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Comments of the American Public Power Association
On the U.S. Environmental Protection Agency's
Advance Notice of Proposed Rulemaking on Greenhouse Gas Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units

82 Fed. Reg. 61,507 (Dec. 28, 2017)
Docket Id. No. EPA-HQ-OAR-2017-0545

February 26, 2018

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I. Introduction and Background

The American Public Power Association (Association or APPA) appreciates the opportunity to comment on the Advance Notice of Proposed Rulemaking of the U.S. Environmental Protection Agency (EPA or Agency) entitled "State Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units," published in the *Federal Register* on December 28, 2017 [1] (ANPR). The Association emphasizes, as it has done in prior rulemakings, that EPA's authority to issue emission guidelines under section 111(d) is subject to legal restraints that EPA must appreciate and for which it must properly account. With these limits in mind, the Association recommends EPA propose and finalize a lawful, reasonable rule under Clean Air Act(CAA) section 111(d) that would regulate greenhouse gases (GHGs) from existing electric generating units (EGUs). As explained in these comments, regulatory certainty for owners and operators of EGUs, especially public power utilities, is key.

The Association is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. We represent public power before the federal government to protect the interests of the more than 49 million people that public power utilities serve, and the 93,000 people they employ. The Association advocates and advises on electricity policy, technology, trends, training, and operations. Association members strengthen their communities

[1] 82 Fed. Reg. 61,507 (Dec. 28, 2017).

by providing superior service, engaging citizens, and instilling pride in community-owned power.

The electric utility sector continues to make great strides in reducing carbon dioxide (CO_2) emissions. The Energy Information Administration notes that domestic energy-related CO_2 emissions declined 14 percent from 2005-2017 to 861 million metric tons of CO_2.[2] This decrease in CO_2 emissions is due in part to public power utilities' investment in low and non-emitting generation technologies, such as, solar, wind, hydro, nuclear, and natural gas as well as the retirement of coal-fired generation. The Association agrees that the utility sector needs to reduce CO_2 emissions to address the adverse impacts of climate change; however, we continue to prefer congressional action as the appropriate mechanism to address GHG emissions given the inherent limitations of the CAA and the ubiquitous nature of CO_2. APPA nevertheless recognizes congressional action is unlikely at this time. Thus, the Association's comments on the ANPR constitute our recommendations for the development of a workable emissions guideline, which will establish procedures to limit CO_2 emissions from existing EGUs, given the current statutory regime.

APPA has a clear and significant interest in the Agency's overall effort under the CAA to regulate CO_2 and other GHG emissions. Indeed, the Association submitted comments on the proposed CPP which showed that several assumptions made by EPA regarding heat rate improvements that could be made at EGUs were flawed. APPA's comments on the proposed CPP are incorporated here by reference and attached as Attachment A.[3]

The Association also participated in the Small Business Advocacy Review (SBAR) panel prior to the issuance by EPA of a proposed federal plan for the CPP (which has since been

[2] https://www.eia.gov/todayinenergy/detail.php?id=34872 (last accessed February 19, 2018).
[3] EPA-HQ-OAR-2013-0602-22871.

withdrawn). During the SBAR process, we articulated our concerns about the impact the proposed federal plan would have on public power utilities that operate a single fossil plant and how the opportunity for flexibility may be foreclosed for those units. APPA's comments on the proposed federal plan are also incorporated here by reference and attached as Attachment B.[4]

In light of the Association's interest in this area and unique position as the representative of not-for-profit, community-owned electric utilities, we request that EPA propose and finalize a workable, legal, appropriate section 111(d) rule that: (1) respects the legal limits of the CAA; (2) properly reflects the reality of operating EGUs (particularly for not-for-profit, community-owned EGUs); (3) adequately accounts for current and future trends for electrical markets; and (4) provides regulatory certainty for affected sources. As community-owned electric utilities, we encourage the Agency to be mindful that consumer costs and reliability impacts must also be assessed in any emissions guidelines or state plans put forward.

