

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Carbon Pollution Standards for) Docket No. EPA-HQ-OAR-2013-0603
Modified and Reconstructed)
Stationary Sources: Electric Utility) Via regulations.gov
Generating Units; Proposed Rules) October 16, 2014
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Thank you for accepting these comments on EPA's proposed Carbon Pollution Standards for Modified and Reconstructed Stationary Sources: Electric Utility Generating Units; Proposed Rules (or the "modified/reconstructed rule"), 79 Fed. Reg. 34,960 (June 18, 2014). We submit these comments on behalf of Sierra Club, Clean Air Task Force, Environmental Defense Fund, Natural Resources Defense Council, Earthjustice, and the National Wildlife Federation (together, "Joint Environmental Commenters").

I. Introduction

Global climate change is the largest environmental, social, and political challenge humanity now faces. As we discussed at length in our joint comments¹ for EPA's 111(b) rule for new fossil fuel-fired EGUs, climate change threatens to dramatically alter weather patterns, cause sea and ocean levels to rise, amplify water- and air-borne diseases, instigate large-scale floods and droughts, trigger dangerous heat waves, destabilize ecosystems, drive countless plant and animal species toward extinction, and displace, injure, or kill millions of people.² EPA properly concluded in its 2009 Endangerment Finding that the scientific record demonstrating that "elevated concentrations of greenhouse gases in the atmosphere may reasonably be anticipated to endanger the public health and welfare of current and future U.S. generations is robust, voluminous, and compelling."³ The evidence that climate change poses an imminent threat to public health and welfare has only grown more authoritative since EPA made that finding. To minimize the risks of climate change, large-scale action is needed, and it is needed now.

¹ See Sierra Club, et al., *Comments on Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units*, EPA-HQ-OAR-2013-0495-9514 (May 9, 2014), attached as **Ex. 1**. These comments were submitted jointly by Sierra Club, Environmental Defense Fund, Natural Resources Defense Council, Earthjustice, Environmental Law and Policy Center, Southern Environmental Law Center, and the National Wildlife Federation. Clean Air Task Force also joined in all sections of the comments except for Section VI. [hereinafter "Comments on the New Source Standard"]

² *Id.* at 3-7.

³ 75 Fed. Reg. 49,556, 49,557 (Aug. 13, 2010) (Endangerment Reconsideration Denial), attached as **Ex. 2**; see also 74 Fed. Reg. 66,496, 66,523 (Dec. 15, 2009) (Endangerment Finding), attached as **Ex. 3**; *Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 122-28 (D.C. Cir. 2012) (upholding Endangerment Finding in its entirety).

Electricity generation from fossil fuel-fired electric generating units (“EGUs”) is the single largest source of carbon dioxide (“CO₂”) emissions in the United States,⁴ and is a major driver of global climate change. It is therefore critical that EPA control the emissions from this source category. Doing so will not only mitigate impacts of climate change, but will also reduce emissions of harmful smog- and soot-forming pollutants released during fossil fuel combustion, including nitrogen oxides (“NO_x”), sulfur dioxide (“SO₂”), and fine particulate matter (“PM_{2.5}”). As a nation, we cannot adequately limit our contribution to global climate change without dramatic cuts in CO₂ emissions from EGUs.

EPA’s current rule addresses CO₂ emissions from fossil fuel-fired EGUs (stationary combustion turbines and electric utility steam generating units) that have been modified or reconstructed. In the comments that follow, we describe steps EPA should take to alter and enhance the modified/reconstructed rule. Because many of our comments regarding EPA’s 111(b) rule for new sources are also applicable here, we will regularly cross-reference those comments, which are incorporated by reference herein and are attached as Exhibit 1.

