August 7, 2025

EPA Office of Air and Radiation

Docket No. EPA–HQ–OAR–2025–0124

Re: Repeal of Greenhouse Gas Emissions Standards for Fossil Fuel-Fired Electric Generating Units, Alternative Proposal

Administrator Zeldin:

Please find attached joint legal comments from Center for Biological Diversity, Clean Air Task Force, Earthjustice, Environmental Defense Fund, Natural Resources Defense Council, and Sierra Club on the alternative proposal offered for comment in "Repeal of Greenhouse Gas Emissions Standards for Fossil Fuel-Fired Electric Generating Units," 90 Fed. Reg. 25,752 (June 17, 2025). Our organizations strongly urge EPA to maintain the carbon pollution standards issued in 2024 and withdraw this proposed repeal. This comment addresses legal and factual deficiencies in EPA's alternative proposal to repeal select standards of performance and emission guideline requirements based on unreasonable and unsupported reversals of prior determinations of the best system of emission reduction for those sources.

Respectfully submitted,

Jason Rylander
Climate Law Institute
Center for Biological Diversity

Noha Haggag
Tomás Carbonell
Environmental Defense Fund

Ann Weeks
Frank Sturges
Alan Masinter
Clean Air Task Force

Meredith Hankins
David Doniger
Amanda Levin
Yuqi Zhu
Natural Resources Defense Council

Hana V. Vizcarra
Earthjustice

Andres Restrepo
Sierra Club

Table of Contents

I. Introduction

Signatory environmental and public health organizations submit these comments in opposition to EPA's alternative proposal to repeal select standards of performance and emission guideline requirements based on unreasonable and unsupported reversals of prior determinations of the best system of emission reduction (BSER) for those sources.

The following comments will describe the legal and factual shortcomings of the alternative proposal. First, we demonstrate that EPA has a legal mandate under Section 111 of the Clean Air Act to set standards for emissions of greenhouse gases from the power sector, which it would leave unfulfilled by repealing the 2024 Carbon Pollution Standards (or CPS).[1] Second, we show how EPA's proposed repeal flouts basic requirements of administrative law. Third, we demonstrate that EPA arbitrarily proposes to repeal its 2024 Rule without even a thought toward alternatives. Fourth, we show that EPA's vague justifications for repeal of the co-firing-based 2024 standards fall far short of overcoming its prior rulemaking record. Fifth, we show that EPA's even thinner justification for repeal of the 2024 standards for oil- and gas-fired steam generators is entirely inadequate. Sixth, and finally, we demonstrate that EPA must disclose and describe any use of Artificial Intelligence in this proposal.

II. EPA's repeal of its 2024 Rule leaves unfulfilled its legal mandate to set standards for greenhouse gases from the power sector.

EPA has an affirmative mandate to regulate greenhouse gas pollution from power plants (or electric generating units (EGUs)), which are the largest stationary source of climate pollution (among other pollutants) in the United States.[2] Section 111(b) of the Clean Air Act requires that EPA publish a list of categories of stationary sources that, in EPA's judgment, "causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. § 7411(b)(1)(A). In 1971 and 1979, EPA listed power sector sources, specifically fossil-fueled steam generators and stationary gas turbines, as source categories that contribute significantly to dangerous air pollution.[3] Courts and EPA have

---

[1] EPA, 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, 89 Fed. Reg. 39,798 (May 9, 2024).

[2] Comments of Environmental NGOs on Repeal of Greenhouse Gas Emissions Standards for Fossil Fuel-Fired Electric Generating Units, Primary Proposal (filed to this docket Aug. 7, 2025) (hereinafter "NGOs Primary Proposal Comments").

[3] Air Pollution Prevention and Control: List of Categories of Stationary Sources, 36 Fed. Reg. 5931 (Mar. 31, 1971); Standards of Performance for New Stationary Sources, 36 Fed. Reg. 24,876, 24,878-24,880 (Dec. 23, 1971). Air Pollution Prevention and Control: Addition to the List of Categories of Stationary Sources, 42 Fed. Reg. 53,657 (Oct. 3, 1977); New Stationary

repeatedly affirmed that greenhouse gases are air pollutants that endanger public health and welfare and that these harms have only intensified since EPA's initial endangerment finding.[4] *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007); *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 424 (2011); *Util. Air Regulatory Grp. v. EPA*, 573 U.S. 302, 333-34 (2014). Accordingly, EPA is required to establish Section 111 standards for greenhouse gas pollution from power plants to protect public health and welfare.

Pursuant to Section 111, EPA must promulgate emissions standards that:

> reflect[] the ***degree of emission limitation achievable*** through the application of the ***best system of emission reduction*** which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been ***adequately demonstrated***.

42 U.S.C. § 7411(a)(1), (b)(1) (emphasis added);[5] *see also Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973) ("It is the system which must be adequately demonstrated and the standard which must be achievable."). The Clean Air Act further requires that EPA promulgate emission guidelines for existing sources in categories listed under Section 111(b). *Id.* § 7411(d)(1) (excluding certain pollutants that are regulated under other sections of the Clean Air Act).

An "adequately demonstrated" system is "one which has been shown to be reasonably reliable, reasonably efficient, and which can reasonably be expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way." *Essex*, 486 F.2d at 433. An "achievable" standard "need not necessarily be routinely achieved within the industry prior to its adoption," although it cannot be "purely theoretical or experimental." *Essex*, 486 F.2d at 433-34; *see also Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391-92, 401-02 (D.C. Cir. 1973) (allowing for reasonable "projection[s]" and "extrapolations"); *Lignite Energy Council v. EPA*, 198 F.3d 930, 934 (D.C. Cir. 1999) ("extrapolat[ing]" from performance in other industries).

Sources Performance Standards; Electric Utility Steam Generating Units, 44 Fed. Reg. 33,580 (June 11, 1979).

[4] *See* NGOs Primary Proposal Comments, Part II.A.

[5] Among other things, the requirement to consider energy requirements may include impact to the electricity system, but this must be weighed in balance with environmental benefit. *American Elec. Power Co. v. Connecticut*, 564 U.S. 410, 427 (2011) ("Along with the environmental benefit potentially achievable, our Nation's energy needs and the possibility of economic disruption must weigh in the balance"). However, as detailed in separate comments, these considerations cannot be part of EPA's determination of significant contribution for source categories under Section 111. *See* NGOs Primary Proposal Comments, Part III.

Congress intended that Section 111 standards "provide an incentive for industries to work toward constant improvement in techniques for preventing and controlling emissions from stationary sources," S. Rep. No. 91-1196, at 17 (1970), ("[Section 111] sought to assure the use of available technology and to stimulate the development of new technology."); 89 Fed. Reg. 39,798, 39,830-32 (May 9, 2024) (discussing history). The D.C. Circuit has recognized this intent. *See Sierra Club v. Costle,* 657 F.2d 298, 346-47, 364 (D.C. Cir. 1981); *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973) (same). EPA has long employed Section 111 to promulgate standards that drive deployment and further development of technology that, while adequately demonstrated, is not yet in wide use.[6]

In the 2024 Carbon Pollution Standards (or CPS), EPA fulfilled its duty to promulgate Section 111 standards for greenhouse gas pollution from new combustion turbines (which are mostly gas-fired) and existing steam-generating EGUs (which are mostly coal-fired). 89 Fed. Reg. at 39,798-39,802. In light of the statute, legislative history, agency practice, public comment, and an extensive and strong record, EPA concluded that the "best system of emission reduction" for new baseload gas plants is 90-percent carbon capture and sequestration (CCS), and separately, 40-percent gas co-firing and 90-percent CCS and for existing coal plants retiring after January 1, 2032, and January 1, 2039, respectively. *Id.* at 39,801-02. EPA assembled an extensive and strong record to support the chosen technology systems and assessed what standard is achievable with those technologies. *See, e.g.*, *id.* at 39,916-39,952 (determination of the BSER for stationary combustion turbines); *id.* at 39,845-39,896 (rationale for the BSERs for coal-fired steam generating units). EPA's record included detailed power sector dispatch modeling, a detailed assessment of costs, benefits, energy and lead time requirements, and other economic impacts.

III. EPA has failed to abide by administrative law requirements governing agency policy changes.

Rulemaking under Section 111 is governed by the Clean Air Act and basic principles of administrative law. *See* 42 U.S.C. § 7607(d)(9); 5 U.S.C. § 706(1); *Catawba County v. EPA*, 571 F.3d 20, 41 (D.C. Cir. 2009) (discussing Clean Air Act and Administrative Procedure Act review standards). Among other requirements, the Clean Air Act and Administrative Procedure Act

---

[6] *See* Dena Adler and Andrew Stawasz, Inst. for Policy Integrity, *Defining* "*Adequately Demonstrated:" EPA's Long History of Forward-Looking Regulations under Section 111 of the Clean Air Act* at 5-8 (2024) https://policyintegrity.org/files/publications/EPA's_Long_History_of_Forward-Looking_Standards_Under_Section_111_of_the_Clean_Air_Act_Policy_Brief.pdf; Larry Parker and James E. McCarthy, Congressional Research Service, *Climate Change: Potential Regulation of Stationary Greenhouse Gas Sources Under the Clean Air Act* at 17 (2009) ("It is an understatement to say that the new source performance standards promulgated by the EPA were technology-forcing." (quoting Donald Shattuck, et al., *A History of Flue Gas Desulfurization (FGD)—The Early Years*, UE Technical Paper (2007))).

prohibit EPA from finalizing a rule that is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law," "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right," or "without observance of procedure required by law." 42 U.S.C. § 7607(d)(9); 5 U.S.C. § 706(2)(A). An agency must "articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'" *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). And although an administration may have policy preferences that motivate its actions, an agency action must not be based on pretext. *Dep't of Commerce v. New York*, 588 U.S. 752, 780-85 (2019). Each agency action must be "sustained on the grounds upon which that agency acted." *SEC v. Chenery Corp.*, 332 U.S. 194, 196 (1947) ("[A] simple but fundamental rule of administrative law" is that a Court may not "affirm the administrative action by substituting what it considers to be a more adequate or proper basis.").

These requirements apply to decisions to modify or repeal existing regulations such as the 2024 Carbon Pollution Standards. *See FCC v. Fox Television Stations*, 556 U.S. 502, 514-15 (2009); *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1038 (D.C. Cir. 2012). An agency seeking to repeal existing policy must acknowledge the change in policy and ensure that the new policy is itself consistent with the governing statute. *See Fox*, 556 U.S. at 514-15 (new policy must be "permissible under the statute" and agency must "display awareness that it is changing position," and show that there are "good reasons" for the new policy); *Verizon v. FCC*, 740 F.3d 623, 636 (D.C. Cir. 2014) (agency must "acknowledge" and "explain the reasons for a changed interpretation"). The agency must provide a "reasoned analysis for the change beyond that which may be required when an agency does not act in the first instance." *State Farm*, 463 U.S. at 42 (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)); *see also Pub. Citizen v. Steed*, 733 F.2d 93, 98 (D.C. Cir. 1984). The agency must also ensure that the new policy is supported by record evidence, "based upon a consideration of the relevant factors,"[7] and must provide a more detailed justification when "disregarding facts and circumstances that underlay" the prior rule.[8] Agencies cannot repeal first and analyze later – they must provide a

[7] *See State Farm*, 463 U.S. at 43 (agency decision must be "based on a consideration of the relevant factors" and agency cannot have "relied on factors which Congress has not intended it to consider") (quoting *Bowman Transportation, Inc. v. Arkansas-Best Freight Sys. Inc*., 419 U.S. 281, 286 (1974)); *Pub. Citizen v. Fed. Motor Carrier Safety Admin*., 374 F.3d 1209 (D.C. Cir. 2004); 42 U.S.C. § 7607(d)(9).

