, and, wherever possible, that they are quantified and monetized. In many ways, EPA’s Regulatory Impact Analysis (RIA) in the proposal for existing coal and new gas underestimated the health benefits of reducing pollution that drives climate change.⁵ For example, in assigning a cost to the impacts of climate change, EPA used the most current recommendation of using inflation-adjusted interim Social Cost of Greenhouse Gases estimates, but also acknowledged that this is an underestimation.⁶ We appreciate the agency’s work to improve this measure, as many of the health impacts of climate change, such as increased incidence of lung cancer from wildfire smoke exposure and of vector-borne diseases from increased spread, have not been incorporated into previous iterations of the Social Cost of Greenhouse Gases. Physical and mental health harms from climate change that are difficult to quantify are no less real.

We further urge the agency to perform a robust cumulative impacts analysis associated with this rulemaking to ensure that not only do communities bearing the brunt of pollution from existing gas power plants not see emissions increases, but in fact see the benefits of air quality improvements.

Considerations for 111(d) Standards for Greenhouse Gases for Existing Gas Plants

We urge the agency to build meaningful engagement with affected communities into the development of the rule itself, including as part of the determination of the Best System of Emission Reduction. While we understand the legal constraints the agency has in writing this rule, we also urge EPA to consider a comprehensive suite of standards alongside the 111(d) rule to help ensure cleanup in every community.

For the 111(d) rule, we urge EPA to consider basing its approach on plants rather than units to ensure that the greatest sources of pollution are covered. We also urge the agency to minimize opportunities for exemptions of instances of high emissions, as these exemptions are so often used as excuses to avoid cleanup.

⁴ Thurston, G. (April 9, 2021.) “In the Matter of the Proposed Lambert Compressor Station.”

⁵ U.S. EPA. (May 2023). Regulatory Impact Analysis for the Proposed New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired EGUs; Emission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired EGUs; EPA-452/R-23-006.

⁶ U.S. EPA. (May 2023). Regulatory Impact Analysis for the Proposed New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired EGUs; Emission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired EGUs; page 4-6.

We note here, as we did in our comments on the 111 proposal for existing coal and new gas plants, that the installation and use of carbon capture and sequestration/storage (CCS) at a fossil fuel-fired plant does not make it clean. While the use of CCS requires that sulfur dioxide, sulfites and nitrogen oxides be reduced for the technology to function properly, it may not require the same of other pollutants. Further, the installation and use of pollution control technologies designed to capture climate emissions have the potential to result in those plants running more frequently, harming communities nearby. EPA should act to ensure that New Source Review and New Source Performance Standards rules are rigorously applied to prevent increases in any pollutants from projects that install CCS to comply with the standards.

We also note that there are health concerns with the transport of carbon: many of our organizations have noted that leaks of CO₂ pipelines pose a particular health risk for communities with a pipeline nearby. CO₂ is an asphyxiant, with symptoms ranging from headache and drowsiness to confusion to death.⁷ It is important that EPA collaborate with the Department of Transportation's Pipeline and Hazardous Materials Safety Administration to protect the public from these health risks.

We also note, as we did in our comments on the previous 111 proposal, the potential health impacts of the inclusion of hydrogen as a system of emissions reduction. The majority of hydrogen used today is generated by breaking down fossil fuel hydrocarbons such as methane, and thereby perpetuating our reliance on them. The creation of hydrogen using electrolysis driven by renewable sources such as wind or solar is the better alternative that more closely adheres to the moniker of "low-GHG hydrogen." This form of hydrogen – referred to as "green hydrogen" – is not widely available for commercial use currently, being reserved for industrial sectors like fertilizer or steel production and other hard-to-electrify industries.

EPA, working in coordination with other departments and agencies, should prioritize the development and use of truly low-GHG hydrogen made from new, 100% renewable energy beyond what is currently generated. We further note the additional requirements for low-GHG hydrogen called for by Clean Air Task Force and other organizations to ensure actual reductions in emissions: that hydrogen be hourly-matched and delivered within the same geographic region as the hydrogen electrolyzer that produced it.⁸

Across all subcategories, we encourage EPA to work with states as they develop state plans to set legally enforceable deadlines for plants to demonstrate compliance or a path towards meeting compliance deadlines. Plants must be held accountable for the pathway they choose – including anticipated retirement dates – and must remain locked in on that timetable for compliance. We also support making public those deadlines and plant actions towards compliance.