II. Legal Background

A. EPA’s Legal Basis for Regulating Modified and Reconstructed Sources

Section 111 of the Clean Air Act (“CAA”) directs EPA to set performance standards for listed categories of stationary source of air pollution. 42 U.S.C. § 7411. First, the agency must publish a list of categories of stationary sources and include any category in the list if, in EPA’s judgment, it causes or contributes significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. *Id.* § 7411(b)(1)(A). The agency first listed electric utility steam generating units and stationary gas turbines as section 111 source categories in 1971 and 1977, respectively.⁵ In response to the Supreme Court’s holding in *Massachusetts v. EPA*, 549 U.S. 497, 528-29 (2007), which held that the CAA authorizes federal regulation of emissions of CO₂ and other GHGs, EPA determined in December 2009 that emissions of such pollutants from mobile sources “cause or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.” 74 Fed. Reg. 66,496 (Dec. 15, 2009) (“Endangerment Finding”).⁶ And in 2011, the Supreme Court agreed that the CAA

⁴ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*, EPA 430-R-14-003 (Apr. 15, 2014), at Table 2-1, attached as **Ex. 4**.

⁵ See 36 Fed. Reg. 5,931 (Mar. 31, 1971) (listing fossil-fuel fired electric steam generating units and boilers); 42 Fed. Reg. 53,657 (Oct. 3, 1977) (listing fossil-fuel fired combustion turbines); 44 Fed. Reg. 33,580 (June 11, 1979) [codified as subpart Da at 40 C.F.R. §§ 60.40Da-60.52Da] (setting performance standards for electric utility steam generating units); 44 Fed. Reg. 52,792 (Sept. 10, 1979) [originally codified at 40 C.F.R. Part 60, Subpart GG, currently codified as subpart KKKK at 40 C.F.R. §§ 60.4300-60.4420] (setting performance standards for stationary combustion turbines).

⁶ Because section 111 requires the administrator to make source-specific rather than pollutant-specific endangerment findings, the original 1971 and 1977 listings of steam EGUs and stationary combustion turbines, respectively, were sufficient to allow EPA to issue performance standards for those sources covering new pollutants without having to make additional determinations of endangerment. As such,

authorizes CO₂ standards for power plants under section 111, preempting common-law actions in tort to remedy injuries due to climate pollution. *Am. Elec. Power Co. v. Connecticut* (“AEP”), 131 S.Ct. 2527, 2537-39 (2011).

Once a source category is listed under section 111, the agency must publish “Federal standards of performance for new sources within such category,” which are defined as “standard[s] for emissions of air pollutants which reflect[] the degree of emission limitation achievable through the application of the best system of emission reduction [“BSER”] 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)(b). Notably, the term “new source” encompasses “any stationary source, the construction *or modification* of which is commenced after the publication of regulations (or, if earlier, proposed regulations) prescribing a standard of performance” for that source, *id.* § 7411(a)(2) (emphasis added). “Modification,” in turn, refers to “any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.” *Id.* § 7411(a)(4).

By regulation, EPA has also included “reconstructions” of sources within the definition of “construction,” bringing reconstructed units into the pool of sources affected under section 111(b) regulations. See 40 C.F.R. § 60.15. The agency has specified that “reconstruction” means “the replacement of components of an existing facility to such an extent that: (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and (2) It is technologically and economically feasible to meet the applicable standards set forth in this part.” *Id.* § 60.15(b)(1)-(2). In light of *Massachusetts* and *AEP*, as well as the agency’s own determination that fossil fuel-fired EGUs are sources of air pollution that harm the public health and welfare, EPA must issue CO₂ performance standards for new, modified, and reconstructed EGUs and stationary combustion turbines. In keeping with this mandate, the agency proposed a set of GHG performance standards for new plants on January 8, 2014 and has now issued its proposal for modified and reconstructed sources.

B. 111(b) Performance Standards Are Technology-Forcing in Nature

The relevant legislative history and case law affirm that section 111 is a technology-forcing provision designed to ensure that new, modified, and reconstructed sources incorporate the latest technologies for pollution control. For instance, the 1977 Senate Report discusses the need “to assure the use of available technology and to stimulate the development of new technology.” S. Rep. No. 95-127 at 171. To that end, “[t]he statutory factors which EPA

the 2009 Endangerment Finding is not a legal prerequisite for either the proposed new source standard from January 2014 or the modified/reconstructed rule, although it does provide a scientifically rigorous account of the dangers of climate change and the role that man-made GHG (including CO₂) emissions play in that process. For more discussion of this, see Comments on the New Source Rule at 33-38.