[8] *Fox TV*, 556 U.S. at 515. An agency acts arbitrarily when it takes action that is not supported by substantial evidence. *E.g., Cablevision Sys. Corp. v. FCC*, 597 F.3d 1306, 1310 (D.C. Cir. 2010); *Florida Gas Transmission Co. v. FERC*, 604 F.3d 636, 639 (D.C. Cir. 2010); *Ass'n of Data Processing Serv. Orgs. v. Bd. of Governors*, 745 F.2d 677, 683-84 (D.C. Cir. 1984); *Fox TV*, 556 U.S. at 516 ("when . . . [a] new policy rests upon factual findings that contradict those which underlay its prior policy" agency must provide "a more detailed justification than what would suffice for a new policy created on a blank slate"; agency must supply adequate grounds "for

justification for suspending a rule "before engaging in a search for further evidence." *State Farm*, 463 U.S. at 51 (emphasis added); *see also Pub. Citizen*, 733 F.2d at 98 (agency's decision to suspend its program while it "further studied" an alleged problem with the program was arbitrary and capricious). As part of its rulemaking process, the agency must consider alternatives reflected in the prior rule's record and raised by commenters.[9]

In the 2024 Carbon Pollution Standards, EPA assembled an extensive factual record to support its standards for new gas-fired power plants and existing coal plants. EPA's record included detailed up-to-date modeling and a regulatory impact analysis that assessed costs, benefits (both climate and health), and other economic impacts.[10] As discussed in Parts V and VI below, EPA's proposed repeal fails to acknowledge the robust record underpinning the 2024 Rule or provide legally required more detailed justifications where it contradicts the facts and circumstances of that rule.

IV. EPA has unlawfully failed to consider alternatives.

Given EPA's legal mandate to promulgate greenhouse gas standards for power plants and principles of administrative law, EPA's partial repeal of the Carbon Pollution Standards without consideration of alternatives is unlawful. When promulgating a standard of performance, EPA must explain why the new standard is the "best" in consideration of the factors set forth in Section 111. *See, e.g.*, *State Farm* at 48 ("We have frequently reiterated that an agency must cogently explain why it has exercised its discretion in a given manner . . . ."). Agencies are required to consider "'significant and viable and obvious alternatives'" to their proposed action. *Dist. Hosp. Partners, L.P. v. Burwell*, 786 F.3d 46, 59 (D.C. Cir. 2015); *see Spirit Airlines, Inc. v. DOT*, 997 F.3d 1247, 1255 (D.C. Cir. 2021) ("[T]he failure of an agency to consider obvious alternatives has led uniformly to reversal.") (internal quotations omitted); *Ky. Mun. Energy Agency v. FERC,* 45 F.4th 162, 188 (D.C. Cir. 2022) (finding FERC's lack of consideration of an alternative "amounts to failure of reasoned decisionmaking"). In order to determine the "best" system of emission reduction, EPA must consider alternatives and explain why EPA's newly chosen system is in fact the *best* system. *Cf. Nat'l Hells Canyon Ass'n v. Fed. Power Comm'n*,

---

disregarding facts and circumstances that underlay or were engendered by" prior rule); *id.* at 537 (Kennedy, J., concurring); *Pub. Citizen*, 733 F.2d at 98 (agency must "'cogently explain'" basis for suspending rule) (quoting *State Farm*, 463 U.S. at 48).

[9] *Infra*, Part IV.

[10] EPA, Analysis of the Final Greenhouse Gas Standards and Guidelines: Power Sector Modeling, https://www.epa.gov/power-sector-modeling/analysis-final-greenhouse-gas-standards-and-guidelines; EPA, Regulatory Impact Analysis for the 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 (April 2024), Doc. ID No. EPA-HQ-OAR-2023-0072-8913 (hereinafter "2024 CPS RIA").

237 F.2d 777, 784 (D.C. Cir. 1956) (In the context of the Federal Power Act, "the word 'best' is of course superlative and suggests comparison of two or more applications for licenses under § 4(e)."). Courts have repeatedly affirmed the need to consider alternatives, particularly where an agency is reversing a prior action.[11] Moreover, an agency cannot broadly invoke the alleged illegality of one aspect of a regulation to justify its repeal of the entire regulation, especially where the agency has viable alternatives. *See Department of Homeland Sec. v. Regents of the Univ. of Cal*., 591 U.S. 1, 28-31 (2020).

Section 111 requires EPA to examine the source category in question, and then set a standard in light of the evidence supporting which system of emission reduction is the "best" that has been "adequately demonstrated." 42 U.S.C. § 7411(a)(1). Section 111 is intended to cover a wide range of pollutants and source categories, and Congress drafted it such that EPA could most effectively set standards and reduce pollution using the "best" measures, so long as the standards are "achievable" and the best system of emission reduction is "adequately demonstrated," accounting for "cost," "energy requirements," and other factors. *Id.* As explained further in Parts V and VI below, EPA's proposal falls far short of showing that the repeal performed this statutorily required analysis. EPA's decision to repeal standards without considering alternatives is arbitrary and capricious.

EPA's proffered rationale for refusing to consider alternatives – if it can be called a rationale – is also inadequate and arbitrary. The agency repeatedly asserts that alternatives are "outside the scope" of the present rulemaking. 90 Fed. Reg. at 25,773, 25,775. Yet this is not a case in which an agency declines to reopen a decision already made. *Edison Elec. Inst. v. EPA*, 996 F.2d 326, 332 (D.C. Cir. 1993). Nor has EPA argued that it will consider alternatives in a subsequent rulemaking, which may be appropriate where an agency is developing a regulation from a blank

[11] *State Farm*, 463 U.S. at 51 (finding that NHTSA had arbitrarily failed to explain its rejection of option requiring airbags despite its prior finding "that airbags are an effective and cost-beneficial life-saving technology"); *Pub. Citizen v. Steed*, 733 F.2d 93, 100 (D.C. Cir. 1984) (setting aside suspension of rule because NHTSA "failed to explain why alternatives, which the rulemaking record indicates were available to the agency, could not correct" problem agency relied on as basis for suspending rule); *Int'l Ladies' Garment Workers' Union v. Donovan*, 722 F.2d 795, 816 (D.C. Cir. 1983) (agency impermissibly failed to consider alternatives to repeal "raised in [the] original notice and the comments"); *Office of Commc'n of United Church of Christ v. FCC*, 707 F.2d 1413, 1439 (D.C. Cir. 1983) (agency improperly eliminated programming logs requirements without giving due consideration to the benefits of retaining a modified form of logs); *Delaware Dept. of Nat. Res. and Envtl. Control v. EPA*, 785 F.3d 1 (D.C. Cir. 2015) ("alternative way of achieving EPA's objective . . . should have been addressed and adequate reasons given for its abandonment"); *Shieldalloy Metallurgical Corp. v. NRC*, 624 F.3d 489 (D.C. Cir. 2010) ("[A]gencies must evaluate parties' proposals of 'significant and viable' alternatives.") (citing *Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486, 1511 n. 54 (D.C. Cir. 1984)).

slate.[12] Rather, putting the "scope" of the rulemaking aside (because alternatives between the starting point and the end point are clearly within scope), EPA has simply declared that it will not consider alternatives, full stop. This decision is at least arbitrary – and it is arguably pretextual because that decision "cannot be adequately explained in terms of" scope. *Dep't of Commerce*, 588 U.S. at 783.

To illustrate the value of truly considering alternatives, in the limited time available during this comment period commenters conducted modeling of alternative scenarios that could address the primary criticisms outlined in the repeal proposal. To conduct this modeling, commenters utilized FACETS (the Framework for Analysis of Climate-Energy-Technology Systems), a highly detailed, technologically realistic model of the U.S. energy system.[13] Like IPM, FACETS is a capacity deployment model that allows the user to assess the impact of different economic and policy conditions and constraints on the electric system to assess the energy, environmental, and economic impacts. It is particularly adept at scenario analysis allowing for modification of multiple, multi-pronged assumptions to assess measures in the context of technology, market, and policy uncertainties. In the technology-specific sections below and elsewhere, we share results from this modeling that show generally that extending timelines preserves emission reductions at lower cost than the CPS, and that standards based on lower capture rates result in similar emission reductions at similar costs. *See* Part V.E. below (discussing co-firing alternative scenarios); *see also* NGOs Comments on CCS Parts VIII and IX.D.[14]

V. EPA's repeal of co-firing-based standards for coal-fired steam generating units is unsubstantiated and contrary to its prior record.

Fifteen months ago, EPA finalized greenhouse gas emissions standards for existing coal-fired steam generating units that plan to retire between January 1, 2032 and January 1, 2039. The standard is based on a BSER involving 40 percent natural gas co-firing, which achieves a 16 percent reduction in greenhouse gas emissions. In developing this standard, EPA conducted extensive analysis of the engineering requirements, technical feasibility, cost-effectiveness,

[12] *E.g.*, 89 Fed. Reg. at 40,012 ("The adjusted scope of these actions also provides additional time for the EPA to consult with a broad range of stakeholders, including grid operators, to deliberate and determine the best way to address emissions from existing gas turbines while respecting their contribution to electric reliability in the foreseeable future.").

[13] *See* Memorandum, FACETS Energy System Modeling (Aug. 6, 2025), attached.

[14] Comments of Clean Air Task Force and Natural Resources Defense Council on Repeal of Greenhouse Gas Emissions Standards for Fossil Fuel-Fired Electric Generating Units (filed to this docket Aug. 7, 2025).

pipeline access and capacity, plant location, development timelines, projected emission reductions, and energy impacts.[15]

EPA found that 29 coal units are already co-firing at 40 percent natural gas, 65 percent of existing coal-fired units have access to a natural gas pipeline, and, since 2011, 100 coal-fired units have fully converted to another fuel – most commonly natural gas.[16] Even for plants requiring a new pipeline connection, most would need less than 15 miles of additional infrastructure to access the existing 3 million miles of natural gas pipelines. 89 Fed. Reg. at 39,892-93. EPA also concluded that co-firing in this subcategory of plants would not have significant adverse consequences related to energy requirements. *Id*. at 39,895. Industry has already begun planning for units to meet the co-firing standard,[17] further supporting EPA's conclusion from 2024 that co-firing is reasonable.

In this proposal, EPA entirely fails to rebut this robust record, instead relying entirely on vague speculation and unsupported conclusions as the purported basis of its repeal of the co-firing-based standard. *See* 90 Fed. Reg. at 25,773-74. While the proposal claims that natural gas use to meet the standard might cause serious energy impacts, it offers no credible evidence to support that claim. Similarly, and as explained below, each of the proposal's arguments falls short – either because it is factually incorrect or unsubstantiated (or both), and none of EPA's arguments warrants dismantling a standard grounded in extensive analysis and demonstrated feasibility. In short, EPA fails adequately to support its repeal proposal for the co-firing-based standard.

In addition, EPA's proposal is entirely based on arguments regarding efficiency, natural gas supply, pipeline buildout, and arguments around generation-shifting. It does not consider costs, emission reductions, or any other factors relevant under Section 111. While we are not providing new information or comment on issues beyond those that EPA has raised in its proposal, EPA's 2024 final rule contains extensive demonstration of how co-firing met the full set of Section 111 criteria, including achieving adequate emission reductions, reasonable costs, and a lack of significant adverse energy or environmental impacts. If EPA were to finalize a repeal on any

---

[15] *See generally* 89 Fed. Reg. at 39,892-96; EPA, Greenhouse Gas Mitigation Measures for Steam Generating Units Technical Support Document at ch. 3 (April 2024), Doc. ID No. EPA-HQ-OAR-2023-0072-9095 (hereinafter "2024 Steam TSD"); Unit-Level Cost and Reduction Estimates for Natural Gas Co-firing Final Rule, attachment to 2024 Steam TSD; ICF International, Documentation for Lateral Cost Estimation (2024), Attachment to 2024 Steam TSD; Sargent & Lundy, Natural Gas Co-firing Memo (Mar. 2023), Doc. ID No. EPA-HQ-OAR-2023-0072-0019.

[16] 2024 Steam TSD at 13-14.

[17] *See e.g.* Georgia Power 2025 Integrated Resource Plan at 63 (Jan. 2025), https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/2025-Integrated-Resource-Plan.pdf (finding co-firing pathway economic for seven units and describing plans to proceed with co-firing at these coal units).

basis other than those put forth in its proposal, it would have to provide notice and an opportunity to comment.

A. EPA's arguments about a purported gas scarcity are unsupported and do not justify repealing a co-firing standard for a small subcategory of coal-fired units.

Without making any affirmative findings, the proposal seeks to cast doubt on EPA's prior conclusion that a co-firing-based standard for this subcategory of coal-fired units would not cause significant adverse energy impacts. The proposal mischaracterizes the agency's prior positions on natural gas supply and fails to offer any evidence whatsoever that the current gas supply is inadequate to support the standard.

1. EPA fails to provide any data that would support its concerns regarding natural gas scarcity.

The current proposal rests on an assertion that EPA lacked a sufficient basis in the 2024 CPS to determine that natural gas demand under the rule would decline relative to 2019, when EPA rejected co-firing as a best system for the entire coal fleet in the Affordable Clean Energy (ACE) rule. 84 Fed. Reg. 32,520 (July 8, 2019). Yet this assertion relies on speculation – namely, that some coal unit retirements may be delayed and demand may increase – and on selective references to a single news article, without any meaningful context or quantitative analysis. These assertions do not answer the relevant question: whether there is sufficient natural gas supply to support a 40-percent co-firing standard for a small subset of medium-term coal-fired units.