II. Any Future Rulemaking Must Adhere to Statutory Limits on EPA's Authority to Regulate GHGs from EGUs Under CAA Section 111(d)

A. The Statutory Prerequisite of Section 111(b) Regulation

Before EPA can issue any emission guidelines under section 111(d) for a source category, it must first issue new source performance standards (NSPS) for the source category under section 111(b). EPA promulgated final NSPS for new, modified, and reconstructed EGUs in 2015.[5] The NSPS for new, modified, and reconstructed coal-fired EGUs was challenged in the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) by multiple parties, including the Association. The NSPS for gas-fired EGUs was not challenged by anyone. EPA is currently reevaluating the final NSPS rule.[6] The coal-fired EGU litigation is being held in

[4] EPA-HQ-OAR-2015-0199-0719.
[5] 80 Fed. Reg. 64,510 (Oct. 23, 2015).
[6] 82 Fed. Reg. 16,329, 16,330 (Apr. 4, 2017).

abeyance pending EPA's evaluation.[7] If EPA decides to change the NSPS for coal-fired EGUs as a result of its review, EPA would need to revise or replace that rule following its review—and not simply revoke it—in order to promulgate emissions guidelines for existing coal-fired EGUs. APPA supports the timely review of the final NSPS, which remains in effect.

B. Any Replacement to the CPP Must Reflect the Balance of Federal and State Power Set Out in Section 111(d)

Should EPA decide to craft a replacement rule for the CPP, EPA must appropriately account for section 111(d)'s clear division of authority between the federal government and the states. This division of authority is rooted in the tenets of cooperative federalism upon which the CAA is based. Although both section 111(b) and section 111(d) of the CAA require EPA to determine the best system of emission reduction (BSER) that has been adequately demonstrated (after evaluating the requisite factors)— these sections differ significantly when it comes to the setting of standards of performance. Under section 111(d), states take on this role (unlike in section 111(b)). EPA strayed from this approach in the CPP. In promulgating a replacement rule, EPA must respect this distinction and return to its historic practice of issuing guideline documents that *guide* states in their state plans, rather than *proscribe* the exact limits sources must meet without exception. Further, states must evaluate statutory factors, including remaining useful life, when issuing their state plans.[8] States have the ability to adopt standards of performance that are more or less stringent than the federal standards. Standards of performance that are less stringent than EPA's emission guidelines must be evaluated on a case-by case basis if states determines doing so is "significantly more reasonable due to factors such as:" (1)[u]nreasonable cost of control resulting from plant age, location, or basic process design; (2) [p]hysical impossibility of installing necessary control equipment; or (3) [o]ther factors

[7] Order, *North Dakota v. EPA*, No. 15-1381 (D.C. Cir. Aug. 10, 2017).
[8] *See* 42 U.S.C. § 7411(d)(1).

specific to the facility (or class of facilities)…[9,10] The Association believes that states are best suited to establish performance standards for affected sources within their borders, due to the familiarity some state regulatory agencies have with the performance and operations of units under their purview.

C. EPA Should Carefully Review 40 C.F.R Part 60, Subpart B

APPA believes the Agency should undertake a careful review of 40 C.F.R Part 60, Subpart B and amend Subpart B or use separate regulatory language for the CPP replacement rule. The regulatory language in Subpart B was developed prior to the 1990 Clean Air Act Amendments. It is out of date due to the subsequent amendments, revisions to administrative procedures, court opinions, and changes in administrative regulations. The subpart uses the terms "guidelines document" and "emission guidelines" which are not in section 111. The subpart also substitutes the term "emissions standard" for the statutory term "standards of performance," creating confusion in the use of terminology. These seemingly small changes will improve consistency between the statute and implementing regulations.

III. The Association Believes Any Replacement Rule Should Adhere to Several Overarching Principles

As a general principle, the Association believes a section 111(d) replacement rule should be workable and adhere to the statutory language of the CAA, set straightforward EPA guidelines for establishing state plan procedures, and give affected sources as much flexibility as possible to demonstrate compliance. A replacement rule should also account for a unit's operational changes and offer states the ability to establish automatically approvable options for setting state plans and performance standards.