must weigh [when setting performance standards] are broadly defined and include within their ambit subfactors such as technological innovation.” *Sierra Club v. Costle*, 657 F.2d 298, 346 (D.C. Cir. 1981). The agency may thus promulgate standards that reflect “improved design and operational advances” that industry has yet to realize, “so long as there is substantial evidence that such improvements are feasible and will produce the improved performance necessary to meet the standard.” *Id.* at 364; *see also Portland Cement Ass’n v. EPA (“Portland Cement III”)*, 665 F.3d 177, 190 (D.C. Cir. 2011) (EPA properly based standards for new cement kilns on a recent and more efficient model, even though many older kilns still existed that did not utilize the same technology). Moreover, EPA can “extrapolat[e] . . . a technology’s performance in other industries”, and look beyond domestic facilities to those used abroad. *Lignite Energy Council v. EPA*, 198 F.3d 930, 934 n.3 (D.C. Cir. 1999).

Performance standards issued under section 111(b) must reflect the degree of emission limitation achievable through application of the best system of emission reduction, or BSER, which the Administrator determines has been adequately demonstrated. *See* 42 U.S.C. § 7411(a); *Sierra Club*, 657 F.2d at 298. “Adequately demonstrated” does not mean that all existing sources must be able to meet the requirement, *see Nat’l Asphalt Pavement Ass’n v. Train*, 539 F.2d 775, 785-86 (D.C. Cir. 1976), nor does it require the available technology to be in active use at the time of the rulemaking. *See Portland Cement Ass’n v. Ruckelshaus (Portland Cement I)*, 486 F.2d 375, 391 (D.C. Cir. 1973), *cert. denied*, 417 U.S. 921 (1974). Rather, “[t]he Administrator may make a projection based on existing technology, though that projection is subject to the restraints of reasonableness and cannot be based on ‘crystal ball’ inquiry.” *Id.* at 391-92 (citing and quoting *Int’l Harvester v. Ruckelshaus*, 478 F.2d 615, 629 (D.C. Cir. 1973)). In short, EPA can and must encourage new and more efficient technologies through its 111(b) standards, which apply to new, modified, and reconstructed sources. These standards should reflect the use of the “best” control options, including those achieving the deepest reductions, consistent with Congress’s intent to encourage technological advancement in controls.

C. Cost Considerations Under Section 111(b)

Section 111(a)(1) directs EPA to “take into account” the cost of achieving reductions and any nonair quality health and environmental impacts and energy requirements when establishing performance standards under section 111. 42 U.S.C. § 7411(a)(1). In *Essex Chemical Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973), the court held that 111(b) standards must be “reasonably reliable, reasonably efficient, and . . . reasonably . . . expected to serve the interests of pollution control *without becoming exorbitantly costly in an economic or environmental way.*” (emphasis added). Similarly, in *Portland Cement Ass’n v. Train (Portland Cement II)*, 513 F.2d 506, 508 (D.C. Cir. 1975), the court upheld EPA’s interpretation that section 111’s cost inquiry functions as a safety valve to ensure that the costs a performance standard imposes are not “greater than the industry could bear and survive,” but would instead allow industry to “adjust” in a “healthy economic fashion to the end sought by the Act as represented by the standards prescribed.” And in *Lignite Energy Council*, 198 F.3d at 933, the court held that “EPA’s choice [of BSER] will be sustained unless the environmental or economic costs of using the technology are exorbitant.”

As these holdings make clear, a performance standard under section 111 will be upheld unless the costs it imposes are exorbitant or too great for the industry to bear. In fact, the D.C. Circuit has never invalidated a section 111 rule for being too costly. 79 Fed. Reg. 1430, 1464 (Jan. 8, 2014). For example, in *Portland Cement I*, the court upheld a performance standard for particulate matter emissions even though control technologies amounted to roughly 12 percent of the capital investment for an entirely new plant and consumed five to seven percent of a plant's total operating costs. 486 F.2d at 387-88. Likewise, in *Portland Cement III*, the court upheld particulate matter standards that were anticipated to increase the cost of cement by one to seven percent, with little projected decrease in demand. 665 F.3d at 191; *see also* 73 Fed. Reg. 34,072, 34,077, 34,086 (June 16, 2008). With respect to the electricity sector, the *Lignite Energy Council* court ruled that a two percent increase in the cost of producing electricity was not exorbitant and upheld the 1997 NO_x standards for EGUs and industrial boilers. *See* 198 F.3d at 933 (citing 62 Fed. Reg. 36, 948, 36,958 (July 9, 1997)). For a further discussion on section 111's costs considerations, *see* our Comments on the New Source Standard at 25-27.

