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ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



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U.S. Environmental Protection Agency
EPA Docket Center
Docket ID Number: EPA-HQ-OAR-2023-0072
Mail Code 28221T
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: U.S. Environmental Protection Agency's "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", Docket ID Number: EPA-HQ-OAR-2023-0072

To whom it may concern:

The Arizona Department of Environmental Quality (ADEQ) appreciates the opportunity to comment on EPA's 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," collectively the "Power Sector GHG Proposal," 88 FR 33,240 (May 23, 2023).

The comment letter addresses ADEQ's: 1) support for the proposed rule; 2) request for EPA to extend plan submittal time; 3) concerns about potential backsliding issues related to NO_x from hydrogen co-firing; 4) apprehension about the vagueness of EPA's meaningful engagement definition; 5) request for a model rule or plan; 6) support for the proposed "dual-path" approach; and 7) reducing the burden of milestone reporting for EGUs with imminent closure dates.

- I. ADEQ is supportive of EPA's proposed rule.**
 - A. ADEQ supports the transition to a 21st century clean energy economy and reductions of CO₂ emissions.**

ADEQ is supportive of the federal efforts to reduce carbon emissions. Governor Hobbs' Resiliency Office prioritizes efforts to:

- Secure and modernize Arizona’s water supply by better conserving and managing our water, investing in and upgrading our infrastructure, and providing the leadership needed to bring Arizonans together so that every stakeholder has a seat at the table.
- Protect Arizona’s precious natural resources, like our forests, parks, and bodies of water, from the devastating effects of climate change that we’re already experiencing.
- Invest in a 21st-century clean energy economy that lowers costs for Arizonans, diversifies our energy infrastructure, and addresses the challenges brought by climate change.¹

EPA’s proposed rule will make significant progress toward addressing the climate crisis caused by carbon emissions. Reducing climate pollutants will serve in the term to protect Arizona’s precious natural resources.

B. ADEQ supports criteria pollutant reductions from EPA’s rule.

Additionally, ADEQ is supportive of the rule as it will reduce criteria air pollutants. As described in EPA’s Regulatory Impact Analysis (RIA) (Table ES-1) the proposed rule is projected to reduce other pollutants in addition to CO₂, such as:

- 64,000 tons less annual NO_x
- 22,000 tons less ozone season NO_x
- 107,000 tons less SO₂
- 6,000 tons less direct PM_{2.5}²

ADEQ is supportive of these reductions that will benefit public health and the environment. Arizona contains ozone, SO₂ and PM_{2.5} nonattainment areas, and therefore reductions of criteria pollutants and precursors could be useful in helping these nonattainment areas achieve the relevant NAAQS.

II. ADEQ requests EPA extend time for submittal of plan to 3 years.

ADEQ requests that EPA extend the time for submitting state plans to EPA from 24 months to 36 months. Currently, EPA’s proposed rule provides states 24 months from the effective date of the final rule to submit their state plans. Based on its experience developing plans for both the Clean Power Plan and the Affordable Clean Energy Rule, ADEQ believes that 36 months is a more appropriate amount of time to develop its 111(d) state plan, especially given the extensive stakeholder engagement and interagency cooperation that will be required to develop them. Additionally, ADEQ believes that EPA could grant this longer plan development period without impacting the implementation of the rule.

¹ Office of the Arizona Governor, Water and Environment, available at <https://azgovernor.gov/governor/priorities/water-and-environment> (last accessed July 19, 2023).

² EPA, Regulatory Impact Analysis for the 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, available at <https://www.regulations.gov/document/EPA-HQ-OAR-2023-0072-0007>, p. ES-10 (last accessed July 19, 2023).

EPA's United Regulatory agenda anticipates the final rule to be published in Spring 2024.³ Based on the current proposal, States would be required to submit their state plans by Spring 2026. EPA is required to make its completeness determination within 60 days. Next, EPA would be required to take action on the state plan submissions within 12 months of the completeness determination. Therefore, state plans would be approved by Summer 2027.

However, the earliest compliance deadline in EPA's proposed rule is January 1, 2030.⁴

ADEQ believes that regulatory certainty is an important consideration in the development of state plans, allowing for utilities to engage in their resource planning process. However, an additional 12 months would only move the finalization of state plans to Summer 2028. While this would shorten the time between EPA's action on a state plan and the earliest compliance date, it allows ADEQ to have more robust planning with relevant stakeholders. Specifically, Arizona Revised Statute (A.R.S.) § 49-459(A) provides:

The director [of ADEQ], in consultation with the corporation commission, and the governing bodies of affected public power entities as defined in section 30-801, electric utilities regulated by the corporation commission and independently owned electric generation units shall develop, adopt and enforce a state plan to regulate the emissions of carbon dioxide from existing electric generation units in compliance with rules adopted by the administrator under section 111(d) of the clean air act.

By enacting A.R.S. § 49-459, the Arizona State Legislature mandated that ADEQ engage in consultation with electric utilities and the Arizona Corporation Commission during the development of its state plan for regulating emissions of CO₂ from existing electric generation units under CAA § 111(d). As these entities will be engaged actively in the process of developing the state rule, ADEQ believes that approximately a year and half between EPA's action on state plans and January 1, 2030 is a sufficient amount of time for Arizona utilities to comply with the state plan.