The replacement rule should adhere to the following principles:

[9] CAA§ 116.
[10] 40 C.F.R §60.24 (f).

Automatically Approvable Standards—The replacement rule should offer a "safe harbor" state plan option for states that may wish to reduce their workload in setting the performance standards for each unit and that wish to have confidence that their state plan will be found "satisfactory" and thus approved by EPA. Although states undoubtedly possess the authority and discretion to vary from EPA's emission guidelines in writing their state plans, EPA should provide risk-averse or resource-limited states with automatically approvable options for standard setting. These automatically approvable standards should be some type of rate (i.e., lbs CO_2/MWh or tons/hour), that considers boiler design and fuel type. EPA should provide states with the option (and with instructions) to convert that rate to a mass-based approach if the state prefers that option. Any rate should be based on gross (not net) emissions. Any presumptively approvable standard for an existing source should be no stricter than the standard for a new source.

Straightforward—The state plan procedure provided in EPA's emission guidelines should be simple and not be overly burdensome or time-consuming for states to set or for regulated sources to adopt and implement.

Flexibility—During the implementation process, states should be allowed to provide substantial flexibility to sources to meet the standard of performance. EPA should outline a variety of implementation options in the guideline document that states can adopt, including allowing averaging between units at a plant or fleet level, or trading among unaffiliated sources.

Source Specific—Any replacement rule promulgated under section 111(d) should account for the diversity of existing steam generating units. Existing sources vary extensively by age, size, technology, fuel, operating duty, economics, geography, and remaining useful life.

Attempts to standardize CO_2 emissions "performance" within the diverse fleet by using a "one-size-fits-all" approach should be avoided.

Be Achievable at Different Load Levels and Capacity Factors—Due to market structures and fluctuations in fuel prices, sources often operate at different load levels and capacity factors, which affect their CO_2 emissions. In many cases, third party system operators determine when and at what level a generating unit will run. Any rule to replace the CPP should not prevent a source from operating at any particular load level or capacity factor to meet electricity demand.

Account for Heat Rate Deterioration Over Time—Due to the fact that efficiency deteriorates and heat rates degrade over time, CO_2 emissions fluctuate. Additionally, CO_2 emission rates can be affected by factors such as moisture in coal, cycling frequency, and ambient conditions. Any replacement rule must recognize these realities and account for them.

Cost Sensitive—EPA should reject any BSER that would trigger New Source Review (NSR), or require a unit to change fuel sources, or otherwise cause the unit to become "modified" or "reconstructed" within the meaning of section 111(b), or require any other measures that are not cost-effective.

Multiple-Year Lookback Period—Due to the lower cost of natural gas in recent years and its effect on the load duty of coal-fired EGUs, any standard of performance based on a unit's historical emissions performance should evaluate multiple years. The Association believes this should be no less than five years and that a period of ten years would be preferable. Shorter periods of time may not capture the different operating conditions and operating loads of the unit. Moreover, the emissions data smooths out over longer periods of time, removing spikes and other abnormalities seen in shorter review periods.

***Multiple-Year Compliance Period*—**For similar reasons, a compliance period longer than one year minimizes the risk of non-compliance due to changes in load level, capacity factor, and other operational variabilities. This approach would also minimize economic impacts and improve reliability. The Association suggests that a multi-year compliance period of at least three to five years be allowed.

IV. Unit-Specific Performance Standards Are Preferable Because CO_2 Emissions from EGUs Are Variable

The comments of the Utility Air Regulatory Group (UARG) (of which APPA is a member) include detailed data from 38 fossil fuel-fired units. As discussed in further detail in UARG's comments, several general observations can be made regarding existing EGUs and their CO_2 emissions rates. EPA should take these observations into account when developing emissions guidelines for fossil fuel-fired EGUs. Principal among the observations is that the existing fleet of fossil fuel-fired EGUs is diverse. Although coal-fired EGUs are the most diverse, differences can be found in natural gas combined cycle (NGCC) units as well.

