



**DIVISION OF
ENVIRONMENTAL QUALITY**

Sarah Huckabee Sanders
GOVERNOR

Shane E. Khoury
SECRETARY

August 8, 2023

Administrator Michael S. Regan

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW

Washington, District of Columbia 20460

RE: Docket ID No. EPA-HQ- OAR-2023-0072

Dear Administrator Regan:

On May 23, 2023, the United States Environmental Protection Agency (EPA) issued a proposed rule, “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” (“Proposed Rule”). The Arkansas Department of Energy and Environment’s Division of Environmental Quality (DEQ) respectfully provides these comments on the Proposed Rule to assist EPA in development of an appropriate path forward for implementation.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Witherow', written over a light blue horizontal line.

David Witherow

Associate Director, Office of Air Quality

Division of Environment

Arkansas Department of Energy and Environment

Table of Contents

I.	Introduction	1
II.	State Resources for Program Design and Implementation.....	1
A.	DEQ foresees difficulty meeting plan submission timelines represented by the Proposed EGs and requests that EPA consider providing the states with additional time to submit a plan.	1
B.	States need guidance from EPA to complete “meaningful engagement” requirements in a manner approvable under a state plan submission.	5
C.	EPA should consider making additional grant funds available for states to develop and administer the proposed EGs.....	6
III.	Best System of Emissions Reductions (BSER)	6
A.	Subcategorization of Power Plants under the Proposed EGs.....	6
B.	The infrastructure and supply chain constraints for CCS and low GHG hydrogen warrant revisions to compliance timelines for existing coal and gas units.	7
C.	EPA’s proposed EGs for existing coal-fired power plants are more stringent than the new source performance standards for new, modified, or reconstructed coal-fired power plants	8
D.	DEQ recommends that EPA include biomass co-firing as a permissible compliance pathway for coal-fired units.	8
IV.	DEQ endorses flexible compliance pathways, such as trading, averaging, and banking of compliance instruments (e.g. allowances).	8
V.	The proposed EGs need a safety valve for emergency situations in which energy production necessary for public safety cannot otherwise be achieved.....	9
VI.	Conclusion	9

I. Introduction

On May 23, 2023, EPA proposed five separate actions under Clean Air Act (CAA) section 111 to address greenhouse gas (GHG) emissions from fossil fuel-fired electric generating units (EGUs). EPA proposed revised new source performance standards (NSPS) for GHG emissions from new fossil fuel-fired stationary combustion turbine EGUs, and for GHG emissions from fossil fuel-fired steam generating units that undertake a large modification, based upon the 8-year review required by the CAA.

Under CAA section 111(d), EPA issues guidelines to states for existing designated facility types based on the best system of emission reductions (BSER). These guidelines establish standards of performance for existing sources of air pollutants that, if new, would otherwise be subject to NSPS. States must develop and submit state plans that establish and provide for implementation and enforcement of the standards of performance. In this proposed rule, EPA also proposed emission guidelines (EGs) for GHG emissions from existing fossil fuel-fired steam generating EGUs, which include both coal-fired and oil/gas-fired steam generating EGUs.

EPA additionally proposed to repeal the Affordable Clean Energy (ACE) Rule.

The Arkansas Department of Energy and Environment's Division of Environmental Quality (DEQ) respectfully offers the following comments on the proposed EGs.

II. State Resources for Program Design and Implementation

A. DEQ foresees difficulty meeting plan submission timelines represented by the Proposed EGs and requests that EPA consider providing the states with additional time to submit a plan.

Preparing rulemaking and finalizing a state plan to address EPA's Final Rule on this matter is just one of the numerous projects and state plan submissions that state air planning teams will be tackling over the next few years. In response to recent federal air-related rulemakings, DEQ's air planning team has limited capacity to address existing and incoming rule promulgations.. In addition to state plan development, members of this team are responsible for grant administration, metrics reporting, and development of Office of Air Quality outreach materials, emission inventory, public-facing air quality index forecasting, as well as state implementation plan modeling and prevention of significant deterioration modeling review. DEQ is aware from its coordination with other states that some have even fewer resources and staff available for state plan development than DEQ. In this landscape, DEQ stresses the need for EPA to commit to providing additional necessary financial and technical resources for state plan development and implementation, including EPA Clean Air Markets Program Data Business System (CBS) and associated resources for administering trading programs to assist states with plan development and compliance.

