December 20, 2023

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

Re: New Source Performance Standards for GHG Emissions from New and Reconstructed EGUs, Docket ID No. EPA–HQ–OAR–2023–0072; FRL–8536–04–OAR; RIN 2060–AV09

Dear Administrator Regan:

Thank you for the opportunity to comment on the Environmental Protection Agency's (EPA's) proposal regarding new source performance standards (NSPS) for greenhouse gas (GHG) emissions from new and reconstructed electric generating units (EGUs).

The Cato Institute is a public policy research organization dedicated to the principles of individual liberty, limited government, free markets, and peace. At Cato, I am the Director of Energy and Environmental Policy Studies, and my research focuses on the economics and reliability of electricity, the role of free markets in improving the availability and affordability of energy and natural resources, and environmental regulations that impact the energy sector.

I commend you for your efforts to better understand the impacts of the EPA's power plant regulations on grid reliability.

Procedural Background

The EPA issued the original notice of proposed rulemaking (Original NPRM) in this docket on May 23, 2023, with comments due on or before August 8, 2023.[1] The EPA then issued a supplemental notice of proposed rulemaking (Supplemental NPRM) published in the Federal Register on November 20, 2023, with comments due on or before December 20, 2023. The Supplemental NPRM solicited comments on (1) reliability issues associated with

[1] Environmental Protection Agency, *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*, May 23, 2023. Available at https://www.federalregister.gov/documents/2023/05/23/2023-10141/new-source-performance-standards-for-greenhouse-gas-emissions-from-new-modified-and-reconstructed

the Original NPRM and (2) EPA's Initial Regulatory Flexibility Analysis (IRFA), which EPA undertook after publishing the Original NPRM.

Summary

The instant comment responds to (1) and (2) above and requests a new Supplemental NPRM on the impact of the Original NPRM on the cost of electricity. The EPA's choice of low-GHG hydrogen and carbon capture and storage/sequestration (CCS) as the best system of emission reduction (BSER) was arbitrary, capricious, and unsupported by the available data when it was proposed.[2] Recent developments have further eroded the justification for the EPA's proposed BSER and raised additional concerns regarding whether the EPA has adequately assessed the proposal's impacts on the cost and reliability of electricity.

I urge the EPA to reconsider its proposal and institute a new rulemaking founded on technologies that have been adequately demonstrated. It is encouraging that the EPA recognizes the wider reliability issues associated with the Original NPRM. In the Supplemental NPRM, EPA stated: "Because mechanisms to address reliability concerns are relevant to many entities in the electricity sector, we are more broadly soliciting comment on reliability issues."[3]

However, the issues with the Original NPRM are so numerous and complicated that the best path forward is for the EPA to go back to the drawing board. At the bare minimum, the EPA should improve its rulemaking by offering an objective, unbiased assessment of the reliability and cost impacts of the Original NPRM. To that end, the EPA should issue a new supplemental NPRM seeking comment on the impact of the Original NPRM on the cost of electricity. The EPA should also update its resource adequacy analysis considering the financing difficulties facing many new EGUs driven by higher interest rates.

Reliability Issues Associated with the Original NPRM

The list of stakeholders urging the EPA to exercise self-restraint includes other federal agencies and grid regulators. For example, the North American Electric Reliability Corporation (NERC) recently issued its annual Long-Term Reliability Assessment (LTRA), in which NERC explicitly expressed concern over the EPA's proposed rules, including the Original NPRM:

> Environmental regulations and energy policies that are overly rigid and lack provisions for electric grid reliability have the potential to influence

[2] Comments of Travis Fisher, et al., August 5, 2023. Available at https://www.regulations.gov/comment/EPA-HQ-OAR-2023-0072-0435

[3] Environmental Protection Agency, Supplemental Notice of Proposed Rulemaking, p. 7. Available at https://www.epa.gov/system/files/documents/2023-11/111egu_snprm.pdf

> generators to seek deactivation despite a projected resource adequacy or operating reliability risk; this can potentially jeopardiz[e] the orderly transition of the resource mix.[FN] For this reason, regulators and policymakers need to consider effects on the electric grid in their rules and policies and design provisions that safeguard grid reliability.[4]

The associated footnote reads: "The EPA is implementing, has finalized, or has proposed six rules that impact the fossil-fired generators: Coal Combustion Residuals (being implemented), revised Effluent Limitations Guidelines (proposed), revised Mercury and Air Toxics Standards (proposed), Good Neighbor Rule (finalized), Carbon Rule (proposed), and Regional Haze (being implemented)." In other words, the entity most directly charged with overseeing the reliability of the power grid in North America—NERC—says EPA's regulations jeopardize reliability by removing reliable supply from the grid.

