Center for American Progress

Evergreen Action

August 8, 2023

The Honorable Michael S. Regan
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

Mr. Joseph Goffman
Principal Deputy Assistant Administrator, Office of Air and Radiation
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

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

Joint Comments on 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

Dear Administrator Regan,

The undersigned organizations are pleased to comment in favor of EPA's proposed regulations regarding carbon pollution from new and existing power plants. We encourage the agency to finalize robust rules that reduce carbon pollution from more emitters, on the fastest timeline possible.

Together, we represent 29 climate and environmental organizations: Evergreen Action; Center for American Progress; League of Conservation Voters; Sunrise Movement; Rewiring America; Southern Environmental Law Center; Environmental Law & Policy Center; Chesapeake Climate Action Network; Common Defense; ClimateVoice; George Mason University Center for Climate Change Communication; People's Justice Council; Earth Ethics, Inc.; Climate Changemakers; Elders Climate Action; Chesapeake Bay Foundation; Climate Generation; US Partnership for Education for Sustainable Development; Community for Earth, First Unitarian Church; Action for the Climate Emergency (ACE); Metro Climate Action Team (MCAT); NW Energy Coalition; Earth Bill Network; Endangered Species Coalition; Southern Oregon Climate Action Now; Ecumenical Ministries of Oregon and Oregon Interfaith Power & Light; Alabama Interfaith Power & Light; Pennsylvania Interfaith Power & Light; and Consolidated Oregon Indivisible Network.

Power plants are an enormous source of climate-warming pollution in the country, producing 25 percent of all U.S. greenhouse gas emissions. Yet, EPA's proposed standards fail to regulate the bulk of the power sector, as they are expected to cover only 22 percent of existing gas capacity in 2035 – the dominant pollution source – while waiving controls on many coal plants for over a decade. As demonstrated below, it is feasible and cost-effective for a larger percentage of power plants to meet more stringent standards. In this time of electrification across economic sectors, massive public investments in power sector pollution control, and rapid grid expansion, electricity generators will be ever more able to afford pollution controls, and those controls can help create a more resilient, reliable grid. The final rule must match the scale of the power sector's emissions and its threat to public health.

The Need for Strong Standards and a Clean Grid

Finalizing, and then implementing, robust rules is essential to fulfilling EPA's statutory requirements under the Clean Air Act to protect Americans' health and welfare from climate pollution. EPA leaving major sources of carbon pollution unregulated when the agency has clear and reinforced authority to limit these emissions would be a dereliction of duty.[1] These standards are also crucial because the U.S. is not currently on track to achieve its science-based climate targets.

Further, as other sectors – from vehicles to buildings to industrial facilities – increasingly move off fossil fuels to electricity, the power sector is the critical foundation for progress. The massive investments in the Inflation Reduction Act and Bipartisan Infrastructure Law are helping to position America for the flexible, expanded, and clean power grid of the future. Clear pollution standards covering new and existing facilities in the fossil fleet, and reflecting their use under changing grid conditions where generators increasingly deploy renewable power and storage, will avoid excess pollution from fossil fuel-based plants as the larger system evolves and expands. A virtuous cycle is possible, as multiple policy instruments combine to clean existing pollution, fund grid upgrades, and plan and build a power system that no longer is a major pollution source.

At the outset, we wish to emphasize that we are poised and ready to work with EPA, communities, states, and generators as these rules are implemented. As EPA has correctly emphasized in the proposal, the "best system of emission reduction" (BSER) -based emission rates with which in the case of new sources, owners and operators, and, with respect to existing sources, states, along with owners and operators, must comply may be met in a variety of ways. This flexibility is inherent in Section 111,

[1] For more information on EPA's clear Clean Air Act authority to set greenhouse gas standards for power plants, which was recently reinforced by the Clean Air Act Amendments of 2022 contained in the Inflation Reduction Act, see: https://www.eli.org/sites/default/files/files-pdf/53.10017.pdf, p. 10033-10034.

under which EPA determines the BSER and achievable pollution control levels, while owners, operators and, in the cases of existing sources, states, retain flexibility as to how that level of pollution control will be achieved. These implementation flexibilities allow states and utilities to choose a compliance pathway that optimizes for each state's circumstances and economics. For example, states can choose to comply with the emissions standard by increasing renewable energy generation and storage, which may be accompanied by greater financial and public health benefits. Especially in light of the unjust pollution levels in communities of color and other overburdened communities across the country, it will be critical to ensure implementation planning is focused on reducing emissions in ways that directly and equitably address community air pollution burdens.