III. ADEQ requests further analysis of concerns regarding NO_x emissions from hydrogen co-firing.

As noted in the proposal:

The combustion characteristics of hydrogen can lead to localized higher temperatures during the combustion process. These "hotspots" can increase emissions of . . . NO_x. NO_x emissions resulting from the combustion of high percentage by volume blends of hydrogen are also of concern in many regions of the country.⁵

³ EPA, Unified Agenda, NSPS for GHG Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired EGUs; Emission Guidelines for GHG Emissions From Existing Fossil Fuel-Fired EGUs; and Repeal of the ACE Rule, available at <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202304&RIN=2060-AV09> (last accessed July 19, 2023).

⁴ 88 FR 33,240, 33,371 (May 23, 2023).

⁵ *Id.* at 33,312.

ADEQ shares this concern regarding the potential for increased NOx emissions resulting from hydrogen co-firing in gas power plants and whether EPA's proposed conclusion that "any potential increases in NOx emissions do not change the Agency's view that on balance, co-firing low-GHG hydrogen qualifies as a component of the BSER" is reasonable.

The proposal relies on the fact that "all major combustion turbine manufacturers have developed [Dry Low NOx] DLN combustors for utility EGUs that can co-fire hydrogen" and an assumption that manufacturer plans to design "combustion turbines that will be capable of combusting 100 percent hydrogen by 2030, with DLN designs that assure acceptable levels of NOx emissions" will come to fruition by the required implementation dates.

ADEQ is concerned that this analysis may take too optimistic a view on the likely pace of technological improvement in this area of turbine design and NOx control.

One of EPA's technical support documents (TSD) for the proposal ("Hydrogen in Combustion Turbine Electric Generating Units Technical Support Document") does provide some further discussion of this issue.⁶ However, the TSD analysis also relies on manufacturers' announced plans and goals for low-NOx hydrogen-ready turbines and related assurances that existing NOx control technologies can be sized up or improved to counteract the increased NOx emissions expected from hydrogen co-firing.

Although the TSD notes several projects that have successfully demonstrated hydrogen co-firing for power generation, only one of the examples discusses the NOx control issue. A New York operator successfully used a fuel blend of 35% hydrogen in a retrofitted natural gas turbine, while "the unit's existing SCR controlled NOx emissions within permit limits."⁷

ADEQ requests EPA provide further analysis on this issue, such as updated information concerning hydrogen co-firing demonstration projects that have successfully shown adequate NOx controls at the time of the finalized rule.

Substantial uncertainty about the feasibility of future developments in NOx controls for hydrogen co-firing turbines may remain when this proposal is finalized and as states begin to develop implementation plans for this rule. Therefore, ADEQ also requests that EPA evaluate the feasibility under this proposal and the CAA of including a requirement that EGU operators demonstrate their plan to ensure no increase in NOx emissions beyond permit limits when a given unit begins co-firing with hydrogen.

IV. ADEQ requests EPA clarify its meaningful engagement requirements, or remove them from the completeness criteria.

In its February 24, 2023 comment letter to EPA's proposed implementing CAA § 111(d) rule, ADEQ commented that the definitions in EPA's proposed Subpart Ba revisions (40 CFR §§ 60.21a(k), (l), and (i))

⁶ EPA, Hydrogen in Combustion Turbine Electric Generating Units, Technical Support Document, available at <https://www.epa.gov/system/files/documents/2023-05/TSD%20-%20Hydrogen%20in%20Combustion%20Turbine%20EGUs.pdf> (last accessed July 20, 2023).

⁷ *Id.*

were vague. As the proposed meaningful engagement approach is tied to the completeness determination, ADEQ requested that EPA either provide additional structure regarding this requirement or to remove it from EPA's proposed completeness criteria.

ADEQ is concerned that the vagueness in EPA's approach to "meaningful engagement" could lead to the confusion and inconsistent results in the application of this proposed rule. ADEQ requests that EPA either provide additional structure regarding this requirement or remove it from EPA's proposed completeness criteria for this proposed emission guideline.

EPA's draft rule language, at 40 CFR § 60.5740b(9), requires the state plan to conduct meaningful engagement with pertinent stakeholders (both terms are defined by the proposed 40 CFR § 60.21a).⁸ As part of the proposal, the state must demonstrate how the state considered potential pollution impacts and benefits of control to communities most affected by and vulnerable to emissions from a designated facility. The demonstration must include: i) a list of pertinent stakeholders; ii) a summary of the engagement conducted; 3) a summary of stakeholder input provided, including information about the potential pollution impacts and benefits of control.

40 CFR § 60.5740b(9) goes on to state: "If a state plan submission does not meet the required elements for notice and opportunity for public participation, including requirements for meaningful engagement, this may be grounds for the EPA to find the submission incomplete or to disapprove the plan." This is precisely the issue ADEQ was concerned about in its February 24, 2023 comment letter. As the required elements for meaningful engagement remain vague, it opens the door to disputes about whether the plan is complete.