Preparation of an Arkansas plan to address EPA's Proposed EGs would require significantly greater amount of time than allowed in the Proposed Rule. In Arkansas, the average timeline to develop and submit a state plan to EPA that addresses a straightforward requirement is eighteen months, the minimum time required to meet the numerous federal and state administrative procedures involved in such an action. Plans including controversial or complex regulation, such as the Proposed EGs, can reasonably be expected to take longer.

The two-year submittal deadline does not provide adequate time for plan development due in part to Arkansas-specific administrative processes required to adopt a plan to regulate carbon dioxide from EGUs. Previous iterations of the Proposed EGs (i.e. the Clean Power Plan and ACE) resulted in Arkansas's General Assembly adopting measures that add another layer of review for any state plan proposed to address carbon dioxide emissions from EGUs. As such, under Arkansas Code Annotated (A.C.A.) § 8-3-205 DEQ is required to consult with the Arkansas Public Service Commission (APSC) and the Arkansas Economic Development Commission (AEDC) in preparation of initial and annual reports for the state plan required under the Proposed EGs.

Specifically, DEQ is required to prepare an initial report, taking into account the factors specified in A.C.A. § 8-4-312 and the Clean Air Act, 42 U.S.C. § 7401 et seq., as applicable, before proposing a plan, permit amendment, rule amendment, or administrative order necessary to implement a state plan for regulating carbon dioxide emissions from power plants. In addition, DEQ is required to prepare an initial report and annual reports on the following activities:

- 1) Consultation with the APSC to determine how the plan would affect:
 - a) The ability of the state to provide affordable electricity through diversified sources of electricity generation;
 - b) The type and amount of electric generating capacity within the state that is likely to withdraw from the state or switch to another fuel;
 - c) Stranded investment in electric generating and transmission capacity and other assets and infrastructure;
 - d) Potential risks to electric reliability within the state, including resource adequacy risks, transmission constraints, and natural gas supply and transmission adequacy; and
 - e) The amount by which retail electricity and any replacement fuel prices (rates) within the state are forecast to increase. A rate impact assessment must consider nonfuel costs, including generation, transmission, distribution, surcharges for renewable energy and energy efficiency, capital investment, upgrades to meet environmental requirements, utility profits, financing costs for new investments, unappreciated capital assets retired prematurely, and other nonfuel costs and surcharges, and the amount of funds contributed from all in-state taxpayers to local, state, and federal subsidies, grants, and credits to fund in-state electric generation sources, electric storage, and energy efficiency.
- 2) Consultation with the AEDC on the plan, giving consideration to:

- a) Disproportionate impacts of electricity and other replacement energy price increases on middle-income and lower-income households;
- b) Employment within the state, including direct and indirect employment effects and jobs potentially lost within affected sectors of the state's economy;
- c) Economic development within the state, including effects on manufacturing, commercial, and other sectors of the state's economy;
- d) The competitive position of the state in relation to neighboring states and other economic competitors; and
- e) State and local governments, including potential impacts resulting from changes in tax revenues and higher government outlays for electric service.

Consultation results must be compiled by DEQ and provided to the Arkansas Legislative Council in the form of an initial report (prior to rulemaking activities), and DEQ must provide subsequent annual reports in accordance with A.C.A. § 8-3-205.

To further illustrate staff effort required for development of a plan for addressing carbon dioxide from power plants, DEQ anticipates the following milestones related to required consultations, engagement, outreach, and other administrative procedures prior to adoption and submission of the required plan. This timeline assumes no delays due to capacity limitations on available staff or review by legislative and executive branch officials and provides a conservative estimate of the time necessary to perform required assessments and develop technical supporting materials.