This rule will support and reinforce a reliable electric grid in the decades to come. Because of underlying economic trends and Congressional support for renewable energy, energy storage, carbon capture, and clean hydrogen, the electric grid is already undergoing significant change. Because of long-term tax credits in the Inflation Reduction Act, among other major funding programs in that statute, low-cost renewable energy is expected to play an increasingly large role in power supply—and many fossil power plants are expected to ramp down or play more load-following roles because of economic factors. Recent incidents, including the 2021 Texas blackouts, have been linked to unexpected failures of fossil-fueled power plants.[2] During the summer 2023 heatwave across the South, renewable power generation has been credited with keeping the lights on.[3] Although EPA's proposal emphatically does not regulate the grid itself, it is of course appropriate for EPA to consider reliability impacts from its proposal (and indeed, the Clean Air Act, as amended by the Inflation Reduction Act, encourages ongoing EPA engagement in tracking how changes in the domestic power mix affect pollution reduction and vice versa).[4] And, indeed, EPA's proposal recognizes and accommodates this reality, by creating subcategories for plants based on capacity factor and retirement date, allowing plants the flexibility to continue serving reliability needs. The ability to tailor their own plans for compliance and to consider Remaining Useful Life and Other Factors (RULOF) when needed provides states flexibility to maintain reliability in response to their unique situations. Clean energy resources can maintain a safe, reliable electric grid.[5]

---

[2] Erin Douglas, "Texas Largely Relies on Natural Gas for Power. It Wasn't Ready for the Extreme Cold.," The Texas Tribune, February 16, 2021, https://www.texastribune.org/2021/02/16/natural-gas-power-storm/.

[3] Catherine Rampbell, "Renewables are saving Texas. Again. So give them their due." Washington Post, July 4, 2023. https://www.washingtonpost.com/opinions/2023/07/04/renewable-energy-texas-heat/

[4] Low emissions electricity program, 42 U.S. Code § 7435.

[5] Elise Gout, "A Clean Power Grid Is a Reliable Power Grid," Center for American Progress, February 24, 2022, https://www.americanprogress.org/article/a-clean-power-grid-is-a-reliable-power-grid/

This comment letter also focuses on ways to strengthen the rule. At present, though a major step forward, it is worryingly weak in a few key regards. For example, the proposed rule does not cover the bulk of gas facilities, addressing only 22% of projected existing gas capacity in 2035 (including 31% of gas combined cycle capacity) and leaving hundreds of facilities' carbon emissions unregulated. Gas facilities are likely to be the *dominant* source of carbon pollution on the grid, as coal plants—which are truly noneconomic under almost all conditions—continue to retire and limit operations.[6] EPA is right to control coal plant emissions, but it needs to look beyond yesterday's power plants; gas is far more likely to persist as a pollution source into the 2030s and 2040s, as the agency's own modeling shows, and warrants comprehensive regulation under the Act's clear terms. There are several other actions that EPA must take to strengthen the rule and achieve feasible emissions reductions.

We urge the agency to strengthen its proposal in five key ways, by:

1. Expanding the scope of existing gas plants covered by the rule
2. Accelerating and strengthening compliance timelines
3. Increasing the stringency of the standards for new gas plants
4. Establishing strict criteria and verification of low-GHG hydrogen and clearly delineating its role
5. Requiring comprehensive analysis and full implementation in state plans

Expanding the scope of existing gas plants covered by the rule

EPA's proposed rule would leave the carbon emissions from the vast majority of existing gas plants wholly unregulated. The agency must strengthen this provision. EPA should either lower the thresholds down to 100 MW and 40% capacity factor, or alternatively, set a threshold at the plant-level instead of the unit-level.[7]

We estimate that only 31 percent of combined cycle gas capacity in 2035 would be covered by EPA's rule as proposed (about 102 GW out of 326 GW total). If all types of gas plants are included in the analysis, including simple combustion turbines, covered units represent only 22% of gas capacity in 2035.

This extremely lax cutoff for existing gas plants means that a large contributor to climate emissions would remain unregulated under the rule as proposed. As other sources (such as existing coal plants) begin to comply with emissions standards, these unregulated gas units could see increased utilization—producing increased carbon pollution and criteria pollution, including in disadvantaged communities. The comprehensive coverage required by section 111 of the Act, and fundamental

[6] Ben King et. al, "Taking Stock 2023: US Emissions Projections after the Inflation Reduction Act," Rhodium Group, July 20, 2023, https://rhg.com/research/taking-stock-2023/
[7] "111 - Existing Gas Coverage", Clean Air Task Force, Accessed August 5, 2023, https://cdn.catf.us/wp-content/uploads/2023/07/26162849/carbon-pollution-standards-existing-gas-coverage.pdf

administrative law principles of reasoned decision-making, do not afford the agency the discretion to simply decline to regulate the bulk of the sector, especially when the consequences appear to be increased pollution.[8] At its core, Congress, via the Act, charged EPA with controlling dangerous pollution from whole industrial categories. Standards that fail to control carbon pollution from a dominant portion of the power industry could appear arbitrary and inconsistent with those mandates.