At the individual source level, there is a wide range of operating characteristics, generating capacity, annual and hourly CO_2 emissions, and efficiency levels. These differences can fluctuate year-to-year on an individual unit basis, as well as when evaluating both the annual average values and the fluctuation between maximum and minimum values. For coal-fired EGUs, the relationship between output-based CO_2 emission rates and load level is usually inverse, with the units being more efficient at higher loads, but this inverse relationship is not always the case. In evaluating the data, UARG found that some coal-fired EGUs have less efficient years when they are operating at a high load.[11] Similarly, it is not universally true that declining annual generation equals a drop-in efficiency. It is true that many coal-fired EGUs

[11] *See* UARG Comments, Attachment 2 (Unit A, 2008; Unit V, 2011).

have seen a decline in generation and efficiency since 2006, but some units have managed to maintain fairly consistent efficiency levels. UARG was not able to evaluate the role that frequent cycling of an EGU may have on increasing CO_2 emission rates because load ramping is not adequately captured in the hourly emissions data.

Given the multitude of variables that affect the efficiency of existing coal-fired EGUs, it is a very complex task to meaningfully subcategorize coal-fired EGUs or NGCCs. UARG's analysis also illustrates the difficulty in noticeably improving efficiency levels in EGUs. When viewed in isolation, there are measures that can be taken to improve or maintain efficiency, but because of the multitude of factors that influence efficiency, some heat rate reduction improvements may be negated by other variables. As a result, EPA should be mindful that not all heat rate improvements will have a measurable impact on CO_2 emissions.

V. EPA's BSER Determination

The ANPR seeks comment on which approach the Agency should use to determine what "system may constitute BSER without defining presumptive emission limits and then allows the state to set unit-by-unit or broader emission standards based on the identified BSER."[12] The Association supports the notion that BSER should be implemented to reflect physical and/or operational measures that can be applied to or at an individual source and is adequately demonstrated. Given the diversity of APPA's membership, we offer the following discussion illustrating the advantages and disadvantages of utilizing two different approaches for setting the BSER for existing sources under a replacement rule.

The first approach EPA could consider for BSER would be some combination of heat rate improvement measures unique to each unit, like the approach adopted by the state of North Carolina in the development of its state plan in response to the CPP. Under this approach, EPA's

[12] 82 Fed. Reg. 61,511.

guideline document would list a variety of efficiency improvement projects determined to be adequately demonstrated for a subcategory of fossil units. The state would then establish rate-based standards for performance for individual units based upon applying certain projects from the list to individual sources in the state. Some disadvantages to this approach could include: (1) it would be time and resource-intensive as the states would need to examine each unit and make technological, operational, and other fact-specific judgement calls in setting the standard of performance for each source; and (2) sources would have to undertake extensive projects and possibly retire prematurely if the option(s) were not cost effective. However, a listing of heat rate improvements projects available to an EGU that are well documented and considered to be adequately demonstrated in application at individual regulated sources could be quite helpful to affected sources. If EPA follows this approach in determining BSER, it will need to account for degradation in the unit's heat rate. While certain heat rate improvement project may yield quantifiable efficiency benefits, those benefits will inevitably decrease over time due to natural degradation in the unit's heat rate. However, this approach appears to be consistent with congressional intent envisioned under section 111.

Second, EPA could also consider basing its BSER on efficient generation at each EGU, as reflected in the unit's historic performance—as it did with the NSPS for modified coal-fired EGUs.[13] In setting the NSPS for modified coal-fired EGUs, EPA determined that BSER was the EGU's "best potential performance, as determined by that source's historical performance," and could be met through "a combination of best operating practices and equipment upgrades."[14] If EPA follows this approach with BSER, the historical performance period should be longer than

[13] See 82 Fed. Reg. at 61,512; 80 Fed. Reg. at 64,658.