II. Technical Considerations

A. EPA Must Amend Its Definition of "Affected Facilities" for the Modified/Reconstructed Rule

In the modified/reconstructed rule proposal, EPA provides a set of criteria that defines whether a particular source is an affected EGU subject to the rule's performance standards. For steam EGUs and IGCCs, the agency proposes to cover any source with a maximum heat input capacity of 250 MMBtu/hr and that has been constructed for the purpose of supplying more than one-third of its potential net electric output and more than 219,000 MWh annually to the grid. 79 Fed. Reg. at 34,972. Unlike the new source proposal from January 2014, the proposed modified/reconstructed rule does not require that an affected coal-fired EGU *actually supply* more than one-third of its potential output and more than 219,000 MWh annually to the grid, nor does it require it to combust at least 10 percent fossil fuel on a three-year average basis. *Id.*

For stationary combustion turbines, the modified/reconstructed rule retains the same applicability provisions as those that appeared in the new source proposal, which cover any combustion turbine that 1) has a maximum heat input capacity of 250 MMBtu/hr; 2) has been designed to supply, and actually supplies, over one-third of its net potential electric output and 219,000 MWh annually to the grid on a three-year rolling average basis; 3) combusts over 10 percent fossil fuel on a three-year rolling average basis; and 4) combusts over 90 percent natural gas on a three-year rolling average basis. *Id.* The agency also discusses various other amendments to applicability for which it solicits comment. *See id.* at 34,972, 34,979-81.

Joint environmental commenters believe that EPA's applicability provisions are far too limited in scope, unnecessarily exempt lower capacity factor EGUs from the carbon pollution standards, and contain too many loopholes through which sources can avoid addressing their

emissions. In our Comments on the New Source Standard, we urged EPA to make a number of specific changes in its final rule regarding what sources are covered under the rule. Our proposed changes are equally applicable to the agency's modified/reconstructed rule and we reiterate them here:

- With several exceptions we describe below, the agency must retain the applicability provisions for affected sources that exist in the *current* regulations for subparts KKKK and Da, as well as those for subparts Db and Dc, which regulate smaller steam EGUs and gasification plants that do not utilize combined cycle technology.
- EPA should abandon its proposal to re-define EGUs so as to exclude any unit from regulation unless it is designed to supply (and, in the case of stationary combustion turbines, actually supplies) more than one-third of its potential electric output and 219,000 MWh annually to the grid. In fact, many baseload and load-following EGUs operate at capacity factors at or below 33 percent. As the agency itself discusses in its preamble to its proposed 111(d) emission guidelines for existing EGUs, there is significant underutilized capacity at the nation's combined cycle gas plants, which is the premise for Building Block 2 under that proposal. *See* 79 Fed. Reg. 34,830, 34857 (June 18, 2014). Furthermore, establishing applicability based on a capacity factor threshold means that some plants will fall in and out of applicability from year to year, which creates significant enforcement and permitting problems. As an alternative, the agency should apply performance standards to any EGU that supplies or was constructed for the purpose of supplying *any* amount of electricity for sale to the grid.
- EPA should continue to provide specific calculation procedures for emissions from regulated cogenerating facilities, rather than tailor its regulations only to cover EGUs that are not cogenerating plants while excluding some units that should be covered.
- The agency should also ensure that fast-start combined-cycle gas turbines ("CCGTs")⁷ are covered under the proposed rule by replacing references to a facility's "potential electric output" with "intended electric output."
- EPA should revise its proposed rule to ensure that the individual gas combustion turbines and the heat recovery steam generators ("HRSG") at CCGT plants are not treated separately for the purposes of determining applicability or calculating emissions. EPA should therefore set emission limits for gas-fired EGUs that include the combustion turbines and any HRSG systems that are associated with those turbines. These standards should be based on the demonstrated performance of the best existing and anticipated new CCGTs, rather than reflecting separate applicability criteria and emission limits for the combustion turbines and HRSGs that make up CCGTs.

⁷ These units are also referred to as natural gas combined cycle ("NGCC") plants.