Again, gas facilities will be the most significant source of carbon pollution on the grid into the 2030s and 2040s.[9] EPA's own analysis projects an 8% increase in gas use for electricity in 2030 compared to the baseline.[10] Abatement technologies, including carbon capture and hydrogen co-firing, are commercially available and adequately demonstrated for existing gas plants, including those units below 300 megawatt capacity and 50% capacity factor.[11] According to the U.S. Energy Information Administration, existing gas plants produced 43 percent of power-sector CO2 emissions in 2022.[12] As emissions from other sources fall, EPA projects that number to increase to 74 percent of power-sector GHG emissions by 2035 in its baseline.[13] Leaving three-quarters of carbon pollution from gas plants largely unregulated would be unacceptable when proven abatement technologies are available today. Leaving such a major source untouched until an unspecified future rule date leaves Americans unduly exposed to harmful pollution that EPA is required by statute to regulate.

EPA must cover all existing gas plants, to fully comply with its Clean Air Act mandate. If that is not possible in this rule, then the Agency should at the very least expand

---

[8] Brief for Thomas C. Jorling as Amicus Curiae Supporting Respondents, West Virginia v. EPA 597 U.S. ___ (2022) (No. 20-1530)

[9] Ben King et. al, "Taking Stock 2023: US Emissions Projections after the Inflation Reduction Act," Rhodium Group, July 20, 2023, https://rhg.com/research/taking-stock-2023/

[10] U.S. Environmental Protection Agency, Integrated Proposal Modeling and Updated Baseline Analysis, July 7, 2023, https://www.epa.gov/system/files/documents/2023-07/Integrated%20Proposal%20Modeling%20and%20Updated%20Baseline%20Analysis.pdf, p. 12.

[11] According to the International Energy Agency, there are now around 40 commercial carbon capture facilities in operation globally, with a total annual capture capacity of more than 45 Mt CO2 (https://www.iea.org/energy-system/carbon-capture-utilisation-and-storage). According to the Global CCS Institute, 119 CCUS projects around the world are already operational, operating, or completed as of March 2023. This includes both pilot and demonstration projects and also large-scale commercial facilities. This number includes 40 operational, operating, or completed projects that specifically capture carbon dioxide from power generation facilities—some of which began operating decades ago. (*https://co2re.co/FacilityData).* The technology-forcing nature of BSER has been repeatedly and for decades upheld in the courts (see *Portland Cement Ass'n v. Ruckelshaus*, D.C. Cir., 1973; and *Essex Chemical Corp. v. Ruckelshaus*, DC Cir., 1973). On the cost-reasonableness of control technologies, see at p. 22-23: https://cdn.catf.us/wp-content/uploads/2022/06/08125915/epa-ct-white-paper-comments.pdf?_gl=1*1nzu2g1*_gcl_au*MTQ0ODMxMDI5MC4xNjkwMjk3MTY1.

[12] "Frequently Asked Questions (FAQs)", U.S. Energy Information Administration (EIA), accessed July 22, 2023, https://www.eia.gov/tools/faqs/faq.php.

[13] See proposal p. 461.

the scope of coverage as much as possible and commit to a future rulemaking within the next two years that regulates the emissions of the remaining gas fleet.

EPA requested comment on lowering its threshold from 300 to 100 MW and 50% to 40% capacity factor. These changes would increase the percent of existing gas generation covered by the rule in 2035 from the very low proportion of units currently included. These changes are a common sense first step that would begin to substantially address the major contribution that existing gas plants make to climate pollution. Setting a lower capacity factor is especially important if some units are expected to reduce their utilization to just below this level.

An additional approach that EPA also has raised is setting the subcategory for regulation based on plant-level capacity instead of unit-level capacity.[14] EPA has precedent for this.[15] Since many gas units can be co-located at one plant, plant-wide applicability allows for a more logical and cost-effective approach.[16] A multi-unit plant is still a single stationary source with a single operator, and carbon capture systems could be installed at the plant-level, with the flue gasses of multiple units sharing one carbon capture system—helping take advantage of economies of scale. Many of the large, multi-unit plants excluded under EPA's proposed rule could install CCS infrastructure at a lower cost per MW due to the high plant-level capacity of their combined units. EPA, for example, could define the subcategory such that any plant above 300 MW combined capacity and 40% capacity factor would be covered. Whichever threshold EPA sets, the agency should be sure to define the subcategory such that a majority of gas plant emissions would be regulated.