[14] 80 Fed. Reg. at 64,599; see also *Id*. at 64,512 Tbl. 1 (BSER for modified coal-fired EGUs is "[m]ost efficient generation at the affected EGU achievable through a combination of best operating practices and equipment upgrades").

one year (at least five years, and preferably ten) to account for the diversity of emissions profiles from an existing EGU. Although APPA challenged the notion that an EGU could consistently meet its "best" performance on a sustained basis, no party challenged the use of unit-specific historical performance as BSER. The NSPS for modified coal-fired EGUs remains in place and has not been stayed. This approach would: (1) allow a state to set performance standards that account for a unit's variable operating conditions; (2) not constrain the loads at which a unit operates; (3) provides flexibility; and (4) present a simple state plan/standard setting process. However, some concerns arise with using this methodology, such as the perception that using a unit's historic performance may not represent a "forward-looking" process for setting a standard of performance for a unit. Another concern is that while the NSPS was never challenged in the litigation, EGUs in 2015 rarely contemplated unit modification. Thus, the litigation point was moot and could be raised in future challenges to a methodology that uses historic performance.

VI. Heat Rate Improvement Projects and Operation and Maintenance ("O&M") Standards

Public power utilities have many incentives to optimize the heat rate at their EGUs through heat rate improvement projects and O&M practices. Public power utilities are owned by the community in which they operate. Therefore, any cost savings realized from the efficient operation of an EGU are passed directly to consumers. The largest cost by far of generating electricity is fuel cost. Efficiency of a coal-fired EGU or NGCC unit degrades over time. A deteriorating heat rate means that more fuel is needed to generate the identical amount of electricity. As a result, public power utilities undertake heat rate improvement and maintenance projects (and use O&M practices) on an ongoing basis to ensure that heat rate remains low. The

Association believes BSER should reflect heat rate improvements that an individual source might undertake that are cost effective.

APPA provides the information below in response to EPA's request for comment on issues related to its analysis of heat rate improvement measures in the CPP, and on issues related to potential heat rate improvements in general.[15]

EPA requested comment on the "statistical approach [used by the Agency to assess potential heat rate improvements at existing coal-fired EGUs in the CPP] and its applicability in identifying heat rate improvement opportunities at the unit level."[16] In the final CPP, EPA calculated the average heat rate improvements, that would occur across a broad geographical region, if each coal-fired EGU brought its hourly heat rate values closer to its most efficient values reported under similar conditions. As noted in the ANPR, the CPP's statistical analysis "represent[s] fleet-wide average heat rate improvement. The EPA did not conduct analyses to identify heat rate improvement opportunities at the unit level…."[17] This analysis states only what "EGUs can achieve *on average* through best practices and equipment upgrades."[18] It is of little use in determining what *individual* sources can achieve. Thus, EPA's analysis should not be used to support conclusions about the potential for heat rate improvements at individual coal-fired EGUs.

In addition, the CPP's analysis served as a purely *mathematical* and hypothetical exercise, not an *actual* evaluation of implemented heat rate improvement measures at individual units. The analysis simply calculated the potential CO_2 emission rates of the EGU fleet if all

[15] 82 Fed. Reg. at 61,513-14.
[16] *Id.* at 61,513.
[17] 82 Fed. Reg. at 61,513.
[18] 80 Fed. Reg. at 64,789.

units were able to achieve the hypothetical improvement in heat rate values. EPA failed to determine whether EGUs are, in fact, capable of reducing the variability in their heat rates.

More fundamentally, EPA incorrectly assumed that the existence of variation in the heat rate at an EGU means there is "significant variation in the operation of EGUs," indicating that "significant potential for heat rate improvement is available through the application of best practices" or other heat rate improvement measures.[19] Heat rate variability is driven by a multitude of factors, including the EGU's design, duty cycle, fuel type, size, cooling conditions, and location of each unit. Operating practices will not reduce the variability. [20,21] Instead of accounting for the differences in variability due to the factors listed, EPA based its assessment on a regression analysis and the Agency's observations of "residual" heat rate variation not accounted for by its regression.[22] Both of EPA's assessments reflect a misunderstanding of how heat rates are affected by the design and age of an EGU, as well as the technical relationships between heat rate, operating duty, and ambient temperature. [23]