- Relatedly, EPA should ensure that all components of CCGTs are covered under a single subcategory, which would also include simple-cycle combustion turbines (“CTs”). Under this approach, EPA would not distinguish heat input to a CCGT’s combustion turbine and its HRSG, nor would it distinguish between the electricity generated by those components; rather, it would simply consider the total heat input to, and the net electric output from, the EGU as a whole.
- EPA should not exclude modified or reconstructed peaking CTs or CCGTs from regulation. Simply because these units operate less efficiently than baseload or load-following EGUs does not mean they should not be required to limit their carbon pollution. Instead, EPA should promulgate a three-tiered set of performance standards that cover peaking, load-following, and baseload units. We discuss these emission limits in more detail below.
- We urge EPA not to redefine “affected facility” so as to permit EGUs to include in their emissions calculations electricity generated by co-located technology that is not integrated into the regulated unit as an engineering matter. A provision of this nature will permit operators to simply tack on emitting units at pre-existing wind farms or solar arrays and avoid addressing their carbon emissions. Otherwise, we agree that electricity generated by non-emitting equipment that is truly integrated into the unit’s design (such as in solar/gas hybrid plants) may count toward its net-electric output.
- EPA should not create a separate emission limit for smaller CCGTs (i.e., those with a maximum heat input under 850 MMBtu/hr). If it nevertheless chooses to do so, it should set a standard for these units that does not exceed 1,000 lbs CO₂/MWh. Under this scenario, EPA must also provide that multiple smaller units at the same physical site will be considered a single source for the purpose of calculating emissions.
- EPA should eliminate the 90 percent natural gas minimum threshold for stationary combustion turbines and the 50 percent syngas threshold for IGCC units. These thresholds do not serve a beneficial purpose and allow units to escape regulation by making small adjustments to their fuel input.

For a more in-depth discussion of these proposals, as well as supporting charts and tables, see our Comments on the New Source Standard at 43-72.

In the modified/reconstructed rule proposal, EPA also requested comment on a number of specific amendments concerning affected EGUs, some of which were included in the new source proposal and some of which were not. We address each of those below.

- EPA asks whether it should “clarify that net-electric sales, for applicability purposes, includes electricity supplied to other facilities that produce electricity to offset auxiliary loads” in order to prevent “smaller EGUs that are co-located with larger

EGUs . . . [from] claiming that they do not meet the rule applicability criteria because their generated power is used to offset the parasitic loads of the larger facility.” 79 Fed. Reg. at 34,972. We agree with EPA that this amendment will help close a problematic loophole, and urge the agency to include it in both the final new source rule and the final modified/reconstructed rule.

- The agency also solicits comment on whether the 10 percent fossil fuel use criteria for stationary combustion turbines should be based on 3 consecutive calendar years rather than a 3-year rolling average basis. *Id.* Joint environmental commenters oppose this proposal, since its purpose is to restrict applicability to baseload and load-following units only, a policy we believe is misguided. *See id.* at 34,979. We believe that *all* fossil fuel-fired EGUs—including peakers—that sell any amount of electricity the grid should be covered; this provision would merely exclude more units from coverage without justification.
- EPA asks whether “the definition of ‘potential electric output’ should be revised to include ‘or the design net electric output efficiency’ as an alternative to the default one-third efficiency value.” *Id.* at 34,972, 34,979-80. As discussed above, our proposal would eliminate applicability determinations based on capacity factors or efficiency values, but would instead impose tiered emission limits based on a unit’s annual hours of operation. This approach would obviate EPA’s suggestion to include “net electric output efficiency” as an applicability determinant. In any event, the agency should not adopt this amendment, which would serve no purpose other than to exempt larger CTs from regulation that would otherwise have been covered under the rule. Indeed, we advocate the opposite approach: the rule’s applicability provisions should be expanded to include *all* CTs that provide electricity to the grid.
- EPA proposes to add the phrase “of the thermal host facility or facilities” to the definition of “net electric output,” such that the proposed definition would read “. . . the gross electric sales to the utility power distribution system minus purchased power of the thermal host facility or facilities on a calendar year basis.” *Id.* The purpose of this provision would be to allow third-party cogenerating units that provide useful heat output to adjacent plants under different ownership to reduce their gross electric sales figures by the amount of power purchased by the adjacent facility, and hence potentially avoid coverage under the rule. We oppose this amendment for both the new source rule and modified/reconstructed rule. *Id.* at 34,979; *see also* 79 Fed. Reg. at 1460. There is no legal or policy basis for allowing a cogenerating unit to reduce its annual electricity sales figure simply because it provides useful thermal output to adjacent unit under different ownership, and, as noted previously, we believe that a unit that provides or is designed to provide any amount of electricity for sale to the grid should be covered under the rule.