Shutting down reliable supply is a problem on its own, but the reliability challenges of EPA rules are exacerbated by the recent growth in electricity demand. NERC's LTRA states: "Electricity peak demand and energy growth forecasts over the 10-year assessment period are higher than at any point in the past decade."[5] The result of reduced supply and increased demand is straightforward to predict: increased prices and, unfortunately, energy shortfalls at some places and times. What that means for a typical electricity consumer is a higher power bill and an increased risk of blackouts.

At the Federal Energy Regulatory Commission's (FERC's) Annual Reliability Technical Conference, stakeholders and Commissioners alike expressed concerns over the EPA's power plant regulations. Commissioner Mark Christie stated: "we're facing a load curve, a demand curve which is going up, and maybe astronomically, and we're not building the supply, or retaining the existing supply of all different types that will be there when needed, when called upon during peak times."[6] [Note: electricity demand is sometimes referred to as "load."]

A recent report by Grid Strategies emphasizes the resurgence in demand growth: "In just one year, the forecast of cumulative electricity growth over the next five years increased from 2.6% to 4.7%. Since their 2023 FERC load forecast filings, several major utilities have further increased near-term electricity demand forecasts." The report continues: "It's worrisome that a resurgent American manufacturing sector may face headwinds from the

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[4] North American Electric Reliability Corporation, *2023 Long-Term Reliability Assessment*, December 2023, p 10. Available at https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2023.pdf

[5] *Id.*

[6] Federal Energy Regulatory Commission, *Transcript of the November 9, 2023 Annual Reliability Technical Conference*, p. 15. Available at https://www.ferc.gov/media/transcript-docket-no-ad23-9-000

limited ability of the nation's electricity systems to respond."[7] It is indeed worrisome that the EPA continues to tighten its EGU emissions regulations in the face of tight supply and growing demand.

Regarding mechanisms to ensure reliability, the EPA does not offer reliability safety valves in its Original NPRM. Instead, in practice, such safety valves would be crafted as needed by other agencies. For example, FERC-jurisdictional contracts such as the "reliability must run" (RMR) contracts are designed to ensure resource adequacy even when EPA regulations make a particular resource uneconomic to operate.[8]

In the longer term, FERC could face additional pressure to socialize the cost of the transmission facilities needed to support remotely sited wind or solar facilities boosted by the EPA proposal. Again, the Original NPRM sweeps complications such as RMR contracts and transmission expansion under the proverbial rug and leaves it to others to clean up any mess left behind by the EPA's rulemaking.

The Department of Energy (DOE) also has authority under Section 202c of the Federal Power Act to compel needed units to run despite non-compliance with EPA regulations.[9] DOE's use of 202c orders is meant to be limited to emergency situations. However, a rushed EPA rule that would force the closure of many units that are needed for reliability could trigger a wave of 202c orders.

The irony of this situation is that it would mirror the much-maligned proposal by the DOE in 2017 under President Trump—rejected by FERC—to uniformly apply a cost recovery mechanism to existing fossil EGUs needed for "grid resiliency."[10] The 2017 DOE proposal was roundly criticized because it would increase costs for consumers and undermine electricity market dynamics.[11] By triggering a wave of RMR contracts or 202c orders, the EPA's rulemaking could have the same impacts. The key difference is that FERC does not have the authority to reject EPA's rulemaking.

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[7] Grid Strategies, *The Era of Flat Power Demand is Over*, December 2023. Available at: https://gridstrategiesllc.com/wp-content/uploads/2023/12/National-Load-Growth-Report-2023.pdf

[8] California ISO, *Decision on conditional approval to extend existing reliability must-run contracts for 2023*, August 31, 2022. Available at https://www.caiso.com/Documents/DecisiononConditionalApprovaltoExtendReliabilityMust-RunContracts-Presentation-Aug2022.pdf

[9] Department of Energy, *DOE's Use of Federal Power Act Emergency Authority*. Available at https://www.energy.gov/ceser/does-use-federal-power-act-emergency-authority

[10] Department of Energy, *Secretary Perry Urges FERC to Take Swift Action to Address Threats to Grid Resiliency*, September 29, 2017. Available at https://www.energy.gov/articles/secretary-perry-urges-ferc-take-swift-action-address-threats-grid-resiliency

[11] Natural Resources Defense Council, *DOE Proposes Outrageous, Massive Coal and Nuclear Bailout*, September 29, 2017. Available at https://www.nrdc.org/bio/miles-farmer/doe-proposes-outrageous-massive-coal-and-nuclear-bailout

Further Erosion of the BSER

EPA's broad solicitation is appropriate given the changes that have taken place since August 8, 2023, when the comment period closed on the Original NPRM. In addition to the reliability concerns outlined above, more information has come to light regarding the feasibility of the EPA's choice of low-GHG hydrogen and CCS as the BSER in the Original NPRM. To be clear, the BSER was arbitrary, capricious, and unsupported by the available data when it was proposed, and recent developments have only reinforced the arbitrary and capricious nature of EPA's rulemaking.