Additionally, the heat rate "variability" observed in the data may not reflect actual variations in heat rate. EPA based its analysis on continuous emissions measurement systems derived gross heat rate data. These data contain too much unrelated normal variability to reliably quantify a relatively small change in unit heat rate, especially when averaged over a year. The variations reflected in the data may reflect other changes such as changes in flow monitor

[19] Technical Support Document for Carbon Pollution Guidelines for Existing Power Plant: Emission Guidelines for Greenhouse Gas Emissions from Existing Sources: electric Utility Generating Units: GHG Abatement Measures at 2030 (June 10, 2014), EPA HQ-OAR-2013-0603-000.
[20] J. Edward Cichanowicz & Michael Hein, Critique of EPA's Statistical Evaluation Defining Feasible Heat Rate Improvements at 5-8 (December 1, 2014), Attachment E to UARG, Comments on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating units; Proposed rule, Attachments, Volume II (December 1, 2014) (UARG CPP Comments).
[21] UARG CPP Comments, EPA HQ-OAR-2013-0602-22768.
[22] *Id.* at 3.
[23] *Id.* at 3-6.

calibration, calibration reference methods, bias adjustment factors, stack diameter measurement, or monitoring technology, and physical changes in the flue gas handling system.[24]

EPA's statistical analysis from the CPP rulemaking was inappropriate for identifying potential heat rate improvement opportunities. Therefore, EPA should reject that approach. The analysis was not based on individual units; it incorrectly assumed that variability in heat rate was due to inefficient operation; and it did not identify actual heat rate improvement opportunities.

When contemplating any replacement to the CPP, EPA must be careful to avoid additional flaws in its earlier Building Block 1 analysis. For example, when analyzing the potential for heat rate improvements at coal-fired EGUs, EPA relied on flawed interpretations of a 2009 report by Sargent & Lundy to generalize costs and benefits of various heat rate improvement measures.[25] Sargent & Lundy (the report's authors) later issued a follow up report to disavow EPA's interpretations.[26] Nonetheless, in relying on the 2009 Sargent & Lundy report, EPA failed to admit that the benefits identified by the report are highly variable by unit, are often not cumulative, and degrade over time. [27] In a 2014 report, the National Coal Council, a federal advisory committee to the U.S. Secretary of Energy, noted that "[t]he opportunity to apply these efficiency improvements across the existing fleet will vary significantly" given the

[24] Memorandum from Ralph L. Roberson, P.E., RMB Consulting & Research, Inc., to UARG Measurement Techniques Committee, "Real Heat Rate Improvement or Measurement Variability/Uncertainty" at 3-8 (Nov. 25, 2014), Attachment G to UARG CPP Comments, EPA-HQ-OAR-2013-0602-22768.
[25] Sargent & Lundy LLC, "Coal Fired Power Plant Heat Rate Reduction"- SL-009597 (2009 Report).
[26] Sargent & Lundy LLC, "Coal Fired Power Plant Heat Rate Reduction – NRECA" (Nov. 21, 2014), Supplemental Material No. 33 to UARG CPP Comments, EPA-HQ-OAR-2013-0602-22767.
[27] J. Edward Cichanowicz & Michael C. Hein, "Evaluation of Heat Rate Improving Techniques for Coal Fired Utility Boilers as a Response to Section 111(d) Mandates" at 3-1 to 3-2 (October 13, 2014) (Cichanowicz Heat Rate Report) Attachment D to UARG CPP Comments, EPA-HQ-OAR-2013-0602-22768.

measures already implemented at the unit and whether the unit has already achieved a high level of efficiency by other means. [28]

If efficiency benefits outweigh the costs, then EGU owners have likely already implemented many available heat rate improvements, and duplicating these efforts is not always viable.[29] For example, once heat is recovered by an individual project, it cannot be recovered again. Therefore, measures such as economizer modifications, improved air heater performance, and low temperature heat recovery will not provide cumulative benefits.[30]

Over time, the improvements made to increase a unit's heat rate will degrade, resulting in long-term payoffs that are significantly smaller than the immediate reductions observed.[31] For example, the blades of a steam turbine will gradually degrade, reducing the magnitude of that improvement absent periodic overhauls.[32] EPA, therefore, cannot rely on the immediate pay-off from efficiency improvements as the foundation for an emission standard that a unit must meet into the foreseeable future.