B. EPA's Performance Standards for Modified and Reconstructed Stationary Combustion Turbines

EPA's proposed performance standards for modified and reconstructed stationary combustion turbines are the same as its proposal for entirely new units: smaller EGUs (i.e., those with a maximum heat input equal to or less than 850 MMBtu/hr) would be required to meet a gross-output emission limit of 1,100 lbs CO₂/MWh, while larger units (i.e., those with a maximum heat input greater than 850 MMBtu/hr) are limited to 1,000 lbs CO₂/MWh. *See* 79 Fed. Reg. at 34,962. Like the proposed new source rule, the modified/reconstructed rule for stationary combustion turbines reflects a determination that efficient CCGT technology is the BSER for stationary combustion turbines. *Id.* We agree with EPA's BSER determination for this category of EGUs, and, in principle, support the agency's decision not to distinguish between new, modified, and reconstructed units for the purposes of regulating CO₂ emissions for these sources. As EPA notes in the preamble, efficient CCGT design is widely available and in regular use throughout the electricity sector. *Id.* at 34,988-90. Units that modify or reconstruct should not be allowed to emit at rates greater than those achieved by the most-efficient CCGT technologies available.

However, the numerical limits the agency has selected—1,100 lbs CO₂/MWh for smaller units and 1,000 lbs CO₂/MWh for larger units on a gross output basis—are far too lenient and do not represent the true performance capabilities of the most efficient CCGT units currently available and operating. In our Comments on the New Source Standard, we provided ample documentation regarding emission rates of the existing CCGT fleet as well as different design options currently available. *See* Comments on the New Source Standard at 83-94. A full 94 percent of the CCGT units in existence as of 2011 already satisfy the emission limits EPA has selected for its modified/reconstructed rule. *See id.* at 84-87. To comport with section 111's technology-forcing mandate, and reduce CO₂ emissions from modified and reconstructed stationary combustion turbines as the CAA requires, the agency must propose limits that reflect the true performance capabilities of the most efficient CCGT models on the market.

Furthermore, as in the proposed new source rule, the agency has crafted the modified/reconstructed rule proposal so as to exclude units that operate in peaking mode. As we discussed previously, there is no basis in law or policy to exempt units from regulation simply because they operate less frequently (and hence less efficiently). Section 111(b) expressly permits EPA to create different emission limits for different kinds of units within a given regulatory category. 42 U.S.C. § 7411(b)(1)(a) ("The Administrator may distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing such standards."). As we discuss above, rather than simply exempting units from regulation on the basis of how frequently they run over the course of a calendar year or on a three-year rolling average basis, the agency should cover *all* sources that supply (or are designed to supply) any amount of electricity to the grid, and should distinguish among these sources on a functional basis.

We therefore propose the same three-tiered regulatory model for modified and reconstructed stationary combustion turbines that we discussed in our Comments on the New Source Standard, which would establish the following emission limits for baseload, load-following/intermediate, and peaking EGUs:

- Peaking units (defined as affected EGUs that operate less than 1,200 hours per year) would be subject to a net output-based emission limit of 1,100 lbs CO₂/MWh.
- Intermediate/load-following units (defined as EGUs that operate between 1,200 and 4,000 hours annually) would be subject to a net output-based emission limit of 875 lbs CO₂/MWh.
- Baseload units (defined as EGUs that operate over 4,000 hours annually) would be subject to a net output-based emission limit of 825 lbs CO₂/MWh.

These standards are entirely achievable and well within a reasonable cost range given the technology that is currently available, and modified and reconstructed units should be required to meet them. For more information on this approach, as well as detailed performance data for existing and available gas-fired EGUs, see Section IX of our Comments on the New Source Standard at 83-106.