EPA previously considered the gas demand issue in brief in the ACE rule, but its analysis was marked with inconsistent and outdated claims. In the ACE rule, EPA rejected co-firing as the BSER for all existing coal-fired EGUs, regardless of their operating horizon. *Id.* at 32,544-46. Yet EPA made conflicting statements – claiming both that "co-firing natural gas in coal-fired utility boilers is not the best or most efficient use of natural gas" and that it "did not intend to imply that there is now (or that there will be) a restricted supply of natural gas." *Id.* at 32,544-45. These statements cannot be reconciled: if there is ample supply to reduce emissions through co-firing at coal units without constraining the deployment of combustion turbines, then concerns about the efficiency of combusting gas in coal units (relative to combusting it in turbines) is irrelevant.

The proposed repeal is based on an inapposite comparison. A key distinction between the CPS and the ACE rule's analysis is the subcategories to which a co-firing standard would apply, which this proposed repeal completely disregards. Specifically, in the ACE rule, EPA considered co-firing across the *entire* coal fleet. 84 Fed. Reg. at 32,529. And it did not reject the approach based on natural gas supply or infrastructure limitations, but solely as a "policy" choice. Regardless, the potential gas demand under the ACE rule would have far exceeded the modest demand associated with the CPS, in which co-firing-based standards apply only to a narrow subcategory of units (i.e., those coal units that retire between 2032 and 2039).

In the CPS, EPA stated that the 2019 gas efficiency argument was informed by tighter gas supply and greater coal generation at the time. *Id.* at 39,895. The Agency determined in 2024 that the existing coal fleet had shrunk considerably since that time: from 2019 to 2024, the national conventional steam turbine coal fleet contracted by 24 percent in capacity, decreasing from **247** gigawatts (GW) to **188** GW.[18]

While EPA raises unsupported concerns about potential increases in natural gas demand, commenters find that gas demand under a 40-percent co-firing scenario would be modest compared to total U.S. gas consumption and supply (see Table 1).[19] If the full coal fleet operating in 2019 (**247** GW) – the fleet EPA was considering in ACE – had adopted 40-percent co-firing,[20] the gas demand could have approached an average of nearly 4,000 billion cubic feet (Bcf) annually – about 12.2 percent of total U.S. gas consumption in 2023.[21] In sharp contrast, sources that, under a business-as-usual (BAU) scenario, would fall in the medium-term subcategory subject to the CPS (**20** GW) would require just 500.88 Bcf per year under a 40-percent co-firing scenario – equivalent to only 1.54 percent of national gas consumption in 2023.[22]

Furthermore, under EPA modeling, the group of units that would choose to implement co-firing to comply with the CPS (**2** GW) rather than retire by 2032 represents only 0.8 percent of the 2019 coal fleet's capacity.[23] Co-firing at 40 percent for this group would require 12.6 Bcf of gas per year, a mere 0.04 percent of total U.S. gas consumption of 2023, or 0.31 percent of the

---

[18] *See* U.S. Energy Information Administration, Form EIA-860 detailed data with previous form data (EIA-860A/860B) for nameplate capacity data, https://www.eia.gov/electricity/data/eia860/ (hereinafter "U.S. EIA, Form EIA-860").

[19] *See* U.S. Energy Information Administration Form EIA-923 detailed data with previous form data (EIA-906/920) for energy consumption data, https://www.eia.gov/electricity/data/eia923/ (hereinafter "U.S. EIA, Form EIA-923").

[20] It is unclear what level of co-firing EPA was considering as the best system in the ACE rulemaking. We are assuming 40 percent as a conservative estimate.

[21] U.S. Energy Information Administration, *Natural Gas Explained* (Oct. 31, 2024). https://www.eia.gov/energyexplained/natural-gas/use-of-natural-gas.php (hereinafter "U.S. EIA, Natural Gas Explained").

[22] This estimate may overstate gas demand for CPS-covered units, as it is based on coal units operating in 2035 (representing 2032–2037) and 2040 (2038–2041) in the business-as-usual scenario of EPA's Integrated Planning Model (IPM), which may include units retiring after 2039 due to the model's non-annual time steps. *See* EPA, Analysis of the Final Greenhouse Gas Standards and Guidelines Power Sector Modeling (2025), https://www.epa.gov/power-sector-modeling/analysis-final-greenhouse-gas-standards-and-guidelines (hereinafter "EPA, Power Sector Modeling Analysis").

[23] *See* U.S. EIA, Form EIA-860.

projected increase in U.S. dry and liquified natural gas production from 2024 to 2030,[24] debunking any claims that the CPS rule would result in any noticeable increase in natural gas demand.

Table 1: Estimated Natural Gas Use from Co-Firing

Co-Firing Rate	Gas Use (Bcf/year)	%U.S. Power Sector Gas Use (12,930 Bcf, 2023)	% U.S. Total Gas Use (32,500 Bcf, 2023)
Policy Scenario: Coal units that would choose to comply with the CPS: **2** GW			
40%	12.60	0.10%	0.04%
BAU Scenario: Coal units operating in 2032: **73** GW			
40%	935.32	7.23%	2.88%
BAU Scenario: Coal units subject to the CPS *(retiring between 2032 and 2039)*: **20** GW			
40%	500.88	3.87%	1.54%
Coal units operating in 2019: **247** GW			
10%	990.88	7.66%	3.05%
20%	1,981.76	15.33%	6.10%
30%	2,972.64	22.99%	9.15%
40%	3,963.52	30.65%	12.20%
Coal units operating in 2024: **188** GW			
40%	2,730.92	21.12%	8.40%

Notes: Data for the 2019 and 2024 coal fleets derive from the U.S. Energy Information Administration (EIA)'s detailed generator records.[25] Policy and BAU scenario results follow EPA's analysis of the Final Greenhouse Gas Standards and Guidelines[26]. Gas consumption data are sourced from EIA.[27]

Finally, EPA lacks any reasoned basis for its claim that co-firing under the CPS would strain natural gas markets. This assertion is inconsistent with established gas supply and demand projections. According to the U.S. Energy Information Administration's Annual Energy Outlook (AEO) 2025, domestic production of liquid and dry natural gas totaled about 46,936 Bcf in 2024 and is projected to grow by 4,046 Bcf between 2024 and 2030 (see Figure 1).[28] The incremental

[24] U.S. Energy Information Administration, *Annual Energy Outlook 2025*, https://www.eia.gov/outlooks/aeo/ (hereinafter "U.S. EIA, AEO 2025").

[25] *See* U.S. EIA, Form EIA-860 and U.S. EIA, Form EIA-923.

[26] *See* EPA, Power Sector Modeling Analysis.

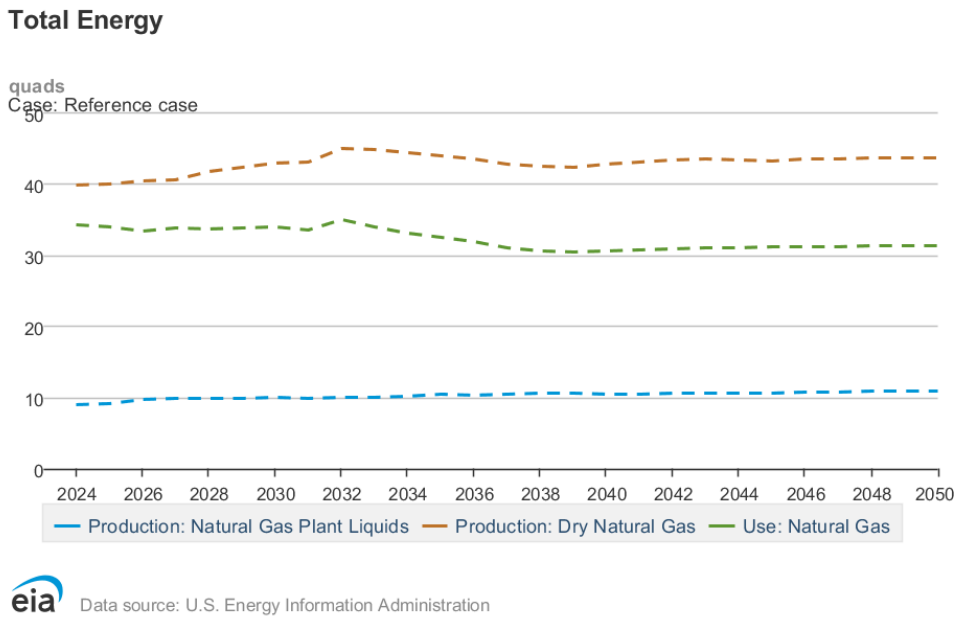
[27] *See* U.S. EIA, Natural Gas Explained.

[28] *See* U.S. EIA, AEO 2025.

gas demand from coal units subject to the CPS – 500.88 Bcf annually – would represent 1.07 percent of total U.S. gas supply in 2024.

While the market can clearly accommodate this limited demand, these units can also flexibly shift their fuel mix – relying more on coal during periods of gas scarcity or high prices, and ramping up gas use when it is more readily available. The CPS is an annual average and provides for this flexibility.[29] On the demand side, AEO 2025 projects that U.S. natural gas consumption will remain flat or decline through at least 2045 under nearly all scenarios – including the Reference case, High Economic Growth case, and High Zero-Carbon Technology Costs case – with only modest increases in the near term (see Figure 2). EPA provides no reasoned explanation for disregarding these well-established, long-term projections in its analysis.

Figure 1: Projected U.S. Natural Gas Supply and Consumption in AEO 2025

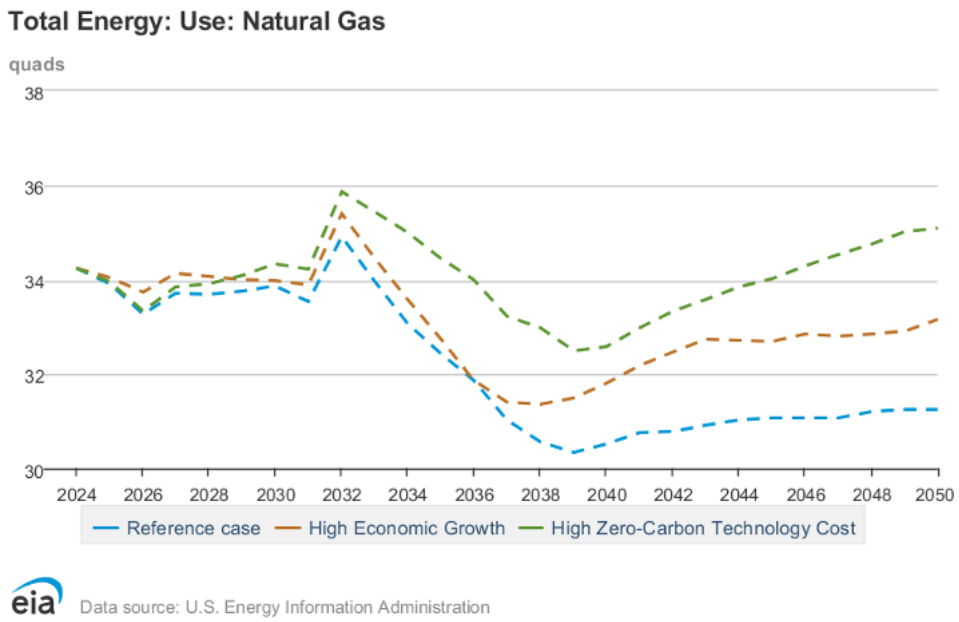


Notes: Figure sourced from the U.S. Energy Information Administration's AEO 2025.[30]

[29] Andover Technology Partners, *History of Flexible Compliance with Science-Based and Technology-Based Stationary Source Air Pollution Regulations* (Dec. 18, 2023), https://www.andovertechnology.com/wp-content/uploads/2023/12/c_23_2a_CAELP_final.pdf.

[30] *See* U.S. EIA, AEO 2025.