Approximate time after Final Rule publishes in Federal Register	Process step
Month 1 through 2	Identification of pertinent stakeholders and subject facilities and completion of a stakeholder and public engagement plan; design and implementation of plan-specific webpage content; Initiate required consultation with APSC and AEDC and determine methods for conducting required assessments under A.C.A. § 8-3-205
Month 3	Host kick-off webinar to educate stakeholders on the basic requirements for development and adoption of power sector carbon dioxide rules;

	Meaningful engagement event logistics, including save the dates, booking a venue, lining up speakers, preparing an agenda, and producing meeting materials
Month 4 through 6	Undertake meaningful engagement with affected stakeholders, including communities that are most affected by both emissions from power plants and the economic impacts of the proposed EGs. E&E anticipates that this will require a minimum of five community meetings. Anticipated locations for community meetings: Dell/Osceola, AR Fulton, AR Gentry, AR El Dorado, AR Malvern, AR
Month 7 through 12	Development of draft plan concept and technical support considering feedback during meaningful engagement with affected stakeholders; Follow-up engagement, as necessary, on technical aspect of plans
Months 13 through 18	Preparation of initial reports required under A.C.A. § 8-3-205; Routing initial reports, draft plan concept, and other supporting materials for approval through state leadership
Month 19	Initiation of Rulemaking by Arkansas Pollution Control and Ecology Commission and Proposal of State Plan
Month 20 through 21	Public Hearing, Public Comment Period
Month 22 through 24	Response to comments on rulemaking and proposed state plan; Follow-up engagement, as necessary, on comments and technical aspect of plans
Months 24 through 29	Updates, if any, to initial reports required under A.C.A. § 8-3-205, if substantive changes are made in response to comments; Routing of initial reports, final rulemaking package, final state plan package, and other supporting materials for approval through state leadership
Month 30	Adoption of rulemaking by Arkansas Pollution Control and Ecology Commission

Months 31 through 35	Legislative review of initial reports, rulemaking package, and state plan package
Month 36	Submission of state plan
Ongoing	Annual reporting as required under A.C.A. § 8-3-205

DEQ estimates that the State of Arkansas will spend at least \$1.6 million over the course of three years to perform all of the activities detailed above with an ongoing cost of approximately \$400,000 annually each year thereafter to perform the required annual reporting updates. To ensure that this time and effort on the part of the State is not wasted, DEQ requests that EPA provide flexibility with respect to the timing of state plan submissions prior to issuing a finding of failure to submit and promulgating a federal plan. Specifically, DEQ requests that EPA revise proposed § 60.5760b as follows:

§ 60.5760b What are the timing requirements for submitting my State plan?

(a) You must submit a State plan with the information required under § 60.5740b by [INSERT DATE TWO YEARS FROM DATE OF PUBLICATION OF FINAL RULE].

(b) You must submit all information required under paragraph (a) of this section according to the electronic reporting requirements in § 60.5875b.

(c) You may request an extension for State plan submittal under § 60.5875b if you have provided notice of the opportunity to submit written comments and the opportunity for a public hearing on a draft State plan with that addresses the state’s approach to the information required under § 60.5740b by [INSERT DATE TWO YEARS FROM DATE OF PUBLICATION OF FINAL RULE].

(d) EPA shall grant an extension, not to exceed twenty-four months, to the deadline for State plan submission upon receipt from the requesting State of an extension request, a copy of a notice of opportunity to submit written comments on a draft State plan, and a copy of or electronic access to the draft State plan.

B. States need guidance from EPA to complete “meaningful engagement” requirements in a manner approvable under a state plan submission.

States have previously asked EPA for clarification regarding the requirement for “meaningful engagement” outside of the traditional public notice, hearing, and comment periods required by state and federal law. Based on the language included in the Proposed EGs and EPA’s previously proposed implementing rules for 111(d), it is not clear what EPA views as an approvable meaningful engagement process. DEQ requests that EPA provide a checklist of what states must

include in their state plan submittals to demonstrate that the state’s meaningful engagement strategy satisfies the requirements of the Proposed EGs. In addition, DEQ emphasizes that “meaningful engagement” is resource and time intensive to do well. States need additional time and resources to build trust with affected communities.

C. EPA should consider making additional grant funds available for states to develop and administer the proposed EGs.

As noted above, DEQ anticipates that development of a plan to comply with the proposed EGs will cost Arkansas approximately \$1.6 million over three years. This cost is in addition to DEQ’s normal 105 grant work activities. DEQ requests that EPA revise its formula for 105 Grants to states to take into account these new workloads or issue a supplemental grant under Section 103 of the Clean Air Act. EPA could revise the formula to provide additional funding for states with affected EGUs that would be subject to standards of performance under a state plan compliant with the proposed EGs.