The practical limits to benefits from heat rate improvement measures have been noted by others. Sargent & Lundy's 2014 report echoed many of the same issues noted in the Cichanowicz Heat Rate Report, including the fact that many heat rate improvement methods are not cumulative, are temporal, and are highly-site specific.

In addition, some heat rate improvement projects take time to implement. Because public power utilities are state or locally owned, they are limited in how they raise funds for source improvements. Public power utilities raise funds for some types of heat rate improvement

[28] National Coal Council, "Reliable & Resilient- The Value of Our Existing Fleet: An Assessment of Measures to Improve Reliability & Efficiency While Reducing Emissions" at 4 (May 2014) (NCC Report), Supplemental Material No. 23 to UARG CPP Comments, EPA HQ-OAR-2013-0602-22767. Available http://www.nationalcoalcouncil.org/NEWS/NCCValueExistingCoalFleet.pdf.
[29] Cichanowicz Heat Rate Report at 4-4.
[30] NCC Report at 69.
[31] *Id.* at 70.
[32] Cichanowicz Heat Rate Report at 4-3 to 4-4.

projects with long-term debt in the form of municipal bonds. Thus, EGUs must also have sufficient time to implement and finance a project.

Moving forward, EPA must account for these factors to accurately evaluate the heat rate improvements available to EGU owners and operators. EPA must acknowledge that the benefits of heat rate improvements to EGUs will vary, are not always cumulative, will degrade over time, and may be offset by changes in load.

VII. Flexibility in the Implementation of Section 111(d) Performance Standards Is Allowable

In any replacement rule, EPA should recognize that CAA section 111(d) allows for flexible implementation and explicitly encourage states to adopt such flexibility measures. The CPP was problematic because sources could not meet the standard with actions at the facility itself (i.e., without going beyond the fence line). Compliance with the CPP *required* participating in the EPA-established trading program. But performance standards must be achievable by a source using measures at the source itself. No amount of "flexibility" can erase this requirement. Flexibility is lawful and desirable, however, once an achievable performance standard is set. In any replacement rule, EPA should allow for and encourage maximum flexibility in how a source chooses to meet the performance standards. EPA may do this by first including supportive statements in the preamble about states' authority to incorporate flexibility measures, by issuing a model rule of flexibility measures sources can automatically adopt, and by providing incentives for early action and rewards for retirements.

EPA should explicitly acknowledge that states have authority to offer sources flexible options to meet a performance standard set under section 111(d). Section 111(d) makes clear that flexible options should be allowed to achieve the standards of performance set. The statute

separates the standard *setting* from the *implementation*. Section 111(d)(1) requires states to submit a plan to EPA that "(A) establishes standards of performance for … existing source[s] …, and (B) provides for the implementation and enforcement of such standards of performance." [33] Moreover, section 111(d) draws on CAA section 110's authorization that states can use "economic incentives such as fees, marketable permits, and auctions of emissions rights" as an implementation measure.[34] Section 111(d) state plan procedures shall be "similar to that provided by section 7410". [35] Therefore, similar use of incentives should be allowed under any replacement rule contemplated under section 111(d).[36]

The Association urges EPA to develop a model rule to allow states to easily adopt flexibility mechanisms, as EPA has done in the past. A model rule is a useful and prudent way for EPA to encourage states to include flexible implementation options in their state plans. For example, in the 2005 Clean Air Mercury Rule (CAMR), EPA created a trading program in which states could choose to participate.[37,38] Significantly, this trading program was entirely separate from EPA's standard-setting process. To set the standard, EPA identified two specific pollution control technologies as the "system of emission reduction" for units to use.[39] Once BSER was set based on control technology, EPA then evaluated additional cost-effective methods for achieving the standard. The trading program itself was designed as "a fully approvable control strategy for achieving all of the emissions reductions required under the final rule in a more cost-