As proposed, the existing gas rule leaves the carbon pollution of some of the highest-emitting power plants in the country totally unregulated. To illustrate this point, six of the ten largest gas power plants in the country by nameplate capacity

---

[14] U.S. Environmental Protection Agency, Integrated Proposal Modeling and Updated Baseline Analysis, July 7, 2023, https://www.epa.gov/system/files/documents/2023-07/Integrated%20Proposal%20Modeling%20and%20Updated%20Baseline%20Analysis.pdf

[15] Ne. Md. Waste Disposal Auth. v. EPA, 358 F.3d 936, 946–947 (D.C. Cir. 2004). In this case, the court supported EPA's flexibility to create subcategories under Section 129 of the Clean Air Act for municipal waste combustors, as long as the agency provides a reasoned basis. Both Sections 111 and 129 include the same allowable subcategories (based on class, type, and size). According to the D.C. Circuit, "'Class' is an ambiguous term. It is not defined in the Clean Air Act, and the dictionary definition -- 'a group, set, or kind marked by common attributes' -- could hardly be more flexible. WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 416 (1976) (3rd meaning). There is certainly nothing about the term or its dictionary definition that precludes the use of aggregate plant capacity as a factor for drawing distinctions among units."

[16] "Technology Readiness and Costs of CCS", Global CCS Institute, 27-31, Accessed August 5, 2023 https://www.globalccsinstitute.com/wp-content/uploads/2021/03/Technology-Readiness-and-Costs-for-CCS-2021-1.pdf

are projected to have no units above 300 MW and 50% capacity factor in 2035.[17] That includes the Gila River Project in Arizona, the third largest gas power plant in the country, with a nameplate capacity of 2,476 MW across eight units. These large plants have an economy of scale that makes carbon capture and other systems of emission reduction particularly cost-effective and suitable for regulation in this rule.

Accelerating and strengthening compliance timelines

EPA should require regulated sources to reduce emissions on the fastest timeline possible. In many cases, that means moving forward compliance deadlines to 2030.

In the proposed rule, EPA would allow some sources (such as gas plants using the hydrogen co-firing BSER) until 2038 before fully complying with emissions standards. That is 15 years from now. Such a long lead time is not reflective of the best system of emission reduction. Abatement technologies like carbon capture are commercially available now.[18] Plants do not need 12 or 15 years to comply with emissions standards.[19]

Allowing so long for compliance exposes Americans to the harms and risks of climate pollution at unacceptable levels for years longer than necessary. Power plants must begin taking action to reduce their pollution now. As such, the increments of progress for gas plants and retirement milestones for coal plants must be comprehensive and fully enforced. This enforcement is essential to ensuring that power plants are making strides towards meeting the emissions guidelines in 2030 or 2035.

Existing gas

EPA should move all compliance dates for existing gas plants to 2030. We suggest pursuing one BSER based on carbon capture, leaving hydrogen co-firing available as a compliance option, and requiring full compliance with 90% emissions reduction requirements by 2030. (We will discuss this further below in Section 4 on hydrogen.)

---

[17] These plants include: Gila River Project in Gila Bend, AZ (2476 MW), Union Power Facility in El Dorado, AR (2428 MW), Sanford CC in DeBary, FL (2377.8 MW), Hines Energy Complex in Bartow, FL (2266.3 MW), H.L. Culbreath Bayside in Tampa, FL (2014.4 MW), and Crystal River CC in Crystal River, FL (1970.6 MW).

[18] Carbon capture has operated for decades (see the CO2RE database from the Global CCS Institute: https://co2re.co/FacilityData)

[19] The Boundary Dam plant in Saskatchewan, Canada, was operational just four years and seven months after an initial engineering contractor was hired to begin planning the design of the project. This period included time for pipelines and injection wells to be constructed. (for more information, see: https://sequestration.mit.edu/tools/projects/boundary_dam.html). The Petra Nova capture facility in Texas was operational four years and four months after a draft environmental impact statement (the first step in the permitting process) was issued by the federal government—and just two years and six months after construction commenced (see: https://www.energy.gov/fecm/petra-nova-wa-parish-project).

2035 and 2038 are over a decade into the future, and such timelines are inconsistent with the availability of abatement technologies available today. A FEED study for the San Juan Generating Station in New Mexico that ran from 2019 to 2022 estimated that a carbon capture system at the plant could be shovel-ready and operational by 2025.[20] Even including permitting timelines, the Petra Nova and Boundary Dam CCS projects were each operational approximately four years after the process commenced.[2122] Compliance deadlines beyond 2030 are too far into the future.

New gas

In principle, we oppose a phased-in approach for the standard for new gas plants. EPA should require full compliance (i.e., 90% emissions reductions for baseload plants, based on a single BSER of CCS) to begin upon the first operation of these new plants. CO2 abatement technologies like carbon capture have been operating for decades, and any modern plant that is proposed today should be required to take advantage of the best available technology, upon its initial operation. Building CCS or H2 co-firing infrastructure at the same time as construction also makes the most sense economically and logistically—this approach is *much* more cost-effective and should be defined as the BSER.[23] If the equipment is installed during construction then there is no logical reason to allow plants to wait until 2035 to turn it on. Based on the history of New Source Performance Standards, an approach that does not phase in is easier to justify.[24]

At the very least, an approach that does not fully phase in until 2035 or 2038 is unacceptable. If EPA insists on a phased-in approach, the final phase should begin no later than 2030. That would be sufficient time for any permits or pipeline infrastructure required for compliance.[25] We understand that EPA proposed these late dates in part out of concerns over how best to phase demand for infrastructure construction. But EPA's own modeling—and statements by many utilities—strongly