C. Modified and Reconstructed CCGTs Must Be Considered Available for Block 2 Redispatch Under State 111(d) Plans

In June 2014, EPA issued the Clean Power Plan, its proposed emission guidelines for existing fossil fuel-fired EGUs under section 111(d) of the CAA. The Clean Power Plan establishes weighted rate-based emission targets for each state's fleet of fossil fuel-fired EGUs, which take into account not only emissions from existing fossil-fired plants, but also considers electricity generated by renewable resources, a percentage of each state's nuclear capacity, and demand avoided by energy efficiency measures. Each state's target is based on the application of four "building blocks," each of which reduces the carbon intensity of the state's fossil fleet. The second of these building blocks achieves emission reductions by presuming that each state can increase generation from its existing fleet of CCGT plants and reduce generation from more carbon-intensive steam EGUs in equal measure.

To ensure the integrity of the Clean Power Plan and the state plans promulgated under its authority, EPA must ensure that any CCGT that modifies or reconstructs is still considered part of each state's pool of CCGTs available for redispatch under Block 2. As a general matter, the agency has asserted in its preamble to the modified/reconstructed rule that "all existing sources that become modified or reconstructed sources and which are subject to a CAA section 111(d) plan at the time of the modification or reconstruction, will remain in the CAA section 111(d) plan and remain subject to any applicable regulatory requirements in the plan, in addition to being subject to regulatory requirements under CAA section 111(b)." 79 Fed. Reg. at 34,963. However, EPA has also noted that the statute is silent on whether existing sources

remain subject to a 111(d) program after modifying or reconstructing, and that it is using its authority under *Chevron U.S.A. Inc. v. NRDC*, 467 U.S. 837, 842–844 (1984) to interpret the statute in this manner. We agree that the agency has this authority, but we contend that, under *any* interpretation of section 111, EPA’s state-based targets may—and, in fact, must—account for the full fleet of existing CCGTs under Block 2, regardless of whether those units subsequently modify or reconstruct.

D. EPA Should Not Permit Stationary Combustion Turbines to Elect Alternative Unit-Specific Standards

Joint environmental commenters urge EPA not to allow modified stationary combustion turbines to “elect, as an alternative to the otherwise applicable numerical standard, to instead meet a unit-specific emission standard that is determined by the CAA section 111(d) implementing authority based on implementation.” 79 Fed. Reg. at 34,965. There is no reason to create a unit-specific alternative to the proposed standard of performance for modified stationary combustion turbines. The proposed standard is based on a BSER of efficient combined cycle natural gas technology. As EPA recognizes, CCGT technology provides baseload and load-following generation at a relatively low cost compared to other methods of fossil fuel combustion, and for many simple cycle turbines, particularly those operating at higher utilization rates, “the cost of replacement with a NGCC [CCGT] unit is likely to be cost effective based on consideration of fuel savings alone.” *Id.* at 34,989. Given that CCGT is both economically reasonable and adequately demonstrated, it would be arbitrary and capricious to adopt an emission limit for modified stationary combustion turbines that is less stringent than the emission limit achievable through the application of this technology. Accordingly, EPA should not grant sources the option of complying with a unit-specific emission standard to be established by state authorities.

III. Other Issues

A. Pollution Control Project Exemption

Under section 111, a “modification” is defined as “any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.” *Id.* § 7411(a)(4). The statutory language allows for no exceptions to the principle that a physical or operational change resulting in an hourly increase in the rate of a regulated pollutant is a modification that subjects a source to any applicable 111(b) rule. Nevertheless, EPA cites 40 C.F.R. § 60.14 for the proposition that a project at a source that increases the unit’s hourly CO₂ emissions does not qualify as a modification if the purpose of the project is to reduce emissions of criteria or hazardous air pollutants under other Clean Air Act programs. See 79 Fed. Reg. at 34,970.