[33] 42 U.S.C. §7411(d) (1).
[34] 42 U.S.C. § 7411(d)(1).
[35] 42 U.S.C. § 7410 (a)(2)(A).
[36] The D.C. Circuit's vacatur of the Clean Air Mercury Rule (CAMR) dealt entirely with another issue and did not touch on CAMR's flexible compliance options. See *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008). A question remains whether a trading program under 111(d) would withstand a legal challenge.
[37] *Id.*
[38] 70 Fed. Reg. 28,606, 28,624 (May 18, 2005).
[39] *Id.* at 28,617-20, 28,621.

effective manner than other control strategies."[40] There are a wide range of flexibility measures that states could adopt to implement any replacement rule, such as emissions averaging among units at a plant, units in a corporate fleet, and non-affiliated units within the state, or trading between units across state lines. If EPA decides not to issue a model rule, it should nevertheless make expressly clear that states are permitted to have flexible mechanisms to aid in meeting the standards.[41] Further, states should have discretion over the compliance measures and market-based requirements that a state may want to implement to meet each EGU's performance standard.

APPA also urges EPA to include incentives for early action in any replacement rule. EPA acknowledged when implementing CAMR that these types of programs often lead to emissions levels below the performance standard while "maximizing overall cost-effectiveness."[42]

VIII. Additional Issues on Which EPA Seeks Comment

A. NSR Interplay

APPA has three responses to EPA's request for comment on the interplay between a replacement rule and the NSR program.[43] First, the Association supports the Agency's efforts to reform the NSR program. APPA notes, however, that these complicated issues should not be addressed in any rulemaking to replace the CPP. EPA should undertake NSR reform in a separate rulemaking dedicated to that issue. Second, any efficiency improvements made with the intent to comply with BSER would be exempt from NSR. Third, heat rate improvement projects

[40] *Id.* at 28,625.

[41] EPA has also taken this approach before in its section 111(d) emission guidelines for Large Municipal Waste Combustors. In this case, EPA noted that "[a] State plan may establish a program to allow owners or operators of municipal waste combustor plants to engage in trading of nitrogen oxide emission credits." 40 C.F.R. § 60.33b(C)(2).

[42] 69 Fed. Reg. 4652, 4697 (Jan. 30, 2004).

[43] 82 Fed. Reg. at 61,518-19.

are frequently undertaken by the owners and operators of EGUs as routine maintenance, repair, and replacement. These types of projects do not trigger NSR. To the extent these actions did trigger NSR, then the project would become cost-ineffective and impermissible under section 111(d).

B. EPA Correctly Rejects Carbon Capture and Storage (CCS) as BSER

EPA requested comment on whether CCS technology can be considered BSER for existing EGUs.[44] The Association does not believe CCS can be classified as BSER. APPA agrees with EPA's statement "that neither CCS nor partial CCS are technologies that can be considered as the BSER for existing fossil fuel-fired EGUs."[45] The available evidence does not establish that CCS meets the standard for BSER. This technology has not been adequately demonstrated and suffers from geographical limitations that prevent it from being achievable "for the industry as a whole" as required.[46]

[44] 82 Fed. Reg. at 61,517.
[45] *Id.*
[46] *See Nat'l Lime Ass'n v. EPA*, 627 F.2d 416, 431 (D.C. Cir. 1980).

IX. Conclusion

APPA appreciates the opportunity to offer these comments on the ANPR and reiterates its request that EPA propose a replacement to the CPP that properly respects its statutory authority under the CAA, balances the roles of EPA and the states, and adheres to the principles set forth herein. The Association and its members seek greater regulatory certainty as public power communities make long-term capital investment decisions based in substantial part on federal and states GHG emission policies. APPA looks forward to working with the Agency as it develops a proposed CAA section 111(d) replacement rule. If you have questions regarding our comments, please contact Ms. Carolyn Slaughter at 202-467-2943 or cslaughter@publicpower.org.

Sincerely,

Director, Environmental Policy

American Public Power Association