Figure 2: Projected U.S. Natural Gas Consumption by Scenario in AEO 2025



Notes: Figure sourced from the U.S. Energy Information Administration's AEO 2025.[31]

2. EPA's natural gas scarcity assertions are contrary to industry trends.

The increasing use of natural gas at coal-fired EGUs, with many units fully converting to natural gas, demonstrates that industry does not share EPA's concerns over natural gas supply and undermines the proposed repeal. As EPA noted in 2024, and fails to support rejecting in the current proposed repeal:

> [a]s natural gas prices have declined over the past decade, the quantity of natural gas consumed onsite by coal-fired EGUs has increased, becoming more common practice. Using reported data on monthly fuel consumption between 2015-2021, of the 565 coal-fired EGUs operating at the end of 2021, heat input basis in at least one year while also operating with annual capacity factors greater than 10 percent. Using hourly reported CO2 emission rates between 2015-2020, we can also calculate the hourly consumption of natural gas at coal-fired boilers still in operation at the end of 2021. Here we similarly observed 29 coal-fired boilers with natural gas co-firing capability of 60 percent of capacity on an hourly basis, which reflects the estimated size lateral needed to operate flexibly to deliver co-firing at 40 percent on an annual heat input basis. Lastly, many coal-fired EGUs have also opted to switch entirely to providing generation from natural gas. Between 2011

[31] *See* U.S. EIA, AEO 2025.

and 2019, over 100 coal-fired plants have been converted to other fuels, most commonly natural gas.[32]

Statements from suppliers confirm that there is ample supply. For example, Chevron's 2024 Annual Report states that the company's U.S. natural gas production has increased in each of the past three years, rising over 50 percent from 1,758 MMCFD in 2022 to 2,684 MMCFD in 2024.[33] BP's 2024 Annual Report explained that U.S. gas prices were "at the lowest price level, in real terms, in the last 25 years" and that the only thing stopping them from dropping further was that they had "declined to levels needed to incentivize power sector coal-to-gas switching and lower natural gas production."[34] This indicates that, according to BP, there was such an abundance of U.S. natural gas available that prices fell to the point that natural gas producers were lowering production and coal plants were switching to fire natural gas due to economics rather than regulation.

The proposed repeal's gesture toward gas supply concerns is contra reality and the continued co-firing and conversion of coal plants to gas and is therefore arbitrary.

B. EPA fails to demonstrate that a relative difference in efficiency between burning gas in a boiler versus a turbine would justify repealing a partial co-firing standard for a small subcategory of coal-fired units.

EPA also rejects the natural gas co-firing-based standard in the CPS because "natural gas ***may*** be more efficiently used in natural gas-fired combined cycle EGUs." 90 Fed. Reg. at 25,774 (emphasis added). Based on a substantial record in the CPS, EPA determined that co-firing is the best system of emission reduction for *this* subcategory. Absent the energy concerns, dispensed with above, that another subcategory may more efficiently burn a fuel does not justify declining to consider switching to that fuel as a BSER for this source category.

1. Without gas supply concerns, the efficiency difference between coal-fired boilers and natural gas combined-cycle units (NGCCs) is irrelevant.

As a threshold matter, if there is no constraint on the availability of natural gas supplies for both NGCCs and medium-term coal-fired boilers, the efficiency difference between these type EGUs is irrelevant. The only plausible statutory factor that could warrant consideration of the amount of fuel needed to generate a certain amount of electricity is "energy requirements"; there is no statutory basis for considering the optimal energy efficiency of a production process apart from

[32] 2024 Steam TSD at 14.

[33] Chevron 2024 Annual Report at 35 (2024), https://www.chevron.com/newsroom/media/publications/annual-report.

[34] BP Annual Report and Form 20-F 2024 at 6 (2025), https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/investors/bp-annual-report-and-form-20f-2024.pdf.

energy needs. 42 U.S.C. § 7411(a)(1).[35] And there is enough gas to supply both NGCCs and medium-term coal-fired boilers that could opt for this compliance pathway. As demonstrated above, there is ample natural gas available to support the co-firing-based standards for this subcategory of units. The modest increase in gas demand from co-firing to comply with the CPS would have no meaningful impact on the ability of NGCCs units to operate at any capacity, in any region. EPA identifies no evidence to the contrary.

When EPA made the same unsupported arguments in 2019, Shell Oil Company similarly rejected the false dichotomy between co-firing and NGCC operation:

> EPA expresses concern that promoting co-firing could result in the re-directing of gas from highly efficient natural gas combined cycle (NGCC) units to less efficient co-fired coal EGUs. EPA does not offer any modeling or other data to support this 'gas-shifting' concern. Indeed, the risk is not plausible. The 'gas-shifting' scenario contemplates a market in which natural gas is scarce. By contrast, natural gas supplies are abundant, and as EPA itself recognizes, prices are low. Accordingly, there is no credible risk that establishing co-firing as part of the BSER would deprive NGCC units of gas in some amount that would lead to economic harm.[36]

This statement underscores the lack of factual support for the proposal's concerns and reinforces the conclusion that co-firing poses no credible threat to NGCC operations. An abundance of natural gas is echoed in EIA's analysis of natural gas production, which shows increases in every year since Shell commented that "supplied are abundant" in 2018.[37] Clearly, there is plenty of gas available for co-firing and EPA's concerns are unsupported.

Recent industry trends further demonstrate the sufficiency of the natural gas supply. From 2019 to 2024, about 44 percent of coal plants were co-fired with natural gas as a fuel or startup source, with a total capacity of approximately 63 GW as of 2024.[38] Over the same period, new NGCC

---

[35] In addition, the statutory factor of emission reductions could warrant consideration of efficiency losses from deploying a system of emission reduction where decreasing efficiency would increase emissions. That is not the case with gas cofiring at coal-fired power plants, however, which would reduce emissions of greenhouse gases and most other air pollutants.

[36] Comments of Shell Oil Company on Notice of Proposed Rulemaking on Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program, at 3 (Oct. 30, 2018), Doc. ID No. EPA-HQ-OAR-2017-0355-23716.

[37] U.S. Energy Information Administration, Natural Gas Gross Withdrawals and Production, Marketed Production, https://www.eia.gov/dnav/ng/NG_PROD_SUM_A_EPG0_VGM_MMCF_A.htm.

[38] *See* U.S. EIA, Form EIA-860.

projects added roughly 5 GW annually, except for a dip in 2024.[39] These trends show that co-firing and new NGCC development have coexisted without placing strain on gas supply. These examples make clear that utilities are already choosing to - and can - burn natural gas in boilers without compromising the availability of natural gas for other uses, including NGCCs operations.

A 2018 analysis from M.J. Bradley & Associates reinforces this conclusion:

> [I]ncreased natural gas demand resulting from increased co-firing would be well within current EIA forecasts for future natural gas demand growth, and would have minimal impacts on natural gas prices. There is simply no basis for EPA to claim that natural gas supplies are so constrained that designating co-firing as the BSER (at any level and for any EGU) would divert natural gas from NGCC (or any other use).[40]

EPA offers no evidence that NGCCs' ability to access and utilize natural gas will be affected in any way by the CPS.

2. EPA fails to demonstrate that any marginal efficiency losses associated with using gas for co-firing as compared to an NGCC outweighs the benefits of co-firing at a coal unit.

In the CPS, EPA determined that "the introduction of natural gas co-firing will cause steam boilers to be slightly less efficient due to the high hydrogen content of natural gas." 89 Fed. Reg. at 39,895. On the other hand, "the auxiliary power demand related to coal handling and emissions controls typically decrease as well."[41] Therefore, "the overall net output efficiency of a coal-steam boiler that switches from coal to natural gas firing may change only slightly, in either a positive or negative direction."[42] In the cost analysis, EPA assumed a 1 percent net heat rate increase for 40 percent co-firing but noted that this was a conservative assumption.[43]

---

[39] U.S. Energy Information Administration, Electric generators plan more natural gas-fired capacity after few additions in 2024 (2025), https://www.eia.gov/todayinenergy/detail.php?id=65464#:~:text=Developers%20plan%20to%20add%2018.7,power%20plant%20at%20Plaquemines%20LNG.

[40] Comments of Environmental NGOs on Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program, at 43 (Oct. 31, 2018), Doc. ID No. EPA-HQ-OAR-2017-0355-23806.

[41] 2024 Steam TSD at 9.

[42] *Id.*

[43] *Id. See also* Jim Staudt, Andover Technology Partners, *Natural Gas Cofiring on Coal Fired Boilers*, at Sec. 3 (July 25, 2025), attached (describing the various components that go into determining efficiency of a boiler before and after co-firing).

EPA now partially justifies abandoning the standard for this subcategory because "natural gas ***may*** be more efficiently used in [an NGCC]." 90 Fed. Reg. at 25,774 (emphasis added). EPA fails to balance this potential and marginal efficiency loss against *anything*, much less the factors required to be considered under the Clean Air Act, such as emission reduction, health impacts, and energy requirements.

Co-firing at 40 percent natural gas reduces coal-based pollutants such as mercury, SO_2, and direct particulate matter roughly proportional to the percent of gas co-fired.[44] Carbon dioxide emissions are reduced by 16 percent.[45] And NO_x emissions are typically reduced dependent on the combustion system modifications that are implemented.[46] These certain emission reductions certainly outweigh the mere possible marginal heat rate decrease. EPA entirely fails to mention or consider these impacts in the proposed repeal.

Co-firing also provides significant operational benefits: "[t]he potentially enhanced 'turn-down ratio' capability with natural gas makes extended operation at low-load conditions significantly easier to maintain, either through the use of the natural gas ignitors, natural gas main burners, or a combination of the two."[47] Co-firing also allows EGUs to have multiple fuel sources to use in case of an emergency, such winter storms that may freeze coal piles rendering coal-fired EGUs unable to meet demand unless they can fire an alternative fuel.[48] The proposed repeal completely disregards these benefits of co-firing.

3. EPA's quantitative arguments regarding the relative efficiency of burning gas in an NGCC versus a boiler are unsound.

While EPA's "efficient use of gas" argument is fundamentally flawed on both a practical and legal matter, the actual numbers EPA uses to discuss efficiency are also unsound. EPA compares the heat rate for new NGCCs to the heat rate for a steam generator that is fully powered by natural gas, claiming heat rates of 6,700 Btu/kWh for new NGCCs and 11,000 Btu/kWh for natural gas-fired steam EGUs. 90 Fed. Reg. at 25,744. Firstly, these stated values are misleading and incorrect, overestimating gas-fired steam EGU heat rates and underestimating NGCC heat rates: according to the latest data available from EIA, the average heat rate for a natural gas-fired steam EGU is actually 10,285 Btu/kWh, and the average heat rate for all NGCC EGUs was

[44] 2024 Steam TSD at 20.

[45] *Id*.

[46] *Id*.

[47] *Id.* at 10.

[48] *See* Benjamin Storrow, *How Coal Failed in the Texas Deep Freeze*, E&E News (Mar. 18, 2021), https://www.eenews.net/articles/how-coal-failed-in-the-texas-deep-freeze/.

7,549 Btu/kWh resulting in a 12 percent difference in heat rate compared to the proposal's values.[49]

Secondly, as EPA notes in the proposal, and as is supported by these EIA data, this difference in heat rate is not due to co-firing, but rather the technological differences between an NGCC and a steam unit. An NGCC more efficiently converts fossil fuel to electricity than does a steam-powered boiler, regardless of whether it is fired by coal or natural gas.[50] This fundamental difference in efficiency is precisely why NGCC units have often out-competed coal-fired steam boilers, displacing them in the merit order dispatch system (which prioritizes EGUs based on lower marginal costs) despite natural gas being, in general more expensive than coal on a per-Btu basis.[51] Indeed, this is in large part why coal-fired steam generation has decreased significantly while NGCC generation has increased.

However, coal-fired generation remains prominent in some areas due to market and power system dynamics, indicating that boiler-generated electricity may be least-cost under some circumstances even given its lower efficiency. Accordingly, the appropriate consideration regarding "efficiency" is the direct impact of co-firing on that boiler's performance, not in relation to the efficiency of an NGCC. As EPA notes, "40 percent natural gas co-firing would result in a decrease in the boiler efficiency by about 2 percent," 90 Fed. Reg. at 25,774, which as described in Part V.B.2. above may be an overestimate, and in any event is greatly outweighed by the emission reductions achieved. Per recent data from EIA, even a 100 percent natural gas-fired steam EGU reduces the efficiency of a steam-powered boiler by 2.6 percent compared to a fully coal-fired boiler, yet the former emits substantially lower pollution than the latter.[52] For these reasons, EPA's quantitative arguments regarding the effects of co-firing on boiler efficiency fall short.