ADEQ agrees with the importance of engaging with its stakeholders, including those most affected by and vulnerable to emissions. However, it is also important for the State to understand clearly its meaningful engagement requirements and EPA's review. Unlike the State Implementation Plan (SIP) completeness determination period which lasts up to 6 months, EPA's proposal only provides for a 60-day completeness determination period, including the analysis of meaningful engagement.⁹ In order to help make this a useful determination, ADEQ urges EPA to provide States a clearer understanding of these requirements. Alternatively, ADEQ requests EPA to remove the meaningful engagement from the completeness criteria.

V. EPA should develop a model for states to utilize in the development of their state plans.

ADEQ encourages EPA to develop and release a model plan or rule early in the planning process. Alternatively, EPA could consider proposing a federal plan early in the process to allow states to comment on it or utilize such a proposed federal plan to develop their state plans. ADEQ believes that these types of documents would greatly assist states developing their state plans in a timely manner.

⁸ EPA, Docket ID No. EPA-HQ-OAR-2023-0072, Proposed Subpart UUUUb Regulatory Text, available at <https://www.regulations.gov/document/EPA-HQ-OAR-2023-0072-0006>.

⁹ CAA § 110(k)(B); cf. 87 FR 79,176 (Dec. 23, 2022), Docket ID No. EPA-HQ-OAR-2021-0527-0002, available at <https://www.regulations.gov/docket/EPA-HQ-OAR-2021-0527> (proposed revisions at 40 CFR § 60.27a)).

While a model plan or rule should be non-binding, it would be a helpful resource for states as they develop their own plans. Additionally, a model provides a helpful starting point, and allows states to develop more robust plans.

At a minimum, ADEQ encourages EPA to make a comprehensive guidance available to states as soon as possible after the final rule is promulgated. This would allow states to utilize the guidance to maximum effect.

VI. ADEQ supports the flexibility in EPA’s dual path discussion.

In its preamble, EPA solicits comment regarding a dual-path approach to allow owner/operators of affected coal-fired steam generating units and affected combustion turbine EGUs to have additional time to commit to a particular subcategory without the need for a State Plan revision. ADEQ is supportive of this approach, as it provides additional flexibility for the States while meeting EPA’s requirements.

Generally, the utilities in Arizona operate on a five year planning cycle. The additional time is helpful for utilities to manage their generating fleet and plan for future investments. Providing the flexibility contemplated in the dual-path approach could help align the state plan development process with the resource planning required by the Arizona Corporation Commission.

As EPA is soliciting comments on whether the proposed flexibility would have utility, ADEQ answers that this approach could have significant advantages for utilities as they engage in their resource planning. EPA’s rule will require utilities to explore carbon capture sequestration (CCS) and hydrogen technologies not previously implemented. CCS and hydrogen technologies may lack the necessary infrastructure at this time. This is especially true as the Department of Energy continues to build out resources that might be critical for implementation of this rule, such as Regional Clean Hydrogen Hubs.¹⁰ As such, it may be necessary to have additional time before committing to a particular compliance pathway as the necessary infrastructure is being developed.

VII. ADEQ requests that EPA reduce the milestone report administrative burden on imminent-term existing coal-fired steam generating units.

Proposed 40 CFR § 60.5740b(5) would obligate state plans to require affected EGUs within the imminent-term existing coal-fired steam generating units (§ 60.5775b(b)(4)), near-term existing coal-fired steam generating units (§ 60.5775b(b)(3)), and medium-term coal-fired steam generating unit subcategories would be required to submit an Initial Milestone Report to the applicable State administering authority.

¹⁰ Dept. of Energy, Office of Clean Energy Demonstrations, Regional Clean Hydrogen Hubs, available at <https://www.energy.gov/oced/regional-clean-hydrogen-hubs> (last accessed July 19, 2023); Ariz. State Univ., Regional network advances to full proposal for developing Southwest hydrogen hub, available at <https://news.asu.edu/20230315-regional-network-advances-full-proposal-developing-southwest-hydrogen-hub> (last accessed July 19, 2023).

With regard to the imminent-term existing coal-fired steam generating units (which consists of those coal-fired steam generating units that elected to commit to permanently cease operations on a date before January 1, 2032), ADEQ is concerned that the Milestones Reports are an unnecessary administrative burden.

ADEQ suggests EPA consider a streamlined approach for Milestone Report approach for this subcategory as facilities in this may already have binding conditions that require shutdown. Adding additional administrative burden does not seem to be necessary for furthering the proposed rule's goals. Therefore, this subcategory likely does not need the same level of reporting as the near-term and medium-term coal fired steam generating unit subcategories, which will be in operation for longer periods of time.

VIII. Conclusion.

ADEQ appreciates the opportunity to provide these comments on EPA's Power Sector GHG Proposal. If you have any questions, please contact Kelly MacKenzie, Air Quality Improvement Planning Manager at 602-771-4677 or mackenzie.kelly@azdeq.gov.

Thank you for your consideration of ADEQ's comments.

Sincerely,



Daniel Czecholinski
Air Quality Division Director