---

[20] Enchant Energy Corporation, "Update on Large-Scale Commercial Carbon Capture Retrofit of the San Juan Generating Station," Accessed August 5, 2023, https://netl.doe.gov/sites/default/files/netl-file/21CMOG_CCUS_Mandelstam.pdf

[21] Carbon Capture and Sequestration Technologies at MIT, "Boundary Dam Fact Sheet: Carbon Dioxide Capture and Storage Project", Accessed August 5, 2023, https://sequestration.mit.edu/tools/projects/boundary_dam.html

[22] U.S. Department of Energy, "Petra Nova – W.A. Parish Project", Accessed August 5, 2023, https://www.energy.gov/fecm/petra-nova-wa-parish-project

[23] The incremental cost of capturing CO2 at a new-build gas plant that uses the Allam Cycle is estimated at only $2 per ton (compared to $52-120 per ton for CCS retrofits): https://www.brattle.com/wp-content/uploads/2021/05/19790_the_emerging_value_of_ccs_for_utilities_brattle_aug_12_2020.pdf, p. 12.

[24] "NSPS for GHG Emissions from New, Modified, and Reconstructed Electric Utility Generating Units", U.S. Environmental Protection Agency, accessed August 6, 2023, https://www.epa.gov/stationary-sources-air-pollution/nsps-ghg-emissions-new-modified-and-reconstructed-electric-utility

[25] See *supra* notes 21 and 22.

suggest that though hydrogen or CCS compliance pathways are available, many facilities may in fact opt for alternative technologies with lower costs. Accordingly, infrastructure or fuel demands for compliance are likely to be gradual, allowing for greater coverage of the fleet as a whole at an earlier date.

Existing coal

We commend EPA for requiring compliance with the BSER by 2030 for existing coal plants that operators plan to run indefinitely. While it may be reasonable for EPA to provide a less stringent BSER for plants intending to retire imminently, EPA should tighten the timelines for the retirement subcategories. We urge EPA to move forward the final date for this subcategory to 2035 instead of 2040. Plants that will continue operating through and after 2035 should be required to achieve the BSER of 90% carbon capture by 2030.

Additionally, we recommend that plants retiring between 2030 to 2034 fall into a low-load subcategory running less than 20% of the time, and meet a standard based on limiting maintaining historical emission rates.

Coal plants are frequently the least economic and highest-polluting source of electricity on the grid. A gas co-firing requirement for the 2035-2039 proposed subcategory would reduce carbon pollution by only 16% compared to unabated operations. Allowing largely un-abated operation of such a highly-polluting source of electricity through 2039—when technologies like carbon capture are available in the near term—cannot be consistent with the best system of emission reduction. Allowing dirty coal plants to operate another 16 years without significant emissions reduction would also fly in the face of EPA's statutory mandate to protect Americans' health and welfare from climate pollution, including from the Clean Air Act Amendments of 2022.[26] That is not to mention the urgent timelines for decarbonization identified by climate scientists. Because of their very high pollution burden (including outsized contributions to climate change and their deadly health effects in disadvantaged communities), EPA would likely see large climate and health benefits from moving up the timeline for the retirement subcategory.

EPA should also ensure that a unit operator cannot switch a unit from one subcategory to another during the 2030s, so as to escape earlier interim control requirements.

EPA must fully enforce the increments of progress for gas EGUs and retirement milestones for coal EGUs.

[26] Greg Dotson and Dustin J. Maghamfar, "The Clean Air Act Amendments of 2022: Clean Air, Climate Change, and the Inflation Reduction Act", at 10033, January 27, 2023, https://www.eli.org/sites/default/files/files-pdf/53.10017.pdf

The increments of progress and retirement milestones are a critical component of the rule. Proper planning requires clear, enforceable commitments with multiple interim milestones that will identify non-compliance well in advance of any potential changes in operating status. Given the long lead times for EGUs to comply with the emission standards, EPA has to ensure that EGUs are taking incremental steps this decade that prove they will be ready to comply with the applicable emission standard on Day 1.

First, EPA should set and finalize date-specific compliance deadlines, rather than leaving it to states' discretion, or at minimum, create acceptable windows and timeframes for each increment. By setting date-specific deadlines directly, EPA ensures that both states and EGUs will be held accountable to legally enforceable deadlines and that EGUs will be taking meaningful steps toward meeting compliance.

EPA should also take careful measures to ensure that coal plants do not continue unabated emissions past plant owners' planned retirements. EPA should revoke applicable permits for EGUs that have committed to retiring, including Title V permits – and add clear permit conditions requiring retirement where plants have selected this option. If a plant claims that it will retire by 2040, it must be permanent and permits be automatically revoked on the committed date. Otherwise, a plant may be able to continue operating with unabated emissions until 2040, reverse its retirement commitments, and have not taken any steps towards meeting the long-term coal plant standard and installing CCS technologies being 10 years out of compliance.