---

[49] *See* U.S. Energy Information Administration, Form EIA-860 Annual Electric Generator Report, Table 8.2: Average Tested Heat Rates by Prime Mover and Energy Source 2013-2023, https://www.eia.gov/electricity/annual/html/epa_08_02.html; s*ee also* Staudt 2025, at Sec. 3.1 (discussing the differences between the use of gas at an NGCC and co-fired at a coal plant).

[50] *Id*.

[51] U.S. Energy Information Administration, "Natural Gas Prices," (July 31, 2025) https://www.eia.gov/dnav/ng/ng_pri_sum_dcu_nus_a.htm; U.S. Energy Information Administration, "Coal Markets; average weekly coal commodity spot prices" (Aug. 4, 2025) https://www.eia.gov/coal/markets/#tabs-prices-2.

[52] U.S. Energy Information Administration, Form EIA-860 Annual Electric Generator Report, Table 8.2: Average Tested Heat Rates by Prime Mover and Energy Source 2013-2023, https://www.eia.gov/electricity/annual/html/epa_08_02.html.

C. The CPS's co-firing-based standard does not constitute impermissible generation shifting under *West Virginia v. EPA*.

In another sharp departure from its previous determination, EPA now proposes to find that co-firing natural gas "is not the BSER for existing medium-term coal-fired steam generating EGUs because it constitutes generation shifting and is therefore beyond the EPA's authority to require under CAA section 111." 90 Fed. Reg. at 25,774. According to the agency, "requiring a utility to use a completely different fuel type that in many cases requires significant new infrastructure to be added to supply the facility, and can require modification/addition of burners to the boiler, is impermissible generation shifting." *Id.* Thus (the argument goes), by "attempt[ing] to dictate the market share of coal versus natural gas," it runs afoul of the Supreme Court's holding in *West Virginia v. EPA*, 597 U.S. 697 (2022). *Id.*

Here EPA both badly misreads *West Virginia* and mischaracterizes the nature of co-firing. In *West Virginia*, the Court expressly cited "fuel-switching" as the kind of "traditional air pollution control measure" that the agency "had always before selected" for the BSER, contrasting it directly to the Clean Power Plan's effort to "improve the *overall* power system by lowering the carbon intensity of power generation" rather than "improving the performance of individual sources." 597 U.S. at 727 (quotations omitted and emphasis in original). As the Court further explained, the Clean Power Plan would achieve its system-based improvement "by forcing a shift throughout the power grid from one type of energy source to another." *Id.* at 727-28.

By contrast, co-firing natural gas at a coal-fired steam generating unit does not lower emissions through any such shifting of generation "throughout the power grid." Rather, it is a widely-utilized form of fuel-switching implemented at the level of an individual unit to reduce emissions, and therefore falls well within the heartland of traditional BSER approaches that the Court found to be within EPA's authority in *West Virginia.* We discuss these flaws in EPA's reasoning in the sub-sections that follow.

1. EPA's proposal elides *West Virginia*'s clear distinction between unit-level fuel-switching and grid-level generation-shifting and ignores the decision's emphasis on transformative real-world impacts.

In the proposal, EPA ignores the distinction between source-based and system-based measures, which is central to the court's holding in *West Virginia*. Co-firing occurs *within each individual unit*; it is in no way premised on grid-level activities or on the operation of multiple (including unregulated) units, nor does it specify any operational limits on the unit subject to regulation. The Clean Power Plan, by contrast, would have *required* higher-emitting units to purchase credits from new, cleaner generation sources or else (under certain compliance pathways) accept a hard limit on their utilization. In other words, *West Virginia* rejected a BSER that "require[ed] plants to reduce operations or subsidize their competitors" in order to meet a nationwide energy mix that EPA had pre-determined. *Id.* at 731 n.4. The co-firing element of the CPS specifies no nationwide energy mix, imposes no cap-and-trade scheme, requires no reduced generation from

affected plants, and assumes no interaction between an affected source and any other source (or the grid as a whole) for the purposes of compliance.

Insofar as the *West Virginia* Court expressed doubt that EPA could lawfully "require[e] coal plants to become natural gas plants," it is apparent from context that the Court is not skeptical of straightforward fuel-switching (which, again, it highlighted as a "traditional air pollution control measure") but rather a requirement to outright replace existing boiler-based steam EGUs with stationary combustion turbines, which utilize an entirely distinct generating technology. Fairly early on in the opinion, in describing the 2015 NSPS for power plants' emissions, the Court explains that this rule "established federal carbon emissions limits for new power plants of two varieties: fossil fuel-fired electric steam generating units (mostly coal fired) and natural-gas-fired stationary combustion turbines." *Id.* at 711. From that point on, the court refers to "coal plants" and "gas plants" (or "natural gas plants") throughout the opinion, clearly using these terms as convenient shorthand for fossil fuel-fired steam EGUs and combustion turbines, respectively, which is a very common practice throughout the industry and in regulatory settings. As a result, the *West Virginia* Court was clearly expressing doubt about whether EPA could, through regulation, require plant owners to demolish their existing steam EGUs and erect in their place a different type of generating unit in the form of brand new stationary combustion turbines. A modest co-firing requirement is not remotely similar to this.

EPA also misreads *West Virginia* as a rigidly formalistic holding while ignoring the case's focus on real-world, impacts. In rejecting the Clean Power Plan's schema, the Court in *West Virginia* applied the major questions doctrine, a "distinct" approach that departs from "routine [methods] statutory interpretation" in "certain extraordinary cases." *Id.* at 724-25 (cleaned up). Specifically, under this doctrine, courts will "greet assertions of extravagant statutory power over the national economy with skepticism," requiring "clear congressional authorization" for "agency decisions of vast economic and political significance," that seek "unheralded power representing a transformative expansion in [the agency's] regulatory authority." *Id.* at 716, 723-24 (cleaned up).

The Court applied this doctrine in *West Virginia* based on its conclusion that the Clean Power Plan reflected an "unprecedented [assertion of] power over American industry" by "dictating the optimal mix of energy sources nationwide." *Id.* at 728, 730 (cleaned up). The Plan was structured in large part on a complex system of tradeable emission reduction credits that regulated sources (i.e., fossil-fired steam EGUs and stationary combustion turbines) needed to purchase from nonregulated sources (i.e., newly installed wind and solar generators). It covered all existing coal-, gas-, and oil-fired power plants that otherwise met the rules' applicability requirements, and required a complex modeling of the nation's growth capacity for renewable resources to quantify the amount of credits that would be available (and thus the amount of emission reductions required). According to the Court, Congress could not have intended EPA to assume for itself the authority to "balance[e] the many vital considerations of national policy implicated in deciding how Americans will get their energy" by "for instance, [deciding]how much of a switch from coal to natural gas is practically feasible by 2020, 2025, and 2030 before the grid

collapses, and how high energy prices can go as a result before they become unreasonably exorbitant." *Id.* at 729.

EPA cannot now claim that the co-firing element of the CPS standard comes anywhere near the regulatory reach and magnitude of the Clean Power Plan, or that it otherwise implicates questions of "vast economic and political significance." Rather than affecting the entire electric grid, co-firing measures would apply only to a small coterie of units: coal-fired steam EGUs plants that commit to a retirement date that falls between January 1, 2032, and January 1, 2039. 89 Fed. Reg. at 39,841. It would only require a 16 percent emission reduction, which if the source chose co-firing as their compliance pathway would involve partial co-firing (i.e., 40 percent gas by volume), allowing these sources to continue burning primarily coal during the remainder of their operation. And nothing in the administrative record indicates it would disrupt grid reliability, have a tangible impact on wholesale or retail electricity rates, or even be the selected method of compliance by a substantial number of units.[53] This is a very far cry from "restructuring the Nation's overall mix of electricity generation," and comes nowhere near the kind of "vast economic and political significance" the Court described in *West Virginia*. Under these circumstances, the effect on the nation's supply of coal would be essentially imperceptible, having no tangible impact on wholesale or retail prices.

2. The equipment upgrades required to co-fire gas at coal plants are minor and do not reflect EPA's assertion of the kind of "unprecedented power over American industry" that the Court described in *West Virginia*.

In asserting that *West Virginia* prohibits co-firing as a lawful BSER component, EPA implies that the plant upgrades required for co-firing would entail a vast transformation of the country's economic landscape. This is decidedly not the case. The record evidence for the CPS showed that in 2021, 44 percent of existing coal plants already burned some quantity of natural gas, with over 10 percent firing at rates above 10 percent. 89 Fed. Reg. at 39,892. For those that require burner or other equipment upgrades to be capable of firing gas, EPA found an average capital cost of approximately $52/kW. *Id.* at 39,894. This is at least an order of magnitude lower than the capital costs associated with typical end-of-stack pollution control retrofits for coal plants, including flue gas desulfurization systems (which range from $529 to $1,174/kW, according to EIA) and selective catalytic reduction controls (which range from $271 to $406/kW).[54]

Understanding how little modification is required to co-fire natural gas in a steam EGU makes it clear why the costs of co-firing are so low. First, all coal-fired EGUs already co-fire an

[53] 2024 CPS RIA at 3-31 and 3-32.

[54] U.S. Energy Information Administration, *Assumptions to the Annual Energy Outlook 2025: Electricity Market Module*, at 23 (Apr. 2025), https://www.eia.gov/outlooks/aeo/assumptions/pdf/EMM_Assumptions.pdf.

alternative fuel on startup, primarily natural gas due to coal being harder to ignite.[55] Because of steam boiler design, natural gas co-firing requires minor modifications—normally just changes to the burners and possibly changes to fuel delivery or modest boiler modifications.[56] For the burners, "the existing coal burners can normally be retained and simply modified to accommodate increased use of natural gas."[57] The plant can then adjust its air dampers and fans to get the correct fuel-air mix.[58]

Contrary to EPA's implications, the cost of upgrading a coal plant to allow for co-firing amounts to little more than adjustments, particular in comparison to plant-level replacements. As Andover Technology Partners explains: "[u]sing cost as an indicator of the extent and complexity of changes and modifications, co-firing is by far the simplest and most inexpensive way to use natural gas instead of coal to generate electricity as compared to replacing the old coal plant with a new natural gas combined-cycle plant."[59] The cost of a new NGCC is around $1,000/kW or more and a natural gas combustion turbine around $800-900/kW or more.[60] Comparing that to the low cost of co-firing from case studies of between $6/kW or even the high end cost of modifications to Brunner Island in Pennsylvania which was modified at a cost of $67/kW to fire up to 100% natural gas shows how minimal co-firing modifications are.[61]

Modifying a steam EGU to co-fire natural gas is not a recent development. Indeed, commenters and EPA itself have repeatedly confirmed that any modifications are minor and routine. In 2024, EPA explained the necessary modifications of existing equipment to accommodate co-firing:

> Modifying existing coal-fired boilers to enable natural gas firing typically involves installation of new gas burners and supply piping, modifications to combustion air ducts and control dampers, and possibly modifications to the boiler's steam superheater, reheater, and economizer heating surfaces that transfer heat from the hot flue gas exiting the boiler furnace. The conversion may also involve some modification of downstream air pollution emission control equipment.[62]

EPA also described that the timeline and scope of these modifications were minor, stating that:

---

[55] Staudt 2025 at 5.

[56] *Id.* at 5.

[57] *Id.*

[58] *Id.*

[59] *Id.* at 7.

[60] *Id.* at 8.

[61] *Id.* at 6-9.

[62] 2024 Steam TSD at 9.

> Any necessary boiler modifications that might be required to achieve natural gas co-firing levels of 40 percent or greater could be completed within three years….inclusive of time required for feasibility (conceptual) studies, commercial arrangements (specifications/awards), detailed engineering, site work/mobilization, construction, and startup/testing. The scope of the boiler modifications discussed above are similar to standard maintenance activities, and no long-term delays or schedule uncertainties are expected.[63]

Commenters have also repeatedly detailed how minor these modifications are:

> Although conversion of a boiler to operate primarily on natural gas involves some physical modifications to the facility, these are often relatively modest. Coal-to-gas conversion projects can usually be accomplished without replacing the existing boiler, and often entail only construction of the natural gas delivery infrastructure—if not already available—and modifications to burners and ducts.[64]

> Echoing EPA's claim that these modifications are no larger in scope than standard maintenance activities, commenters have pointed out that "many such projects can be completed during periods when a plant is offline for maintenance and, excluding any pipeline construction, most projects take only a few months to complete.[65]

As for pipeline infrastructure, EPA found that 65 percent of all coal-fired units operating at the end of 2021 are located at a facility that already has a gas pipeline, that half already use gas as a fuel or startup source, and that 29 already have the capability of co-firing at over 40 percent.[66] EPA also found in the 2024 rulemaking that even if all coal plants were medium-term units subject to co-firing requirements, the amount of additional mileage of pipeline laterals needed to accommodate compliance with the standard would fall within the same range as the amount of new capacity that had been added in the recent past. 89 Fed. Reg. at 39,893. Thus, the co-firing component of the BSER simply cannot be said to disrupt "vast swaths of American life." *West Virginia*, 597 U.S. at 744.