III. Best System of Emissions Reductions (BSER)

A. Subcategorization of Power Plants under the Proposed EGs

The Proposed EGs include subcategorization that appropriately addresses announced closures of coal-fired power plants in the 2020s and early 2030s. DEQ supports the proposal to not require large investments at plants that plan to retire prior to 2032.

DEQ suggests that EPA reconsider its approach to subcategorization for large natural gas fired EGUs to appropriately consider the cost-effectiveness of carbon capture and sequestration (CCS) technology for large natural gas fired EGUs. The proposed EGs establish the subcategory for natural gas combustion turbines based on the individual combustion turbine and prorated capacity of connected heat recovery steam generators (HRSG); but EPA’s analysis of CCS is based on large power plants with multiple combustion turbines. In forming its subcategorization, EPA relied on a National Energy Technology Laboratory report that provided CCS cost information on examined power plants between 640 and 992 megawatts electric (MWe) net-power output and an 85 percent capacity factor.¹ Therefore, EPA should revise its applicability thresholds for CCS and low GHG hydrogen natural gas combustion turbines to match the assumptions made in the study upon which EPA bases its cost.

DEQ suggests that EPA focus on larger facilities (e.g. total net power output capacity > 640 MWe) for which there are enough units in combination to make the economics better for carbon capture. DEQ suggests that EPA use the lesser of net summer-rated capacity or net winter-rated capacity in its applicability thresholds instead of nameplate capacity.

DEQ supports not requiring large investments at load-following and peaker natural gas plants.

¹ Cost and Performance Baseline for Fossil Energy Plants Volume 1: Bituminous Coal and Natural Gas to Electricity (DOE/NETL - 2023/4320, October 14, 2022)

B. The infrastructure and supply chain constraints for CCS and low GHG hydrogen warrant revisions to compliance timelines for existing coal and gas units.

The Proposed EGs rely upon CCS and low GHG hydrogen control strategies that require significant off-site infrastructure investments to implement in addition to on-site modifications (e.g. construction of hydrogen or carbon dioxide pipelines). While hydrogen and CCS technologies are very promising for future compliance and offer alternative methods for reducing carbon dioxide emissions, the infrastructure for CCS and hydrogen production and transportation is not in place large-scale. Previous “studies use[d] high-level estimates for the hydrogen transportation systems that lack sufficient granularity for techno-economic and GHG emissions analysis.”² More recent studies are just now beginning to provide evidence that is “...informative for government agencies developing policies.”³ Further, putting in place the physical infrastructure needed to support the sharp increase in demand for these new resources— based on time required for determining where best to locate resources, overcoming local zoning and property rights hurdles for pipeline transportation of hydrogen and carbon, (in the case of CCS) permitting through EPA for Class VI injection wells, and supply-demand chains for raw materials that are still unreliable post-COVID—are anticipated to take longer than EPA’s first compliance dates (beginning in 2030).

EPA explains in the Proposed Rule that Inflation Reduction Act (IRA) funding and tax incentives will fuel decisions to invest in these opportunities; however, readily available funding does not address the present supply chain availability or the actual time required to obtain and place the infrastructure in operation. In the case of CCS and hydrogen, more time will be necessary to develop infrastructure resources needed to comply with the Proposed EGs. Further, the restriction on hydrogen co-firing GHG content effectively eliminates the ability to use any hydrogen supply but “green” or “pink” hydrogen.⁴ Production of “green” hydrogen from renewables will require buildout of new renewable generation resources, which will compete with electricity generation needs. In the near term, hydrogen production from renewable energy may not be the highest and best use of renewable generation assets that would otherwise displace higher emitting generation resources on the grid.

If EPA chooses to finalize a BSER based on co-firing with hydrogen, DEQ suggests that EPA set its BSER for the near-term for the hydrogen pathway based on any “qualified clean hydrogen”

² G. Di Lullo et al. Large-scale long-distance land-based hydrogen transportation systems: A comparative techno-economic and greenhouse gas emission assessment. *International Journal of Hydrogen Energy*, Volume 47, Issue 83, 2022, Pages 35293-35319, ISSN 0360-3199, <https://doi.org/10.1016/j.ijhydene.2022.08.131>

³ *Id.*

⁴ “Green” hydrogen is hydrogen produced by electrolysis of water using electricity from zero emissions renewable sources. “Pink” hydrogen is hydrogen produced by electrolysis of water using electricity from zero emissions nuclear power.

permitted to receive a tax credit under the Clean Hydrogen Production Tax Credits. EPA should include a carbon intensity-scaled formula for such a substitution in the final EGs.