Simply put, this exemption for pollution control projects (“PCPs”) is unlawful under the CAA: EPA may not use its regulatory authority to circumvent the statutory definition of

“modification.” In *New York v. EPA*, 413 F.3d 3, 40-42 (D.C. Cir. 2005), the D.C. Circuit struck down an identical PCP exemption in the context of the statute’s New Source Review (“NSR”) program. There, the court held that PCPs that increase hourly rates of pollution plainly qualify as “modifications” as that term appears in section 111(a). *Id.* at 40; *see also* 42 U.S.C. § 7479(2)(C) (cross-referencing section 111(a)). Because EPA could point to no basis in the statute’s context or its legislative history that would permit any other interpretation of “modification,” the court struck down the NSR program’s PCP exemption. *New York*, 431 F.3d at 40. Indeed, in its initial NSPS proposal from 2012 (which was later replaced by the January 2014 new source rule proposal), EPA acknowledged that section 60.14(e)(5)’s PCP exemption is essentially identical to the provision the *New York* court rejected. *See* 77 Fed. Reg. 22,392, 22,421 (April 13, 2012). That regulation is therefore unlawful under the statute as well, and EPA must cover *all* modifications in its final modified/reconstructed rule, including those related to PCPs.

C. Compliance, Monitoring, and Enforcement Considerations

EPA cannot ensure that the modified/reconstructed rule will achieve its intended emission reductions without effective compliance, monitoring, and enforcement provisions. There is significant overlap between the agency’s enforcement regime for the new source proposal and for the modified/reconstructed rule, and many of our Comments on the New Source Standard regarding enforcement are relevant in the modified/reconstructed rule context as well. Below, we summarize our primary concerns and suggested amendments with regard to the enforcement, monitoring, and compliance measures in the modified/reconstructed rule.

- First, EPA must adopt measures to guarantee near-term compliance with the rule. Consistent with past practice, the agency should require each affected unit to perform an initial compliance demonstration using prescribed reference test methods within six months of modifying.
- Second, the preamble states that the “initial 12-operating month compliance period would begin with the first month of the first calendar year of EGU operation in which the facility exceeds the capacity factor applicability threshold.” 79 Fed. Reg. at 34,977. EPA should dispense with its capacity factor threshold entirely for applicability determinations, but if it retains that policy, the current rule could be interpreted to grant sources up to a year of unregulated emissions after triggering applicability. Instead, EPA should make clear that the compliance period should begin at the end of the calendar month during which a source crosses the applicability threshold, not up to a full year later.
- EPA should grant a 90-day rather than 180-day window in which to certify the performance of its continuous emission monitoring system (“CEMS”). *See id.* The shorter time period would ensure compliance sooner, would be consistent with EPA’s initial

timetable for certification of CO₂ CEMS, *see* 58 Fed. Reg. 15,634, 15,717 (Mar. 23, 1993), and would reflect the time reasonably necessary to conduct the required procedures.

- The modified/reconstructed proposal currently provides for monthly compliance determinations. 79 Fed. Reg. at 34,977-78. We urge the agency to conduct daily compliance determinations instead, which would better effectuate the CAA's goal of deterring and remedying *all* emission exceedances and would ensure that sources come into compliance more swiftly with their emission limits.
- The proposal requires sources to supply valid data for at least 95 percent of their operating hours. *Id.* at 34,977. The agency must specify that a failure to meet the 95 percent valid data requirement constitutes a violation of the rule's monitoring requirements and should assess sufficiently stringent penalties against sources that fall short of this threshold. For some suggestions on different penalty structures, see our Comments on the New Source Standard at 127.
- EPA currently requires covered units that burn solid fuel to install CEMS, but permits sources that burn exclusively gaseous or liquid fuel to estimate their emissions based on fuel consumption data. The agency should instead require *all* sources to install CEMS, which is inexpensive, readily available, and considerably more accurate than input-based emission estimates. Moreover, regardless of its emissions monitoring system or method, each source must be required to include emissions during ramping and low-load periods in its data collection. These periods normally include higher emissions, and there is no legal or policy rationale from excluding them from a compliance determination.
- The agency must require that sources maintain on-site, and make readily available at all times, their records of emission data. The current proposal would permit sources to move records off-site after two years, but this provision would not advance any policy-based goals and would add unnecessary burdens to EPA or state-based enforcement investigations.

For more discussion of these proposals as they appear in the context of the 111(b) rule for new sources, see our Comments on the New Source Standard at 114-129, much of which is equally relevant with regard to the modified/reconstructed rule.

Respectfully submitted,

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