The EPA should formulate a new BSER based on technologies that are adequately demonstrated, as required by the Clean Air Act. For example, recent cancellations of carbon dioxide pipelines like the Heartland Greenway Pipeline System, supported by Navigator CO2 Ventures, raise doubts about the feasibility of CCS as part of the BSER. S&P Global reported that "Navigator chose to cancel its project, citing 'the unpredictable nature of the regulatory and government processes.'"[12] Such regulatory uncertainty is par for the course when building linear infrastructure in the United States, and the EPA should amend its proposed BSER to account for that reality. In other words, CCS depends on a new pipeline network that will be too difficult to build in the timeframe proposed by the EPA to be considered part of the BSER.

Recent developments from the hydrogen industry also undermine the EPA's BSER. *Power Engineering* magazine reported, "Citing delays and increasing uncertainty over implementation rules guiding the use of the 45V hydrogen production tax credit provisions of the Inflation Reduction Act (IRA) and an inability to reach final commercial terms with project developers, CNX Resources Corporation announced it has ended coordination with the Adams Fork project and is evaluating several viable alternative sites in southern West Virginia for clean hydrogen projects."[13] The forthcoming IRA guidance on 45V subsidies could make or break the BSER.

The fate of the IRA's broader suite of energy subsidies is yet another variable not fully considered by the EPA in establishing the BSER. If subsidies for CCS and low-GHG hydrogen (including subsidies for the low-GHG resources required to create low-GHG hydrogen) are necessary for their buildout, the EPA should be prepared to withdraw its rulemaking when the IRA subsidies are ultimately curtailed. Given the enormity of the subsidies involved—

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[12] S&P Global, *Cancellation of Navigator CO2 pipeline raises critical issues for several industries*, October 25, 2023. Available at https://www.spglobal.com/commodityinsights/en/market-insights/blogs/energy-transition/102523-navigator-co2-carbon-capture-heartland-greenway-pipeline-cancellation

[13] Power Engineering, *Tax credit uncertainty leads to hydrogen hub dropout*, December 18, 2023. Available at https://www.power-eng.com/hydrogen/tax-credit-uncertainty-leads-to-hydrogen-hub-dropout/

with a total price tag in the range of $3 trillion—some degree of repeal or reform is inevitable.[14]

Further, to the extent that the EPA's analysis of resource adequacy under the Original NPRM relied on the growth of the offshore wind industry, the analysis should be updated. For example, as reported by Reuters, "Orsted, the world's largest offshore wind developer, said it would stop developing its 2,248-megawatt (MW) Ocean Wind 1 and 2 projects in New Jersey."[15] The EPA should revisit its reliability and resource adequacy assumptions given the change in outlook for the offshore wind industry in the United States.

Tony Campbell, President and CEO of East Kentucky Power Cooperative, made a concise plea that I support: "EPA's proposal is unlawful and unworkable. The only way that the proposed rule will not have detrimental effects on the electric reliability, is for EPA to withdraw it…. EPA's proposal is not salvageable. The real question is whether reliability might be salvageable."[16] The EPA should withdraw its proposal before it does irreversible harm to the reliability of the North American electric grid.

EPA's Initial Regulatory Flexibility Analysis

In its IRFA, EPA finds no significant impact on a substantial number of small entities. I disagree with that finding. As an initial matter, EPA claims its 111d rule under the Clean Air Act (part of the instant docket but covering existing units) will have no direct impact on small entities. Instead, direct impacts of the 111d portion of the rulemaking would come from state plans following EPA guidelines, or from a federal implementation plan that is yet to be drafted. As the EPA explains:

> The scope of the IRFA is limited to the proposed new source performance standards. The impacts of the proposed emission guidelines for large, frequently used existing fossil fuel-fired stationary combustion turbines and existing fossil fuel-fired steam generating units are not evaluated here because the emission guidelines do not place explicit requirements on the regulated industry. Those impacts will be evaluated pursuant to the development of a Federal plan.[17]

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[14] Cato Institute, *The Inflation Reduction Act's Energy Subsidies Are More Expensive Than You Think*, September 5, 2023. Available at https://www.cato.org/blog/iras-energy-subsidies-are-more-expensive-you-think

[15] Reuters, *Orsted hit by up to $5.6 billion impairment on halted US projects*, November 1, 2023. Available at https://www.reuters.com/business/energy/orsted-cease-development-some-us-offshore-wind-projects-2023-10-31/