DEQ also requests that EPA include a mechanism that states may include in their plans to provide a compliance extension to affected sources for CCS and hydrogen in the event the necessary infrastructure and supply chain does not develop by the EGs compliance deadlines.

C. EPA’s proposed EGs for existing coal-fired power plants are more stringent than the new source performance standards for new, modified, or reconstructed coal-fired power plants

In 2015, EPA finalized standards of performance for new coal-fired EGUs at 1400 CO₂/MWh-gross based on a CCS capture rate of 16 – 23 percent. The proposed EGs would require existing coal-fired units to comply with a more stringent standard of performance than what is required for new units. The cost to retrofit an existing coal unit is higher than including CCS infrastructure in a new build, and the existing coal-fired unit could be located in an area far from existing carbon dioxide pipelines and suitable geography for sequestration. If EPA still finds that the BSER for coal-fired EGU build-outs do not warrant revision, then BSER for new coal-fired EGUs should be a presumptively approvable standard of performance for existing long-term coal-fired EGUs.

D. DEQ recommends that EPA include biomass co-firing as a permissible compliance pathway for coal-fired units.

EPA should consider accounting for co-firing of biomass at coal units as a means of complying with standards of performance under the proposed EGs. As the overarching goal is to reduce carbon emissions, co-firing biomass would offer compliance flexibility as infrastructure for CCS is developed while also meeting the intended purpose of the proposal. DEQ requests that EPA include a carbon intensity-scaled formula for use of biomass to comply with standards of performance in the final EGs and monitoring, recordkeeping, and reporting requirements associated with accounting for the carbon dioxide sequestration of biomass used as fuel.

IV. DEQ endorses flexible compliance pathways, such as trading, averaging, and banking of compliance instruments (e.g. allowances).

DEQ encourages EPA to include averaging, trading, and banking mechanisms for compliance with the Final Rule. Averaging and trading programs would allow states and affected sources the flexibility needed to adapt to requirements outside of this rule, such as energy production goals and consumer-rate terms already in place between energy producers, integrated systems operators (ISOs), and public service commissions. The flexibility of these options will also help bridge the gap as CCS and hydrogen production and transportation infrastructure is developed to meet demand.

DEQ recommends that EPA provide the states with technical assistance, including use of EPA Clean Air Markets Division resources (or other rate base model tool, logistics similar to Acid Rain

trading) for administering trading programs. DEQ recommends EPA develop a template (or checklist) of required components for state plans that rely on averaging or trading to comply to reduce the burden on states that either develop a state-only plan or pursue an interstate trading plan. Such technical assistance and guidance would also provide a platform to streamline EPA's review of § 111(d) plans and compliance milestones.

V. The proposed EGs need a safety valve for emergency situations in which energy production necessary for public safety cannot otherwise be achieved.

While facilities strive to maintain compliance with emission guidelines and other permitting requirements, the production of energy comes with a greater responsibility to the public than does any other good produced in the U.S. In emergency situations - when heat waves roll across the entire country, wildfires threaten transmission stability, or blizzard-like conditions down critical infrastructure - the sudden increase in demand for energy can become deadly if not adequately met. This is a real-world scenario, which recently played out in the February 2021 ice storm in Texas. Utilities strive to avoid these outcomes while balancing the duty to comply with environmental regulations.

Because of the acute risk to public health and safety in the absence of reliable energy production during these events, DEQ recommends that EPA include a reliability clause in the Final EGs that would exempt operations during emergency operating procedures as declared by an ISO, state public service commission, or the equivalent from inclusion in compliance determinations with carbon dioxide standards of performance and applicability thresholds for standards of performance pursuant to the EGs.

VI. Conclusion

DEQ appreciates the opportunity to comment on the Proposed EGs. DEQ urges EPA to consider the changes suggested in these comments.