---

[63] *Id.* at 10.

[64] Comments of the Environmental Defense Fund on EPA's Proposed Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program, at 23 (Oct. 31, 2018), Doc. ID No. EPA-HQ-OAR-2017-355-24419 (citing Babcock & Wilcox, *Natural Gas Conversions of Existing Coal-fired Boilers* (2010)).

[65] Comments of Environmental Defense Fund on EPA's Advance Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Sources, at 49 (Feb. 26, 2018), Doc. ID No. EPA-HQ-OAR-2017-0545-0297.

[66] 2024 Steam TSD at 13-14.

3. The CPS's co-firing component is in line with EPA's historical practice and does not entail a "transformative expansion in its regulatory authority."

Nothing about the CPS's co-firing element reflects a conceptual break from EPA's historical assertion of power or requires the agency to act outside its core area of expertise, which are the kinds of actions that implicate the Court's holding in *West Virginia*. *See, e.g.*, 597 U.S. at 729 ("When an agency has no comparative expertise in making certain policy judgments, we have said [that] Congress presumably would not task it with doing so.") and 724 (holding that "transformative expansion[s] in [an agency's] regulatory authority" trigger the major questions doctrine) (cleaned up). On the contrary, as mentioned previously, *West Virginia* cited "fuel-switching"—which is an emission reduction measure that encompasses (but is broader than) co-firing—as the kind of "traditional air pollution control measure" the agency had "had always before selected" when implementing Section 111. *Id.* at 727.

As EPA explained in the CPS, the agency has a long history of relying on fuel switching to reduce emissions under the Clean Air Act:

> Standards based on co-firing…are based on a "traditional pollution control measure,' in particular, 'fuel switching,' as the Supreme Court recognized in West Virginia. Rules based on switching to a cleaner fuel are authorized under the CAA, an authorization directly acknowledged by Congress. Specifically, as part of the 1977 amendment process, Congress added language requiring that the EPA based its standards regulating new sources (specifically power plants) on 'technological' controls, rather than simply the 'best system.' Congress understood this to mean that new sources would be required to implement add-on controls, rather than merely relying on fuel switching, and noted that one of the purposes of this amendment was to allow new source to burn high sulfur coal while still decreasing emissions, and thus to increase the availability of low sulfur coal for existing sources, which were not subject to the 'technological' control requirement. In 1990, however, Congress removed the 'technological' language, allowing both the EPA to set fuel-switching based standards for both new and existing power plants.
>
> The EPA has a tradition of promulgating rules based on fuel switching. For example, the 2006 NSPS for stationary compression ignition internal combustion engines required the use of ultra-low sulfur diesel. Similarly, in the 2015 NSPS for EGUs, the EPA determined that the BSER for peaking plants was to burn primarily natural gas, with distillate oil used only as a backup fuel. Nor is this approach unique to CAA section 111; in the 2016 rule setting section 112 standards for hazardous air pollutant emissions from area sources, for example, the EPA finalized an alternative

particulate matter (PM) standards that specified that certain oil-fired boilers would meet the applicable standard if they combusted only ultra-low-sulfur liquid fuel.[67]

Although EPA had not, prior to the CPS, specifically included coal-to-gas switching in its BSER for Section 111 power plant standards, it has *always* treated coal- and gas-fired (and, for that matter, oil-fired) steam EGUs as part of the same source category. In its very first listing of Section 111 categories, published on March 31, 1971 – just three months after Section 111 was enacted into law – EPA included "fossil fuel-fired steam generators of more than 250 million B.t.u. per hour heat input." 36 Fed. Reg. 5931 (Mar. 31, 1971). The agency proceeded in December of that same year to finalize new source performance standards for these units, which it defined to cover those that burn "natural gas, petroleum, coal, or any or any form of solid, liquid, or gaseous fuel derived from such materials." 36 Fed. Reg. 24,876, 24,876 (Dec. 23, 1971) (40 C.F.R. § 60.41(b)). *See also* 40 C.F.R. Part 60, Subpart Da (defining a subcategory of steam generators specifically for "Electric Utility Steam Generating Units," which similarly covers units that burn "natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such material for the purpose of creating useful heat." 40 C.F.R. § 60.41Da (definition of "Fossil fuel")).

In fact, in the 2015 greenhouse gas standards for new fossil steam EGUs – which the alternative proposal does not seek to withdraw – EPA established identical CO_2 limits for new fossil steam EGUs regardless of whether they fire coal, gas, fuel, some fuel derived from these substances, or any combination thereof. *See* 40 C.F.R. Part 60, Subpart TTTT, Table 1; 40 C.F.R. § 60.5580. The proposal's description of coal and gas as "entirely different fuels" thus falls woefully short of demonstrating a violation of *West Virginia*'s constraints on generation-shifting: these fuels are combusted at units within the same source category, are already combusted together at close to half of the individual units that are characterized as coal units, are subject to the same CO_2 standards for new fossil steam EGUs, and require only minor boiler upgrades for units that do not currently allow for co-firing. At both the highest conceptual level and down to the details, there can be no credible claim that the CPS's co-firing measure effects a "fundamental revision of the statute, changing it from one sort of scheme of regulation into an entirely different kind," to quote *West Virginia*, 597 U.S. at 728. As such, co-firing does not violate that case's holding, and can be (and, in this case, is) a legitimate component of the BSER.

D. EPA fails to overcome the record demonstrating that infrastructure associated with co-firing can be deployed by the compliance date.

EPA claims, without evidence, that "it is *unlikely* that the pipeline infrastructure necessary can be deployed by the compliance date of January 1, 2030." 90 Fed. Reg. at 25,774 (emphasis added). The vague and unsupported contentions put forth in support of this statement are that some projects may take longer due to unenumerated but allegedly "reasonably foreseeable adverse

[67] EPA, Response to Comments, Chapter 2.7.2, at 101-02 (Apr. 2024), Doc. ID No. EPA-HQ-OAR-2023-0072-8914; *see also* 89 Fed. Reg. at 39,901.

conditions" and that these projects are taking place in the context of unsubstantiated other projects supporting an unquantified "increasing demand for natural gas." *Id.* at 25,774-75.

As described above, most coal-fired EGUs are already connected to gas pipelines. But, for those that aren't, EPA constructed a timeline for compliance as part of the CPS that would allow for feasibility study, engineering, rights-of-way acquisition, and construction of the pipeline. Based on review of recently completed permitting approvals and construction, which had no regulatory driver, ICF analysis found that 90 percent of the projects took less than three years to complete permitting and construction and none took more than 3.5 years.[68] In the CPS timeline, the natural gas pipeline is completed six months in advance of the compliance date, with only start-up and testing happening after the pipeline is complete and even those processes finishing four months before the compliance deadline.[69]

The proposal cites the ICF analysis, which found that "the average time it would take to design, permit, and construct laterals to a coal plant is about three years."[70] However, the analysis also noted that "if they experience difficulties," projects *could* take up to five years. *Id*. This worst-case timeline scenario was based on combining the longest project approval timeline for any project reviewed, which was 24 miles long and crossed a particularly environmentally sensitive area and submitted incomplete applications (Carty Lateral Project) with the longest construction timeline for any project reviewed, which was 66 miles long and was delayed to match the schedule of the LNG terminal it was feeding (Coastal Bend Header), which landed at 49 days short of five years.[71] Five years is an extremely conservative caveat given that *no* project that ICF reviewed, including Carty Lateral and Coastal Bend Header, took more than 3.5 years for approval and construction.[72] The proposal inappropriately extracts this one line out of context to support its assertion regarding pipeline construction timelines, with no further evidence.

Moreover, the proposed repeal fails to consider the ability of states to apply a longer compliance schedule under the "remaining useful life and other factors" provision of Section 111. As the CPS explained, "[t]hese compliance times are based on information available for and applicable to the subcategories as a whole . . . . There may be circumstances in which a particular EGU cannot reasonably comply with its standard of performance by the compliance date," for which the CPS allows states to consider invoking the remaining useful life and other factors provision to provide a less stringent standard for a particular source. 89 Fed. Reg. at 39,966-67. Under the CPS, the natural gas pipeline feasibility work will be completed a year before a state submits its

[68] 2024 Steam TSD at 15.

[69] *Id.* at 16.

[70] ICF International, Documentation for Lateral Cost Estimation at 42 (2024), Attachment 18 to 2024 Steam TSD, Doc. ID No. EPA-HQ-OAR-2023-0072-9095.

[71] *Id.* at 41.

[72] *Id.* at 42.

implementation plan to EPA, and necessarily the length of the pipeline needed for units complying with the cofiring-based standard and any other relevant factors (including potential difficulties) should be identified and resolved during that process.

The proposal vaguely asserts that the CPS failed to consider that these pipeline projects would occur in the context of increased natural gas demand. *See* 90 Fed. Reg. at 25,775. The claim contains such little detail as to make it difficult to respond to. Nevertheless, in the 2024 Rule, the Agency explained that "EPA's reference case and the compliance scenarios that EPA has considered capture incremental development of gas supply, pipelines, and storage to satisfy the increased levels of gas use included in the cases.[73] While EPA may now dislike the outcome of that analysis, it is simply incorrect in now claiming the CPS rule ignored such factors.

Moreover, as described above in Part V.A., natural gas demand is expected to decline between now and 2030 under nearly all AEO 2025 scenarios and EPA cites no evidence to the contrary. Even if there were additional projects, there is extensive headroom between the potential pipeline capacity needed to accommodate compliance with the co-firing-based standard and the capacity of the pipeline industry to build additional pipelines. Under the extremely conservative assumption that every single plant would have to build a new lateral pipeline and that every single EGU that might be part of this subcategory would be, 3,500 miles of pipeline would be built. 89 Fed. Reg. at 39,893. As EPA concluded in 2024, adding 3,500 miles to a U.S. natural gas pipeline network of over 3 million miles is more than reasonable given historic pipeline buildouts: "the total annual mileage of natural gas pipelines constructed over the 2017-2021 period ranged from approximately 1,000 to 2,500 miles per year, with a total annual capacity of 10 to 25 billion cubic feet per day," *id.*, a rate much higher than the upper end of what would be required to build out 3,500 miles of pipeline over two years under the CPS. EPA also noted an industry report that "projects an average of over 1,400 miles of new natural gas pipeline will be built through 2035, which is similar to the approximately 1,670 miles that were built on average from 2013 to 2017." *Id*. Thus, EPA's 2024 conclusion that ample pipelines could be built was well supported by evidence, even when using "a conservative estimate that significantly overstates the amount of co-firing that the EPA projects would occur under [the CPS]" and "[t]he actual pipeline investment for this subcategory would be substantially lower." *Id*.

[73] EPA, EPA's Responses to Public Comments on the 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, Chapter 6: Natural Gas Co-firing, at 10 (Apr. 2024), Doc. ID No. EPA-HQ-OAR-2023-0072-8914.

E. Declaring alternatives "out of scope" does not absolve EPA from the requirement to consider them.

EPA provides two technical bases to repeal the co-firing standards – the first is an alleged lack of gas supply for 40-percent co-firing and the second is the alleged lack of infrastructure needed that can be deployed by the compliance date. 90 Fed. Reg. at 25,775. Instead of considering viable alternatives – including different compliance timelines or percentages of co-firing – EPA asserts that "co-firing at other percentages [that] could be the BSER is outside the scope of this action." *Id.* This conclusion is baseless. Given EPA's legal mandate to promulgate greenhouse gas standards for power plants, its repeal of the co-firing standards for medium-term coal units without replacement and consideration of viable alternatives (including different levels of co-firing) is unlawful.[74]

Section 111 is designed so that EPA could most effectively tailor standards using the "best" measures for different source categories and pollutants, so long as they are "achievable" and "adequately demonstrated," accounting for "cost," "energy requirements," and certain other factors. 42 U.S.C. § 7411(a)(1). Despite its obligation to limit greenhouse gas emissions from the power sector based on a tailored best system of emissions reduction, EPA has chosen *no* system. The Agency's failure to consider any viable alternatives is arbitrary and capricious.[75] EPA cannot repeal first and analyze later.[76]

Even if EPA's objections to the 40-percent co-firing standard based on gas supply and the timeline for pipeline infrastructure were legitimate (which, as discussed above, they are not), the Agency should still have considered alternative approaches. In the limited time available during

---

[74] *See* Parts III and IV above (discussing standard for reversing agency action and consideration of alternatives).