A Truly Comprehensive Approach is Crucial

As EPA has noted, a final 111(d) rule alone will not fully address the health impacts of the nation's existing fleet of gas turbines. On February 29, 2024, EPA announced that the agency would "take a new, comprehensive approach to cover the entire fleet of natural gas-fired

⁷ FSIS Environmental Safety and Health Group, US Department of Agriculture. Carbon Dioxide Health Hazard Information Sheet. https://www.fsis.usda.gov/sites/default/files/media_file/2020-08/Carbon-Dioxide.pdf

⁸ Clean Air Task Force Comments to IRS Regarding the U.S. Department of Treasury's Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production (December 6, 2022). <https://www.regulations.gov/comment/IRS-2022-0029-0134>

turbines, as well as cover more pollutants including climate, toxic and criteria air pollution.”⁹ EPA’s stated plans to review the National Emissions Standards for Hazardous Air Pollutants for formaldehyde and set stronger New Source Performance Standards to reduce NO_x (nitrogen oxides) for new gas turbines are a good start. We appreciate that these standards would have important health and environmental justice benefits and would cover turbines at industrial facilities as well as power plants. Our organizations will weigh in throughout the development of these rules to ensure that they maximize the health benefits of reducing emissions from existing turbines. EPA must make these standards strong and must undertake these rulemakings quickly.

However, more is needed for this approach to be truly comprehensive in addressing emissions from the existing gas fleet. EPA should review the NESHAPs for not only formaldehyde, but also for benzene, acetaldehyde, toluene, hydrochloric acid, arsenic, lead and mercury, given the devastating health impacts these emissions create.

EPA must also strengthen the National Ambient Air Quality Standards (NAAQS) for ozone and for nitrogen dioxide, for two important reasons. First, the Clean Air Act requires it. Both standards are currently too weak to adequately protect human health with an adequate margin of safety, as the law requires.¹⁰ Second, these stronger NAAQS would work hand-in-hand with EPA’s other rules to reduce emissions from gas turbines, helping ensure that these measures all work to reduce NO₂ and ozone to health-protective levels.

With regard to ozone, EPA must quickly complete its current review and set a stronger standard of 55-60 parts per billion. The experts on the ozone panel of the Clean Air Scientific Advisory Committee near-unanimously concluded that the scientific evidence to-date unequivocally demonstrates that the current primary standard is entirely inadequate to protect public health. They further concluded that the scientific evidence supports their recommendations of alternative primary standard of 55-60 ppb. Multiple studies show human health effects at levels below the current standards.

EPA must also complete its current review of the NO₂ NAAQS and finalize more protective standards. Reviews of studies have highlighted short-term and/or long-term exposures to NO₂/NO_x in the causation, increased risk of development, or exacerbation of existing conditions, or in associations with specific adverse health endpoints, including increased risks of cardiovascular and respiratory mortality,¹¹ stroke,¹² developing hypertensive disorders of pregnancy,¹³ childhood asthma development,¹⁴ Type 2 diabetes,¹⁵ increased risk of dementia,¹⁶

⁹ “Statement from EPA Administrator Michael S. Regan on EPA’s Approach to the Power Sector.” [Statement from EPA Administrator Michael S. Regan on EPA’s approach to the power sector | US EPA](#)

¹⁰ Clean Air Act. 42 U.S. Code § 7409 - [National primary and secondary ambient air quality standards](#)

¹¹ Newell, K., Kartsonaki, C., Lam, K. B. H., & Kurmi, O. (2018). [Cardiorespiratory health effects of gaseous ambient air pollution exposure in low and middle income countries: a systematic review and meta-analysis](#). *Environmental health : a global access science source*, 17(1), 41.

¹² Haddad, P., et al. (2023). [Long-term exposure to traffic-related air pollution and stroke: A systematic review and meta-analysis](#). *International journal of hygiene and environmental health*, 247, 114079.

¹³ National Toxicology Program (2019). [NTP monograph on the systematic review of traffic-related air pollution and hypertensive disorders of pregnancy](#). *NTP monograph*, (7), NTP-MGRAPH-7.

¹⁴ Khreis, H., et al. (2017). [Exposure to traffic-related air pollution and risk of development of childhood asthma: A systematic review and meta-analysis](#). *Environment international*, 100, 1–31.

¹⁵ Yang, B. Y., et al. (2020). Ambient air pollution and diabetes: [A systematic review and meta-analysis](#). *Environmental research*, 180, 108817.

¹⁶ Peters, R., Ee, N., Peters, J., Booth, A., Mudway, I., & Anstey, K. J. (2019). [Air Pollution and Dementia: A Systematic Review](#). *Journal of Alzheimer's Disease*, 70(s1), S145–S163.

increased risk of depression,¹⁷ increased risk of Parkinson's disease,¹⁸ recurrence or prevalence of multiple sclerosis,¹⁹ adverse central nervous system effects in children and adults,²⁰ and prevalence of allergic rhinitis.²¹

Finally, EPA should employ its framework of a comprehensive approach to help maximize emissions reductions from measures already in place, including updating the Alternative Control Technique Guidelines for NO_x at electricity generation units to require continuous operation of SCR/SNCR emissions control systems in ozone nonattainment areas.