There must also be full and public transparency for each EGU's compliance plan and proof of each increment or milestone met for their compliance pathway. EPA should also consider establishing one centralized site, with a searchable database, that includes all the information that will have to be submitted directly to EPA. If not EPA, state regulatory authorities should establish websites to centralize state-wide data. This centralization would increase transparency, ensure a high standard of accessibility, and make it easier for local communities or relevant stakeholders to navigate the data. EPA should finalize the requirement to report and publish subcategory designations, compliance schedules, proof for increments of progress and retirement milestones, emissions data, and more.

Increasing the stringency of the standards for new gas plants

EPA should increase the stringency of the standards applying to new gas plants, in order to take full advantage of adequately demonstrated, cost-reasonable technologies and to prevent cliffs around which plants may be able to modestly reduce their operations and face a far less stringent emissions reduction requirement.

EPA projects that natural gas combustion turbine generation is likely to decrease as capacity factors decline and natural gas turbines increasingly play an intermediate or peaking role in the grid and operate less frequently, due to increasing amounts of low-emitting generation. Therefore, if we expect more new gas plants to fall into the intermediate category rather than baseload, it is crucial for intermediate plants to be subject to a higher emissions standard.

First, EPA should amend the thresholds for the gas plant subcategories. The thresholds should be moved from 0-20% to 0-10% for peaker plants, from 20-50% to 10-40% for intermediate plants, and from 50% and up to 40% and up for baseload plants. As EPA recognizes, increasing renewable energy penetration on the grid may mean many facilities operate in load-following ways. This shift in grid operations, and hence plant operations, however, is not a rationale for limited pollution coverage. It is a reason why the rules must be designed to control pollution under current and likely operating conditions.

Currently, the dividing line between peaker plants and intermediate plants is set at 20% capacity factor. Plants in the peaker subcategory (less than 20% capacity factor) face essentially no requirements to reduce emissions—needing only to burn a "lower-emitting" fuel such as gas or fuel oil. This high threshold of 20% is far too lenient. Co-firing with 30% hydrogen (and at much higher levels) is cost-reasonable for plants down to 10% capacity factor, and EPA should lower this threshold to ensure that plants running more than 10% face some cap on their emissions beyond simply burning gas or fuel oil.[27]

The threshold between intermediate and baseload plants is proposed at up to a 50% capacity factor. The average capacity factor for a utility-scale natural gas combined cycle power plant was 56% in 2022.[28] With the intermediate load category ranging from capacity factors between 20-50%, and a drastically weaker emission standard in the intermediate load category, power plants can modestly reduce their operations to just below 50% CF, and only be subject to a 12% emission reduction.

The threshold should be lowered to no higher than a 40% capacity factor, at which point both carbon capture and high levels of hydrogen co-firing are cost-reasonable. Starting at 40% capacity factor, 90% CCS is actually cheaper than hydrogen co-firing according to Clean Air Task Force analysis.[29] It is clear that 90% carbon capture is

---

[27] Clean Air Task Force, Comment Letter on EPA's "Draft White Paper: Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from Combustion Turbine Electric Generating Units", at 23, June 6, 2022 https://cdn.catf.us/wp-content/uploads/2022/06/08125915/epa-ct-white-paper-comments.pdf

[28] "Electric Power Monthly - U.S. Energy Information Administration (EIA)," accessed July 22, 2023, https://www.eia.gov/electricity/monthly/epm_table_grapher.php.

[29] Ibid.

cost-reasonable and adequately demonstrated for gas plants at 40% capacity factor, and the threshold for the more stringent baseload BSER should begin at this level.

EPA should phase up the emission standard for intermediate load plants. Though we anticipate implementation flexibilities will result in many utilities opting for increased renewable power and storage, it is clear that more existing fossil facilities can be controlled onsite via the BSER identified for baseload plants. EPA needs to fill this gap by ensuring that plants operating under anticipated grid conditions face appropriate BSER-based standards. Specifically, EPA should make the emission standard for intermediate load plants more stringent by scaling up the emission standard based on hydrogen co-firing by 2038, following the proposal's approach for baseload plants. The emission standard for intermediate load plants is only a 12% reduction in carbon emissions, compared to a 90% reduction in emissions for baseload plants. These emission standards are far too disparate for plants that can meet similar standards.

As discussed in the rulemaking, all major combustion turbine manufacturers are creating turbines that can co-fire hydrogen, with some available models co-firing 75% H2 by volume. A hydrogen BSER is most suitable for these plants, rather than CCS, because of its lower cost from intermediate capacity factors.[30] It is critical that these plants do not lock in business-as-usual, high-emitting technologies when turbines that co-fire high percentages of low-GHG hydrogen are already available on the market.