[16] Federal Energy Regulatory Commission, *Transcript of the November 9, 2023 Annual Reliability Technical Conference*, p. 195. Available at https://www.ferc.gov/media/transcript-docket-no-ad23-9-000

[17] Environmental Protection Agency, *Initial Regulatory Flexibility Analysis*, October 2023, p. 2. Available at https://www.epa.gov/system/files/documents/2023-11/caa-111-ghgs-irfa.pdf

However, the EPA has cherry-picked in the IRFA when to include the impacts on existing units versus new units. For example, the EPA says in the IRFA that market revenues will increase for new natural gas combustion turbine (NGCT) owners under the EPA's policy proposal, in part because existing coal units will retire and wholesale prices will go up. EPA calls this a negative compliance cost. The IRFA states:

> Under the rule, some units will generate less electricity (and thus revenues), and **this impact will be lessened on these entities by the projected increase in electricity prices under the rule**. [emphasis added] …
>
> Under the compliance modeling for the proposal, NGCT additions and dispatch are higher as a result of reductions in existing coal-fired EGU capacity and generation. As a result, economic NGCT additions experience negative compliance costs in 2035.

This is a grave analytical flaw. EPA cannot simultaneously claim that (1) existing coal units will close because of its rulemaking (taking 111d into account for IRFA benefits to owners of NGCT units) and (2) the projected closures of existing plants are beyond the scope of the IRFA because they would be caused more directly by state plans (not taking 111d into account for IRFA costs to owners of existing units).

The EPA should choose a regulatory scope in the IRFA and stick with it. Either existing units are within the scope of the IRFA or they're not—EPA cannot choose to account for existing units when it comes to counting benefits ("negative compliance costs") but ignore them when it comes to counting costs.

Further, the EPA's analysis regarding increased revenue for owners of combustion turbines does not square with its finding in the Regulatory Impact Analysis that the EPA "expects the proposal would increase retail electricity prices by 0.2% in 2035 on average."[18] Again, the EPA is cherry-picking when to include existing units in its analysis and when to apply different assumptions about electricity prices. Generally, wholesale price increases translate to retail price increases. The inverse—wholesale price decreases—do not necessarily translate into retail price decreases.[19] The EPA should reconcile these analytical flaws before moving forward with a final rule.

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[18] Utility Dive, *EPA proposes power plant greenhouse gas limits with carbon capture, 'green' hydrogen main compliance options*, May 11, 2023. Available at https://www.utilitydive.com/news/epa-ghg-carbon-emission-limits-power-plants-carbon-capture-hydrogen/650039/

[19] Utility Dive, *Groups ask Congress for first-of-its-kind cost analysis of RTOs amid market expansion debate*, July 8, 2021. Available at https://www.utilitydive.com/news/groups-ask-congress-for-first-of-its-kind-cost-analysis-of-rtos-amid-market/602995/

Request for Additional Supplemental NPRM

EPA's Supplemental NPRM regarding reliability impacts is appropriate. Following the same logic—recognizing that the EPA's analysis of the Original NPRM is incomplete and seeking to remedy substantial omissions—the EPA should open a new Supplemental NPRM focused on the cost of its proposal and the impacts on electricity prices. A new Supplemental NPRM focused on cost would help EPA make up for the lack of serious analysis of the impact of its rulemaking on the retail price of electricity. The fact that the EPA's models show only de minimis impacts of the rule on the cost of electricity (as cited above, a mere 0.2% increase overall by 2035) means its models do not reflect reality and should be revisited.

The Original NPRM would significantly increase the cost of electricity. Unfortunately, the EPA's modeling of the cost of electricity does not follow the real-world mechanics of the electricity system, and such a departure from reality enables the EPA to claim that electricity prices will remain nearly unchanged. For example, the EPA models the cost of electricity in competitive markets as a weighted average of the marginal cost of electricity suppliers, but that is not how wholesale markets work.

Wholesale electricity markets pay all resources the marginal cost of the highest-marginal-cost resource needed in each interval. Without a model that reflects the highest marginal cost resources needed, interval-by-interval, the EPA cannot claim to understand what the cost of electricity will be. This, again, is a fatal flaw in the EPA's analysis and deserves a new Supplemental NPRM dedicated to modeling the cost of electricity under the EPA's proposal. If combustion turbines fueled by low-GHG hydrogen are the marginal resource, wholesale electricity prices will necessarily skyrocket.

Thank you for the opportunity to comment on this important issue. I would be happy to answer any questions you may have at tfisher@cato.org.

Sincerely,

/s/

Travis Fisher
Director, Energy and Environmental Policy Studies
Cato Institute