EPA Must Strengthen Permitting Processes in Tandem

More broadly, strong standards to reduce pollution from burning gas will fail to fully protect health, especially in communities near polluting facilities, if the system under which those facilities are permitted fails to require – and enforce – that they don't harm health. EPA must halt current steps to weaken the permitting process and instead move forward with additional steps to strengthen it and close loopholes that lead to real health harms. Doing so is essential to both avoiding co-pollutant increases in facilities that install new controls under the future 111(d) rule and to successfully implementing other pollution protections.

EPA must withdraw its proposal, "Clarifying the Scope of 'Applicable Requirements' Under State Operating Permit Programs and the Federal Operating Permit Program." This proposal codifies a permitting rollback that makes it harder for the public to seek redress when a polluting source in their community emits more dangerous pollution than it should. This practice puts health at risk and runs counter to the administration's stated environmental justice goals. EPA must withdraw it without delay.

EPA must also restore the "Once-In, Always-In" policy that ensured that major sources of pollution continued operating stringent emissions controls. EPA's proposal, "Review of Final Rule Reclassification of Major Sources as Area Sources Under Section 112 of the Clean Air Act," falls short of a full restoration of this policy. Health organizations submitted comments to the proposal docket – which closed in late summer 2023 – articulating concerns and better alternatives the agency can take.

EPA must also take additional actions to close permitting loopholes. These loopholes include (but are not limited to): ending the demand growth exemption/exclusion policy that allows facilities to claim that pollution increases are due to changes in demand rather than changes to the facility; ending the use of project emissions accounting, which allows sources to avoid permitting requirements for emissions increases if they can show that the net emissions aren't significant, even if they don't then follow through on the forecast emissions reductions; and rescinding the guidance defining "ambient air" to exclude large swaths of areas near polluting facilities.

¹⁷ Borroni, E., Pesatori, A. C., Bollati, V., Buoli, M., & Carugno, M. (2022). [Air pollution exposure and depression: A comprehensive updated systematic review and meta-analysis](#). *Environmental pollution*, 292(Pt A), 118245.

¹⁸ Kasdagli, M. I., et al. (2019). [Air pollution and Parkinson's disease: A systematic review and meta-analysis up to 2018](#). *International journal of hygiene and environmental health*, 222(3), 402–409.

¹⁹ Farahmandfard, M. A., Naghibzadeh-Tahami, A., & Khanjani, N. (2021). [Ambient air pollution and multiple sclerosis: a systematic review](#). *Reviews on environmental health*, 36(4), 535–544.

²⁰ Sram, R. J., Veleminsky, M., Jr, Veleminsky, M., Sr, & Stejskalová, J. (2017). [The impact of air pollution to central nervous system in children and adults](#). *Neuro endocrinology letters*, 38(6), 389–396.

²¹ Li, S., et al (2022). [Association between exposure to air pollution and risk of allergic rhinitis: A systematic review and meta-analysis](#). *Environmental research*, 205, 112472.

EPA must also issue guidance that directs alternatives analysis during permitting processes. Where legally available, EPA has an opportunity – and a responsibility – to use pathways to help drive a transition to a clean, non-combustion future. This includes ensuring that in the permitting process, zero-emission alternatives are considered alongside other options. For example, EPA should clarify that the redefining the source doctrine should not be used to exclude analysis of clean technology alternatives during the permitting process.

Conclusion

Our organizations appreciate the opportunity to provide comments on EPA's approach to clean up carbon and other emissions from existing gas power plants and other turbines, and stand committed to working with the agency to ensure these rules fulfill EPA's charge of protecting human health.

Signed,

Allergy & Asthma Network
Alliance of Nurses for Healthy Environments
American Lung Association
American Public Health Association
American Thoracic Society
Asthma and Allergy Foundation of America
California Nurses for Environmental Health and Justice
Climate Psychiatry Alliance
Health Care Without Harm
Maternal and Child Health Access
Medical Students for a Sustainable Future
Mothers And Others For Clean Air
Medical Society Consortium on Climate and Health
National Association of Pediatric Nurse Practitioners
OUCH-I (Oncology Advocates United for Climate and Health International)
Physicians for Social Responsibility
Physicians for Social Responsibility Iowa Chapter
Physicians for Social Responsibility Pennsylvania
Physicians for Social Responsibility Wisconsin
Regional Asthma Management & Prevention
Washington Physicians for Social Responsibility
Wisconsin Environmental Health Network