

August 8, 2023

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
EPA Docket Center
Docket ID No. EPA-HQ-OAR-2023-0072
Mail Code 28221T
1200 Pennsylvania Avenue NW
Washington, DC 20460

Attention: Docket EPA-HQ-OAR-2023-0072

Dear Administrator Regan,

Please accept these comments submitted by Georgetown Climate Center, developed in collaboration with climate leadership states, in response to the U.S. Environmental Protection Agency's (EPA) proposed "New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units: Emission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule." Georgetown Climate Center facilitated discussions with state environment agency officials from states across the country to inform the following comments.

OVERARCHING PRINCIPLES

We urge EPA to take the following principles into account when finalizing the New Source Performance Standards for new gas turbines and the Emission Guidelines covering existing coal steam units and existing gas turbines:

1. Meaningful standards for greenhouse gas (GHG) pollution from the power sector under section 111 of the Clean Air Act are long overdue.
2. While many states have been leaders in reducing carbon emissions from the power sector, it is critical that the federal government set a floor for all fossil-fuel electric generating units across the country.

3. EPA should promulgate standards that require the control of climate pollution to the maximum extent allowed by the Clean Air Act as interpreted by the Supreme Court in *West Virginia v. Environmental Protection Agency*.
4. The proposed rules should be considered a first step. In addition to finalizing the best possible New Source Performance Standards and emissions guidelines for existing sources, EPA should begin consideration of companion rulemakings necessary to reduce climate pollution from units left uncovered by those rules, including gas steam units, which according to EPA's integrated modeling analysis are expected to grow as a share of the fleet. In addition, to the extent the draft rules rely on increased use of hydrogen, they will lead to the construction and operation of hydrogen production facilities that should themselves be regulated under section 111 of the Clean Air Act.
5. It is imperative that states have both the resources and time for meaningful engagement of frontline and disadvantaged communities around the potential impacts of the new source performance standards for gas plants and any state plan to implement the final emission guidelines for existing coal and gas plants.
6. While section 111(d) of the Clean Air Act allows for considerable flexibility in state plans, it does not and should not allow flexibility that undermines the achievement of the emissions reductions required under the federal emission guidelines.
7. At the same time, EPA should work with states that have existing mandatory enforceable programs to reduce climate pollution from power plants to ensure that those programs achieve reductions that are equivalent to or better than federal emission guidelines. EPA should respect the historical role many states play in carrying out electricity resource planning and otherwise implementing policies that choose which resources will produce electricity to serve a state's consumers.

LOW-GHG HYDROGEN

8. *EPA's Definition of Low-GHG Hydrogen.* EPA has proposed a definition of low-GHG hydrogen that relies on what the Department of Treasury will use as the standard for GHG hydrogen eligible for the full federal production tax credit: hydrogen with 0.45 kg of embedded greenhouse gases per kg of hydrogen produced when taking into account all emissions associated with the production of the hydrogen, including any upstream emissions that arise in the extraction and transport of the feedstock.

- 8.1. We support EPA's definition of low-GHG hydrogen for purposes of this proposal.
- 8.2. At the same time, given the potential that hydrogen production from higher-GHG production methods is likely to increase in the coming years, we urge EPA to immediately begin consideration of rules to regulate the emissions stemming from that production, including from the reformation of natural gas to produce hydrogen.

NEW GAS TURBINES

- 9. *New Source Performance Standards for New Gas Turbines.* We support EPA's proposal to require that any new gas-fired turbine that operates above a minimum capacity threshold should at least be required to eventually install controls or co-fire low-GHG fuel. While some states are already seeking more stringent and feasible limitations for new units, under state-specific laws and regulations, we appreciate EPA taking this step to ensure at least some level of emission reductions at the federal level. This approach will put a long overdue end to the construction of new uncontrolled natural gas units operating without needing to add demonstrated and available controls, or use low-GHG fuels.

- 9.1. Applicability Thresholds

- 9.1.1. *Low load "peaking" combustion turbines with no higher than a 20% capacity factor.* We support EPA's proposal that combustion turbines that do not run very often—no higher than an average capacity factor of 20%—would not be immediately required to install pollution controls or co-fire low-GHG fuels. This approach will allow low-utilization peaker units to play their limited role in supporting the sector's transition to zero-carbon resources by balancing renewable generation at times when and in locations where that generation needs balancing. In some states, peaker generation operated at relatively low loads may play an important role in the overall transition to lower- and zero-GHG electricity generation. In the future, however, the role of fossil-fuel-fired peakers may change and is expected to become more limited as alternatives (e.g., renewables plus storage) become less expensive and available for longer durations, warranting reconsideration of this "exempt" status for low-load peaking units. In addition, we urge EPA to consider whether the 20% capacity threshold could be lowered, such as to 15%, while accomplishing the same goals.
 - 9.1.2. *Intermediate load combustion turbines that operate at a capacity factor greater than 20% but lower than 50% capacity factor.* Intermediate load turbines would