Establishing strict criteria and verification of low-GHG hydrogen and clearly delineating its role

For any emission standard based on co-firing low-GHG hydrogen, EPA must use strict criteria to set the standard of performance. The criteria must consider the lowest-emitting hydrogen commercially available, which would exclude SMR-produced hydrogen and would account for the carbon emissions of any electricity used for electrolysis. For the purposes of setting a standard of performance, EPA must use the lowest-emission hydrogen commercially available and must consider the following three pillars in accounting for lifecycle emissions and achieving zero-emission hydrogen:[31]

1. Additional clean supply (only clean power, not otherwise serving the grid, is allowed to qualify as clean supply for electrolyzer loads)

[30] Clean Air Task Force, Comment Letter on EPA's "Draft White Paper: Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from Combustion Turbine Electric Generating Units", at 23, June 6, 2022 https://cdn.catf.us/wp-content/uploads/2022/06/08125915/epa-ct-white-paper-comments.pdf

[31] Rachel Fakhry, "New Analysis: The 3 Pillars Will Support Large Hydrogen Deployment," June 20, 2023, https://www.nrdc.org/bio/rachel-fakhry/new-analysis-3-pillars-will-support-large-hydrogen-deployment

2. Hourly matching (time matching must occur at the hourly level between the clean power portfolio production and power consumption at the electrolyzer)
3. Deliverability (clean power must be produced in the same grid region as the electrolyzer)

This approach is necessary to justify an expectation of significant emission reductions from systems that co-fire with large proportions of hydrogen.

EPA's proposal considers adopting the definition of low-GHG hydrogen to set the BSER emission standard, as determined by the U.S. Department of the Treasury's guidelines on qualifying for the top tier of the 45V clean hydrogen production tax credit. However, if Treasury neglects to adopt rigorous requirements as described in the three pillars above, EPA must set its own criteria for low-GHG hydrogen to ensure that power plants and states achieve full compliance with required emissions reductions—and require verification by power plants that its hydrogen supply chain is fully compliant—a possibility that EPA rightfully takes comment on in the proposed rule.[32]

If any of these three requirements are not met in the production of hydrogen, it is likely that fully or partially unabated fossil-fired power generation was used in part for its electrolysis. That means that co-firing with this hydrogen at a power plant would not reduce carbon pollution at the level required by the BSER. If EPA neglects to set a stringent standard of performance based on zero-emission hydrogen—and rigorously account for carbon intensity, using hydrogen co-firing as a compliance method would counterproductively *increase* carbon pollution from the power sector by causing more emissions from the fully or partially unabated plants that provided power for electrolysis than are avoided by using the hydrogen for power generation. As EPA recognizes in the proposal, this outcome is totally out of step with EPA's intention with these standards and the agency's mandate under the Clean Air Act.

<u>Further, EPA should finalize a single standard for baseload gas plants based upon 90% carbon capture for gas plants.</u>

EPA should set a single emission standard for each category, rather than finalize a dual pathway as proposed. Maintaining a single BSER pathway ensures that all plants adhere to the same emissions standard and take action on the same timeline (for both compliance and demonstrating increments of progress). Setting a single standard still allows regulated entities to comply using any number of approaches but avoids any confusion caused by differing regulatory regimes. In the case of baseload power, a 90 percent carbon capture system of emission reductions is the best adequately

[32] 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, 88 Fed. Reg. 99, 33328-33329, Proposed May 23, 2023 (to be codified at 40 CFR Part 60)

demonstrated technology, whereas hydrogen co-firing may be a better approach for plants with a lower capacity factor. Even where both hydrogen and carbon capture approaches may be adequately demonstrated, the BSER for that category should be set based on the option that offers stricter emissions limits after considering all the factors required by the Clean Air Act.

Requiring comprehensive analysis and full implementation in state plans.

Finally, because the portion of this rule covering existing sources will ultimately be implemented via state plans, it is critical that EPA set up its implementation in ways that will serve the purposes of the Act. States may choose more stringent or alternative pathways to achieve or exceed emissions limits in their plans, and EPA should put states in a strong position to ensure effective pollution reductions when considering their particular circumstances.

As we emphasized at the outset, EPA must put state regulators in a position to meaningfully work with, and listen to, communities affected by power plants, as these plans are developed and finalized. That said, meaningful engagement requirements do not guarantee community protections, and as such, EPA must also take all actions necessary to ensure strong enforcement and reduced emission and pollution leakage from the rule.

<u>EPA must further incorporate cumulative impact analysis into the rule and its implementation.</u>

President Biden's Executive Order 14096 directs agencies to *"identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of Federal activities including those related to climate change and cumulative impacts of environmental and other burdens on communities with environmental justice concerns".*[33] Yet, the proposed rule acknowledges the cumulative impacts of pollution on nearby communities only once, stating that EPA "recognizes the existence of cumulative impacts affecting a community's resilience."