[75] *Delaware Dept. of Nat. Res.*, 785 F.3d at 1 ("alternative way of achieving EPA's objective . . . should have been addressed and adequate reasons given for its abandonment"); *Shieldalloy Metallurgical Corp.,* 624 F.3d at 489 ("[A]gencies must evaluate parties' proposals of 'significant and viable' alternatives"); *State Farm*, 463 U.S. at 51 (finding that NHTSA had arbitrarily failed to explain its rejection of alternative in prior finding); *Pub. Citizen,* 733 F.2d at 100 (setting aside suspension of rule because NHTSA "failed to explain why alternatives, which the rulemaking record indicates were available to the agency, could not correct" problem agency relied on as basis for suspending rule); *Int'l Ladies' Garment Workers' Union*, 722 F.2d at 816 (agency impermissibly failed to consider alternatives to repeal "raised in [the] original notice and the comments"); *Office of Commc'n of United Church of Christ*, 707 F.2d at 1439 (agency improperly eliminated programming logs requirements without giving due consideration to the benefits of retaining a modified form of logs).

[76] *State Farm*, 463 U.S. at 51 ("[G]iven the judgment made in 1977 that airbags are an effective and cost-beneficial lifesaving technology, the mandatory passive restraint rule may not be abandoned without any consideration whatsoever of an airbags-only requirement."); *see also Pub. Citizen*, 733 F.2d at 98 (agency's decision to suspend its program while it "further studied" an alleged problem with the program was arbitrary and capricious).

this comment period, commenters conducted modeling of alternative scenarios using FACETS to provide an illustrative example of the type of analysis that should have been conducted by EPA.[77] One alternative assessed using FACETS would be to modify the timeline for coal plants to begin cofiring by delaying compliance deadlines by two years. Commenters assessed the impact of this policy alternative, leaving the remainder of the finalized CPS in place, as compared to the full unmodified CPS, under two baseline scenarios: one reflecting economic and energy system assumptions from 2023 (i.e., the same general baseline utilized by EPA in both the final CPS and the proposed repeal) and an updated baseline reflecting 2025 assumptions.[78] Under both scenarios, this alternative could reduce compliance costs significantly, by 25 to 29 percent,[79] while achieving 97-98% emission reductions of the CPS as compared to the zero emissions reductions achieved under the proposed repeal.

VI. EPA must withdraw its proposal to rescind the emission guidelines for existing gas- and oil-fired steam generating units.

In the 2024 Carbon Pollution Standards, EPA adopted emission guidelines for existing gas- and oil-fired steam generating units reflecting the best system of emissions reductions of routine methods of operation and maintenance (for base load and intermediate load units) and uniform fuels (for low load units). 89 Fed. Reg. at 39,897-98. The Agency explained that presumptive emissions limits reflecting the rates achieved by the majority of the fleet within each of the base load and intermediate-load sub-subcategories, and input-based rates for the low load sub-subcategory, would impose minimal costs while preventing emissions increases from these units. *Id.* at 38,898.

In the proposal, EPA does not reverse any of its prior factual findings or in any way grapple with the record supporting the emission guidelines of these sources. Nor does it claim that the 2024 rule somehow exceeded EPA's authority under the Clean Air Act—which it plainly did not. Notably, EPA states that it is "*not* proposing to find the BSERs or presumptive standards in the Carbon Pollution Standards unreasonable or inappropriate for these sources," 90 Fed. Reg. at 25,775 (emphasis added). Nonetheless, the Agency "believes it would be imprudent to require States to develop State plans solely for these units," *id.,* citing no authority to support some unspecific "prudence" limitation on its Section 111 regulatory obligations. The proposed

[77] *See* Memorandum, FACETS Energy System Modeling (Aug. 6, 2025), attached.

[78] Updated assumptions include many of those cited, but ultimately ignored, by EPA, such as changes in resource costs, higher demand projections, and policy conditions.

[79] Comparing cost per ton reductions under the existing CPS and a CPS incorporating the alternative policy, calculated for each baseline and case as summation of discounted total system compliance costs (using a 3% discount rate) from 2025 to 2047 divided by total emission reductions over the same period.

deregulatory action violates the provisions of Clean Air Act Section 111 and is arbitrary and capricious.

First, EPA's proposal to exempt oil- and gas-fired steam generators from any regulation is patently unlawful. Clean Air Act Section 111(d) requires standards for *any* existing source that would be regulated if it were a new source. 42 U.S.C. § 7411(d)(1). New gas- and oil-fired steam generators are subject to standards of performance for greenhouse gases under 40 C.F.R. Part 60, Subpart TTTT. 40 C.F.R. § 60.5509(a). Therefore, any existing gas-fired or oil-fired steam generating unit must have a standard of performance. EPA cannot override this clear statutory directive by substituting its own judgment as to whether it would be "prudent" for States to submit plans for these sources.

Second, the proposed deregulatory action is arbitrary and capricious. 42 U.S.C. § 7607(d)(9). EPA makes no effort to overcome – and thus apparently accepts – its conclusions in the 2024 rule that routine methods of operation and maintenance (for base load and intermediate load units) and uniform fuels (for low load units) are the BSERs for this subcategory. While the Agency now asserts that emissions reductions from this component of the regulation are effectively non-existent and not worth the administrative burden, 90 Fed. Reg. at 25,775, it ignores its previous finding that gas-fired steam generating units were projected to continue operating through 2040 and that application of the BSER would prevent emissions increases. 89 Fed. Reg. at 39,897; *see also FCC v. Fox TV Stations, Inc.*, 556 U.S. 502, 515 (2009) (an agency must provide "more detailed justification than what would suffice for a new policy created on a blank slate . . . when, for example, its new policy rests upon factual findings that contradict those which underlay its prior policy"). EPA's observation that these units only account for 3.5 percent of power sector CO_2 emissions does not address this finding at all. 90 Fed. Reg. at 25,775.

Furthermore, EPA has failed to quantify the emissions increases, public health impacts, or work required to control these units, leaving its proposed rescission of standards for oil- and gas-fired steam EGUs entirely unsupported. *Cf. Am. Lung Ass'n v. EPA*, 985 F.3d 914, 994 (D.C. Cir. 2021) ("In finalizing the proposed extensions to key deadlines, the EPA tersely reiterated its stated interest in giving itself, States, and regulated parties more time to comply—despite no showing of need . . . . The EPA did not even hint at how or whether it determined that prolonging public exposure to ongoing harms from pollutants emitted by existing source categories could be justified consistent with the core objectives of the Clean Air Act. That failure is irrational . . . ."), *rev'd on other grounds by West Virginia v. EPA*, 597 U.S. 697 (2022).

Nor does EPA consider the fact that a BSER of routine methods of operation and maintenance (for base load and intermediate load units) and uniform fuels (for low load units) would be straightforward to apply. Indeed, States could simply adopt the presumptive output-based or the input-based standards for any gas- and oil-fired steam generating units within their borders, which are few in number nationally. 89 Feg. Reg. at 39,896 ("There are approximately 200 natural gas-fired steam generating units and fewer than 30 oil-fired steam generating units in operation in the continental U.S."). EPA fails to explain how these "business-as-usual BSERs

and presumptive standards" would require expenditure of resources on "engineering analyses," 90 Fed. Reg. at 25,775 – analyses that presumably would not be needed to continue operating routinely.

The proposed deregulatory approach is also arbitrary because it ignores the reality that States are not required to submit plans at all; rather, any state can choose not to participate in the program, in which case EPA will issue a federal plan for existing sources in that state. 42 U.S.C. § 7411(d)(2). EPA does not claim in the proposal that adopting "business-as-usual" standards for a small number of sources would unduly burden the Agency or divert an excessive amount of resources from other tasks. If EPA deregulates other existing fossil-fuel fired units – although doing so would be arbitrary and capricious – then there will be fewer units to address in the Section 111(d) planning process. If it does not deregulate those units, then States will likely develop standards under Section 111(d) plans for the larger, coal-fired steam units anyway, only a small additional effort needed to add standards for oil and gas steam EGUs to those plans. And the Agency recently detailed the steps it takes toward, and internal resources it devotes to, finalizing a plan, which are manageable. 88 Fed. Reg. 80,480, 80,493-95 (Nov. 17, 2023). There is no reason to exempt existing gas- and oil-fired steam generating units from (statutorily required) standards on grounds that it would be too onerous to develop them, either for the States or for EPA.

For these reasons, EPA must withdraw this aspect of the proposal and leave in place the regulations ensuring that existing gas- and oil-fired steam generators control their greenhouse gas emissions.

VII. To the extent EPA has relied on, or intends to rely on, artificial intelligence tools, the failure to disclose that use or intention in this proposal violates the APA's procedural requirements.

EPA must disclose whether it has used artificial intelligence (AI) in this rulemaking, and if AI has been used, EPA must describe the AI tools employed and explain how the agency has used them. While AI can be used appropriately to improve agency efficiency, its use must be properly moderated and disclosed.

Under the Administrative Procedure Act and the Clean Air Act, EPA is required to accompany its proposed rule with a statement of the rule's basis and purpose. 5 U.S.C. § 553(c); 42 U.S.C. § 7607(d)(3). The Clean Air Act's procedural requirements for rulemaking, 42 U.S.C. § 7607(d), clarify that the statement of the rule's basis and purpose must include a summary of "the factual data on which the proposed rule is based" and "the methodology used in obtaining the data and in analyzing the data." *Id.*§ 7607(d)(3)(A)-(B). If artificial intelligence is used to generate data, analyze data, or otherwise execute data-processing tasks in the course of Agency rulemaking, it constitutes a "methodology" used to generate the proposed rule. Therefore, any use of AI to construct the proposed rule must be disclosed. *Id.* § 7607(d)(3). If the rule is promulgated, the final rule will similarly be required to disclose any use of AI in the methodology behind the rule.

Id. § 7607(d)(6)(A). These requirements safeguard against potential errors that can occur during rulemaking by providing the public an opportunity to identify and correct such errors. To the extent that EPA has used AI in this proposed rulemaking - or intends to use it in the final rulemaking - and failed to disclose that use or intention in the rule's statement of basis and purpose, it removes those safeguards in violation of its statutory obligations.

Additionally, reliance on AI for information or data in any part of the rulemaking must be disclosed under the docket requirements of 42 U.S.C. § 7607(d)(6)(C), and a failure to disclose AI use would result in an incomplete record for judicial review. *Id.* § 7607(d)(7)(A). Courts have declared that these mandatory disclosures are "the safety valves in the use of… sophisticated methodology." *Sierra Club v. Costle*, 657 F.2d 298, 334 (D.C. Cir. 1981). These disclosure requirements are necessary to ensure that agency AI adoption remains open to both public inspection and judicial review. If EPA has used AI in this rulemaking and fails to disclose it in the docket, it hides potential errors and biases from public and judicial review, again in violation of the Clean Air Act's procedural requirements.

Both the Administrative Procedure Act and Clean Air Act state that a rule may be held unlawful if the agency's action is found to be arbitrary and capricious. 5 U.S.C. § 706(2)(A); 42 U.S.C. § 7607(d)(9)(A). Here, any undisclosed use of AI could render EPA's rule unlawful. Courts have interpreted the arbitrary and capricious language to require reasoned decision-making from the agency. In the context of computer models, an agency "must explain the assumptions and methodology used in preparing the model." *Owner-Operator Ind. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 204 (D.C. Cir. 2007). These explanations ensure that the "ultimate responsibility for the policy decision remains with the agency rather than the computer." *Sierra Club*, 657 F.2d at 334-35. Therefore, to meet the arbitrary and capricious standard, AI-using agencies will need to disclose, at a minimum, "algorithmic specifications, including the objective function being optimized, the method used for that optimization, and the algorithm's input variables."[80] To the extent that EPA has used AI in this proposed rulemaking - or intends to use it in the final rulemaking - without explaining the assumptions and methodology behind that use, the rule is unlawful under the arbitrary and capricious standard.