be required to co-fire low-GHG hydrogen at 30% by 2032 and at 96% by 2038. We support EPA in requiring intermediate load turbines to control emissions. We suggest, however, that EPA consider lowering the capacity range for intermediate turbines to between 15% and 40%. Where operators end up relying on combustion turbines to play a bigger role in serving load by operating them more often at higher utilization rates, those units begin to serve more than a balancing or short-term need function and begin to resemble base load units that should be required to further control emissions.

- 9.1.3. *Base load combustion turbines that operate at a capacity factor above 50%.* We support EPA's proposal to require any new combined-cycle combustion turbines that operate as base load units to achieve emissions rates consistent with 96% co-firing low-GHG fuels in 2038 or 90% carbon capture in 2035. This approach should be applied to as broad a range of new units as is feasible. We suggest, in that regard, that EPA consider lowering the threshold for base load units to 40%.

EXISTING COAL STEAM UNITS

- 10. *Best System of Emissions Reduction (BSER) for Existing Coal Steam Units.* We support EPA's approach to regulating existing coal units under the proposed rule. The approach recognizes that many aging and inefficient coal plants have announced retirements in this decade or early in the next decade and it would not make sense to require retiring units to invest in control technologies, the costs of which would be passed on to utility customers, only to have those plants shut down without getting the benefit of those investments.
- 10.1. *Applicability Thresholds for Existing Coal Steam Units.* We support EPA's applicability threshold that would subject coal plants that are expected to operate longer into the future to install pollution controls.
 - 10.1.1. *Imminent-term EGUs: Retirement by 2032.* We support EPA's proposal to require that these plants accept an enforceable condition to retire before the end of 2031 and an emissions limitation that reflects no increase in the plant's emissions rate. We suggest, however, that EPA consider moving this date up as soon as is feasible, such as to 2030.
 - 10.1.2. *Near-term EGUs: Retirement before 2035.* We support EPA's approach to require units that expect to operate a little longer—up to the end of 2034—to require those units to accept a 20% capacity limitation, a pre-2035 retirement

condition, and an emissions limitation that reflects no increase in the plant's emissions rate.

- 10.1.3. *Medium-Term EGUs: Retirement before 2040.* We support EPA's approach to require units that expect to retire before the end of 2039 to take action to reduce emissions, in addition to an enforceable permit condition to retire. EPA's proposal to require such units to co-fire with at least 40% natural gas beginning January 1, 2030, is one mechanism, while other emission reduction strategies would also be available for such units.
- 10.1.4. We recommend that EPA consider strengthening the proposal by requiring Near- and Medium-Term coal steam EGUs to both accept a 20% capacity limitation and co-fire natural gas at a 40% rate or otherwise reduce emissions beginning in 2030.
- 10.1.5. *Long-term EGUs: No Retirement before 2040.* We support EPA's approach that coal steam units that have no intention of retiring before 2040 in the proposal must install carbon capture and storage (CCS) with a capture rate of at least 90% and begin operating CCS no later than January 1, 2030. EPA premises this retirement cutoff date on the notion that carbon capture and storage systems require 10 years operation to justify the investment. We suggest EPA consider moving up the retirement cutoff date to 2038 after considering whether 8 years is a sufficient time to operate a carbon capture system to justify the costs.
- 10.2. In its Regulatory Impact Analysis, EPA estimates that a significant number of existing coal steam units will switch to 100% natural gas. These natural gas steam units are not required to install any GHG pollution controls under EPA's draft regulations, leaving a gap that will tend to favor less efficient and higher polluting gas steam units over more efficient, lower emissions combustion turbines regulated under EPA's 111(d) proposal for existing gas turbines. EPA should work to cover this gap by putting gas steam units on a trajectory that requires GHG pollution controls on gas steam units. One approach would be for EPA to require that, for any existing coal unit that switches to 100% natural gas, such units must at least meet the same standards as those applicable to new natural gas-fired turbines.