EPA is soliciting comment on ways for states to consider pollution impacts on vulnerable communities. Given EO 14096 and the White House's stated commitment to addressing cumulative impacts in Federal activities and rulemakings, EPA must, at minimum, identify opportunities to integrate cumulative impact analysis into the implementation of the rule. This is especially important as EPA acknowledges there is

[33] Exec. Order 14096, 88 Fed. Reg. 25251 (April 26, 2023)

a potential for certain co-pollutants to increase due to parasitic load or other energy requirements of CCS and hydrogen technologies.

Accordingly, EPA should direct states to perform and submit a cumulative impacts analysis as a requirement of its State Implementation Plan and should direct states to consider and document their authorities to reduce these impacts via complementary permitting and regulatory processes for affected facility's criteria pollutant and toxic emissions, or with utility planning processes that can prioritize decreased utilization, retirements, and replacements of these facilities with clean energy at the discretion of the state. The localized pollution impacts on environmental justice communities should be considered in EPA's approval of state implementation plans.

EPA should approve state plans proposing alternate, and more stringent, pathways for complying with BSER – and support states in developing such plans.

The core principle that should animate implementation planning is that states, in developing their implementation plans, have the discretion to secure more ambitious pollution limits. The evolving economics of the power sector, and state policies ranging from renewable power standards to carbon neutrality mandates to environmental justice statutes driving geographic pollution decreases in cumulatively burdened communities, will all be relevant to state planners seeking to comply with multiple regulatory mandates in an efficient and just manner. This is particularly so under the structure of section 111, where EPA and the Court have long recognized state leadership in initial implementation planning. No state, generator, or community should be required to specifically implement BSER via a prescriptive technological standard when more economic and less polluting clean technology is available. EPA must continue to make this point clear in the final rule.

EPA must finalize key implementation rules to prevent abuse of remaining useful life and other factors (RULOF) variances.

EPA must ensure that the RULOF exemptions do not allow states to evade pollution control requirements by making unsupported claims that certain facilities cannot comply with the applicable emission limit for their subcategories. The promulgation of EPA's proposed RULOF clarifications is critically important to maintaining a stringent rule.

Additionally, it is crucial that EPA finalizes and underscores that if a source cannot feasibly apply a particular technology that the BSER is based on due to unique, plant-specific circumstances, but is still capable of meeting the emission limitation by reasonably implementing a different system of emissions reduction, the source will still be held to the same, stringent level of performance and degree of emission limitation. Each plant must be required to meet an emission limit commensurate with

the best system of emission reduction and deviations based on remaining useful life and factors not considered by the Agency when setting the guidelines must be as limited as practicable.

Conclusion

These carbon standards are essential for reducing harmful emissions from a sector that produces a quarter of US greenhouse gas emissions. EPA must finalize a strong and robust rule package to meet its requirements and responsibility under Section 111 of the Clean Air Act.

Of course, the recommendations presented in this comment only address a small subset of the important decisions that EPA must make in finalizing and implementing the rule. These standards are sure to create new challenges that must be addressed to the extent possible in the 111 rulemaking or through additional rulemakings. For example, EPA should also expand New Source Review (NSR) permitting to ensure that new CCS and H2 projects trigger major NSR requirements and finalize strict compliance and monitoring requirements for Class VI wells under the Safe Drinking Water Act. The Department of Transportation's Pipeline and Hazardous Materials Safety Administration must also finalize robust CO2 pipeline safety rules. This suite of rulemakings provides crucial safety protections that would reduce the real risk to communities that could come from any buildout of CO2 infrastructure and CCS and hydrogen projects—and would provide benefits even without new 111 rules from EPA.

Still, the five key recommendations named in this comment are clear ways that EPA must strengthen the rule to avoid emission leakage, prevent loopholes, and achieve greater emissions reductions. EPA must fulfill its duty to regulate carbon emissions from new and existing fossil fuel-fired power plants. If strengthened, these rules could be a crucial step in protecting Americans from the harms of climate pollution.

Sincerely,

Evergreen Action
Center for American Progress
League of Conservation Voters
Sunrise Movement
Rewiring America
Southern Environmental Law Center
Environmental Law & Policy Center
Chesapeake Climate Action Network
Common Defense
ClimateVoice
George Mason University Center for Climate Change Communication

The People’s Justice Council
Earth Ethics, Inc.
Climate Changemakers
Elders Climate Action
Chesapeake Bay Foundation
Climate Generation
US Partnership for Education for Sustainable Development
Community for Earth, First Unitarian Church
Action for the Climate Emergency (ACE)
Metro Climate Action Team (MCAT)
NW Energy Coalition
The Earth Bill Network
Endangered Species Coalition
Southern Oregon Climate Action Now
Ecumenical Ministries of Oregon and Oregon Interfaith Power & Light
Alabama Interfaith Power & Light
Pennsylvania Interfaith Power & Light
Consolidated Oregon Indivisible Network