The Administrative Procedure Act also requires agencies to consider the relevant matter presented in comments to the proposed rule. 5 U.S.C. § 553(c). Courts have specified that agencies must respond to comments "in a reasoned manner." *Conf. of State Bank Supervisors v. Off. of Thrift Supervision*, 792 F. Supp. 837, 846 (D.D.C. 1992). Using AI without sufficient human oversight to respond to relevant comments may not fulfill an agency's legal duty of

[80] Cary Coglianese and David Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, 105 GEO. L. J. 1147, 1208 (2017).

consideration because AI does not think in a reasoned manner.[81] Thus, if EPA responds to comments on this rule using AI, it is in violation of the Administrative Procedure Act.

In addition to statutory requirements, recent executive branch directives require AI-use disclosure. The executive actions reflect the Administration's understanding that agency AI disclosure is necessary for correcting agency errors and shortcomings, in addition to building public trust.

When an agency uses AI, the Office of Management and Budget requires in OMB Memo M-25-21 that the agency to "publicly release a summary describing" whether its use is "high-impact."[82] If EPA's rule uses potentially high-impact AI, EPA must follow several additional requirements outlined in OMB Memo M-25-21, Appendix 4. These requirements include, but are not limited to, ensuring that "individuals affected by AI-enabled decisions have access to a timely human review and a chance to appeal any negative impacts, when appropriate."[83] Even if EPA does not use high-impact AI, the Memo recommends that EPA maintain a "transparent process that seeks public input, comments, or feedback from the affected groups in a meaningful, accessible, and effective manner" regarding AI use.[84] As a result, if EPA used AI in this rulemaking without making a public determination on whether the use was high-impact, it has violated OMB's requirements. Furthermore, if the use was high-impact, EPA's lack of disclosure defies additional OMB requirements.

---

[81] Legal scholars note that "less deliberative consideration of individual comments" may, in addition to falling short of procedural requirements, undermine "the democratic legitimacy of agency decisions." Patrick Corcoran, *Preserving Democratic Legitimacy in the Application of A.I. to Notice-and-Comment Rulemaking*, 25 N.Y.U. J. Legis. & Pub. Pol'y 501, 505 (2023). In short, while high volumes of comments certainly leaves agencies searching for efficiency-improving measures, EPA should be aware that the practice of AI-generated response to comments erodes the public trust that the notice-and-comment system is designed to cultivate.

[82] Office of Mgmt. & Budget, Exec. Office of the President, Memorandum M-25-21, Accelerating Federal Use of AI through Innovation, Governance, and Public Trust (2025). This document defines "high-impact" as follows: "AI is considered high-impact when its output serves as a principal basis for decisions or actions that have a legal, material, binding, or significant effect on rights or safety."

[83] *Id.* at 17.

[84] *Id.* at 24. These OMB guidelines for federal agencies also reflect country-wide efforts to increase AI oversight and disclosure in government. In 2024 alone, 12 laws regulating public sector uses of AI were passed by state legislatures and over 40 bills were introduced. Quinn Anex-Ries, *Regulating Public Sector AI: Emerging Trends in State Legislation*, Ctr. for Democracy & Tech. (Jan. 10, 2025), https://cdt.org/insights/regulating-public-sector-ai-emerging-trends-in-state-legislation/. *See also* OMB Circular A-4 (asking for transparency in regulatory analysis, "[agencies] should clearly set out the basic assumptions, methods, and data underlying the analysis")

These OMB guidelines are consistent with key executive action from the first Trump administration. In his December 2020 Executive Order, "Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government," President Trump acknowledged that "the ongoing adoption and acceptance of AI will depend significantly on public trust," and required agencies to "design, develop, acquire, and use AI in a manner that fosters public trust." Exec. Order No. 13960, 85 Fed. Reg. 78,939 (Dec. 8, 2020). The Order specified that "the design, development, acquisition, and use of AI, as well as relevant inputs and outputs of particular AI applications, should be well documented and traceable." Exec. Order No. 13960. Like the Administrative Procedure Act and Clean Air Act's procedural requirements, this Order compels disclosure in the interest of avoiding hidden errors and biases in agency decision-making and providing the public a meaningful opportunity to comment on agency practice. To the extent that EPA used AI in this rulemaking, it is consequently obligated to document its use and any relevant inputs and outputs for the public.

In addition, given the rapid and developing use of AI and the importance of the associated obligations concerning its proper use and disclosure, EPA cannot reasonably remain silent on the use of AI in its rulemaking even where no such product was used.[85] To ensure public confidence in EPA's compliance with rulemaking requirements, and judicial confidence in their ability to review a "complete record," EPA should confirm whether its proposed and final rulemakings were developed without those tools. The public is entitled to know whether the absence of information on the agency's use of AI is because none was in fact used, or whether it was used, and how.

Consistent with these requirements and principles, in this proposed rulemaking, EPA was obligated to disclose, first, whether it has used or plans to use AI as part of this proceeding. If so, EPA was obligated to disclose the particular AI product it has used and why it was selected, how that product was procured, and whether the use is high-impact. In addition, EPA was obligated to disclose the objective function being optimized by AI, the method used for that optimization, AI's input and output variables, and any assumptions made by the Agency in using AI.[86] EPA was also obligated to disclose how agency staff used AI-produced information, including any quality control, peer review, or other validation performed. And if EPA intends to use AI in its notice-and-comment responses, it similarly was obligated to disclose this practice and ensure sufficient human review to reach the threshold of reasoned consideration. Lastly, EPA was obligated to disclose what measures it took to ensure that its use of AI complied with applicable

[85] *See* Ellie Borst, *EPA use of artificial intelligence skyrockets*, E&E News (July 30, 2025), https://subscriber.politicopro.com/article/eenews/2025/07/30/epa-use-of-artificial-intelligence-skyrockets-00481738.

[86] *See* Jordan Ascher, *Seeking Disclosure of AI Usage in Agency Rulemaking*, Yale Journal on Regulation (July 19, 2025), https://www.yalejreg.com/nc/seeking-disclosure-of-ai-usage-in-agency-rulemaking-by-jordan-ascher/.

data security and privacy requirements. To that end, it was obligated to disclose whether and to what extent any persons and entities not employed by the Agency developed, modified, provided access to, or used AI in the course of the Agency's decision-making process. To the extent EPA has failed to make any of the disclosures in this paragraph, it has deprived the public of an opportunity to comment on key aspects of the Agency's rulemaking, and so the final rule will be invalid.

VIII. Conclusion

EPA's alternative proposal to repeal certain of the 2024 CPS standards of performance and emission guideline requirements is fundamentally flawed. As detailed in this comment, EPA's reversals of its prior determinations of the best system of emission reduction are unreasonable, arbitrary, and capricious. EPA has ignored basic tenets of administrative law by offering vague and inadequate justifications for its changes in position. And the Agency has failed entirely to consider any alternatives other than repeal, disregarding its legal mandate to set limits on greenhouse gas emissions from these sources. EPA must withdraw the alternative proposal.

Respectfully submitted,

Jason Rylander
Climate Law Institute
Center for Biological Diversity

Noha Haggag
Tomás Carbonell
Environmental Defense Fund

Ann Weeks
Frank Sturges
Alan Masinter
Clean Air Task Force

Meredith Hankins
David Doniger
Amanda Levin
Yuqi Zhu
Natural Resources Defense Council

Hana V. Vizcarra
Earthjustice

Andres Restrepo
Sierra Club

List of Attachments

Attachment A – Modeling

- Memorandum, FACETS Energy System Modeling (Aug. 6, 2025)

Attachment B – Part II Cited Sources: Legal Authority

- Dena Adler and Andrew Stawasz, Inst. for Policy Integrity, *Defining "Adequately Demonstrated:" EPA's Long History of Forward-Looking Regulations under Section 111 of the Clean Air Act* (2024) https://policyintegrity.org/files/publications/EPA's_Long_History_of_ForwardLooking_Standards_Under_Section_111_of_the_Clean_Air_Act_Policy_Brief.pdf.
- Larry Parker, et al., Congressional Research Service, Climate Change: Potential Regulation of Stationary Greenhouse Gas Sources Under the Clean Air Act (2009).

Attachment C – Part V Cited Sources: Technical Reports and Resources

- Andover Technology Partners, *History of Flexible Compliance with Science-Based and Technology-Based Stationary Source Air Pollution Regulations* (Dec. 18, 2023), https://www.andovertechnology.com/wp-content/uploads/2023/12/c_23_2a_CAELP_final.pdf.
- Andover Technology Partners, *Natural Gas Cofiring for Coal-Fired Utility Boilers* (Feb. 12, 2022).
- Andover Technology Partners, *Natural Gas Conversion and Cofiring for Coal-Fired Utility Boilers* (Nov. 30, 2014).
- Babcock and Wilcox, *Natural Gas Conversions of Existing Coal-Fired Boilers* (2010).
- Lawrence Berry and Nathan Schindler, *Practical Considerations for Converting Boilers to Burn Gas*, POWER (Oct. 1, 2013), https://www.powermag.com/practical-considerations-for-converting-boilers-to-burn-gas/.
- Joe Brown, *De-Bunking the Myths of Coal-to-Gas Conversions*, Power Engineering (Dec. 2, 2015), https://www.power-eng.com/coal/de-bunking-the-myths-of-coal-to-gas-conversions/.
- *ICF International, Documentation for Lateral Cost Estimation* (2024), Doc. ID No. EPA-HQOAR-2023-0072-9095, Attachment 18.
- Jason C. Lee and Michael Coyle, *Leveraging Natural Gas: Technical Considerations for the Conversion of Existing Coal-Fired Boilers* (2014)
- Sargent & Lundy, *Natural Gas Co-firing Memo* (Mar. 2023), Doc. ID No. EPA-HQ-OAR-2023-0072-0019.
- Jim Staudt, Andover Technology Partners, *Natural Gas Cofiring on Coal Fired Boilers* (July 25, 2025).

Attachment D – Part V Cited Sources: U.S. Energy Information Administration Resources

- U.S. EIA, *Assumptions to the Annual Energy Outlook 2025: Electricity Market Module* (Apr. 2025), https://www.eia.gov/outlooks/aeo/assumptions/pdf/EMM_Assumptions.pdf.

- U.S. EIA, Form EIA-860 Annual Electric Generator Report, Table 8.2: Average Tested Heat Rates by Prime Mover and Energy Source 2013-2023, https://www.eia.gov/electricity/annual/html/epa_08_02.html.
- U.S. EIA, *Electric generators plan more natural gas-fired capacity after few additions in 2024* (2025), https://www.eia.gov/todayinenergy/detail.php?id=65464#:~:text=Developers%20plan%20to%20add%2018.7,power%20plant%20at%20Plaquemines%20LNG.
- U.S. EIA, *Natural Gas Explained* (Oct. 31, 2024). https://www.eia.gov/energyexplained/natural-gas/use-of-natural-gas.php.
- U.S. EIA, *Natural Gas Gross Withdrawals and Production, Marketed Production,* https://www.eia.gov/dnav/ng/NG_PROD_SUM_A_EPG0_VGM_MMCF_A.htm.

Attachment E – Part V Cited Sources: Company Comments, IRPs, and Annual Reports

- BP Annual Report and Form 20-F 2024 (2025), https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/investors/bp-annual-report-and-form-20f-2024.pdf.
- Chevron 2024 Annual Report (2024), https://www.chevron.com/newsroom/media/publications/annual-report.
- Georgia Power 2025 Integrated Resource Plan (Jan. 2025), https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/2025-Integrated-Resource-Plan.pdf.
- Comments of Shell Oil Company on Notice of Proposed Rulemaking on Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program (Oct. 30, 2018), Doc. ID No. EPA-HQ-OAR-2017-0355-23716.

Attachment F – Part VII Cited Sources: Artificial Intelligence

- Quinn Anex-Ries, Regulating Public Sector AI: Emerging Trends in State Legislation, Ctr. for Democracy & Tech. (Jan. 10, 2025), https://cdt.org/insights/regulating-public-sector-ai-emerging-trends-in-state-legislation/.
- Jordan Ascher, Seeking Disclosure of AI Usage in Agency Rulemaking, Yale Journal on Regulation (July 19, 2025), https://www.yalejreg.com/nc/seeking-disclosure-of-ai-usage-in-agency-rulemaking-by-jordan-ascher/.
- Ellie Borst, EPA use of artificial intelligence skyrockets, E&E News (July 30, 2025), https://subscriber.politicopro.com/article/eenews/2025/07/30/epa-use-of-artificial-intelligence-skyrockets-00481738.
- Office of Mgmt. & Budget, Exec. Office of the President, Memorandum M-25-21, Accelerating Federal Use of AI through Innovation, Governance, and Public Trust (2025).