EXISTING GAS TURBINES

11. *Applicability: definition of “unit.”* EPA has released a companion memorandum to the draft rule that explains how “unit” will be defined for combined cycle units. We support EPA providing an explanation of applicability and encourage the agency to improve this explanation and bring a clearer explanation into the final rule.
12. *Applicability thresholds for existing gas turbine units: ≥ 300 MW nameplate capacity and $\geq 50\%$ capacity factor.* We do not support EPA’s proposed applicability thresholds for existing natural gas units, because they leave far too many existing natural gas units without any requirement to control greenhouse gas pollution. Gaps in coverage will undermine the environmental objectives of the rule by encouraging power plant operators to shift production in ways that avoid applicability and do not reduce emissions. In the final rule, and in subsequent rulemakings, EPA should remedy this limited coverage by changing the thresholds for applicability and phasing in controls on units currently not covered by the draft.

PROCESS FOR STATE PLAN DEVELOPMENT AND SUBMISSION

13. *Timeline for State Plans: 24 Months from finalization of emission guidelines.*
 - 13.1. EPA is providing states with more time than they proposed in the 111(d) implementing regulations. We support the 24-month proposal.
 - 13.2. We support EPA working with states closely to provide support and be judicious in how they administer the 24-month deadline.
14. *Meaningful Engagement Requirements.* EPA must allow states flexibility and time to carry out meaningful engagement requirements.
15. *Invoking Remaining Useful Life and Other Factors (RULOF).* EPA should ensure that states do not invoke RULOF flexibility in ways that substantially undermine the environmental integrity of the emissions guidelines.
16. *Flexibility in State Plans: Demonstrating Equivalency with Federal Guidelines.*
 - 16.1. *Existing state policies.* EPA should work with states that wish to develop and implement alternative state plans that depart from the presumptively approvable approach set out in the emission guidelines finalized by EPA.

- 16.1.1. The Regional Greenhouse Gas Initiative (RGGI). RGGI has been in operation to reduce carbon dioxide emissions from fossil-fuel power plants since January 1, 2009. And unlike the proposed federal standards, RGGI covers all fossil-fuel-fired power plants above a nameplate capacity of 25MW, regardless of their fossil fuel type or capacity factor. In the final rule, EPA should expressly allow RGGI to serve as a state's mechanism for meeting the 111(d) emission guideline requirements so long as RGGI reduces emissions by at least an amount equal to the emissions reductions expected under EPA's final rule.
- 16.1.2. California Cap and Trade and Washington Cap and Invest. Both California and Washington have mass-based emissions reduction programs that cover their electricity sectors with coverage that far exceeds the coverage proposed by EPA in its emissions guidelines. In the event either or both states seek to rely on their existing programs to achieve equivalent or greater reductions from the electricity sector, EPA should work with them to achieve this result. The same should be true for other states that may develop comparable mass-based emission reduction programs, such as economy-wide cap and invest or other similar programs with a coverage far broader than the coverage proposed by EPA in its emission guidelines.
- 16.1.3. Low Carbon Fuel Standards. Several states are administering low-carbon or clean fuel standards. In the final rule, EPA should specifically allow states with mandatory clean fuel standards to permit units to co-fire low-GHG fuels other than hydrogen, provided the emissions outcomes are equivalent or better.
- 16.1.4. Other mandatory state regulations and policies. States should be permitted to base state plans on any mandatory, enforceable state regulations and policies that can demonstrably achieve the same or better emissions result from the power sector as EPA's final emission guidelines.
- 16.2. *Trading Approaches.* We urge EPA to work with states and groups of states to enable flexible approaches that better afford the flexibility necessary to operate a dynamic electricity grid, while ensuring any mechanisms still achieve at least the same level of emission reductions. These include averaging, rate-based trading and mass-based trading:
 - 16.2.1. Averaging. EPA should allow states to include in their state plans averaging of emissions performance across multiple units at the same facility, across

units in common ownership within a state, and across units in common ownership in multiple states.

- 16.2.2. Rate-Based Trading Approaches. EPA should allow states to include in their state plans rate-based trading across units in an individual state or across multiple states.
- 16.2.3. Mass-Based Trading Approaches. EPA should allow states to include in their state plans mass-based trading across units in an individual state or across multiple states.
- 16.2.4. EPA should offer technical assistance to states or groups of states that wish to implement a trading program by providing model rule language and assistance standing up and operating trading program infrastructure.

ELECTRIC SYSTEM RELIABILITY

Reliability Considerations. EPA should work with states in the context of developing state plans to provide flexibility to plant owners and operators that is consistent with the way electricity systems are balanced and dispatched. States have demonstrated that flexible implementation of emission reduction requirements, such as through trading programs, allows for the reliable operation of the system across all generation sources.

We appreciate this opportunity to provide comments and look forward to working with EPA on implementation of the final rule.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kathryn A. Zyla".

Kathryn A. Zyla
Executive Director
Georgetown Climate Center