

Existing Source Performance Standards for Greenhouse Gas Emissions from Electrical Generating Units

Creating a Regulatory Framework Under Clean Air Act § 111(d)

A whitepaper from the Coalition for Innovative Climate Solutions

As EPA develops greenhouse gas (“GHG”) performance standards for existing power plants (“ESPS”), the agency is faced with a unique challenge: how to design a regulatory framework that fits the statutory requirements of Clean Air Act § 111(d) while also providing states with adequate guidance on developing, implementing, and overseeing their ESPS programs.

To help meet that challenge, the Coalition for Innovative Climate Solutions (“CICS”) has prepared this whitepaper to describe a regulatory framework that will assure a robust ESPS, meet Clean Air Act requirements, and preserve the necessary state flexibility. This whitepaper also addresses the first core element of developing an ESPS program: establishing the best system of emissions reduction (“BSER”) and GHG performance standards. Future CICS papers will focus on implementation pathways, accountability measures, and associated challenges.

Regulatory Framework and Section 111(d) Procedures

The Clean Air Act delegates to the states responsibility for both developing and implementing performance standards under Section 111(d). At the same time, the Clean Air Act requires EPA to set up a “procedure” that is “similar” to Section 110 within which states can innovate to “establish[] standards of performance” for GHG emissions. 42 U.S.C.A. § 7411(d)(1). This framework requires EPA to balance state primacy and flexibility with the need for clear guidelines on what sort of ESPS plans are “satisfactory” under Section 111(d). To achieve this balance, EPA’s 111(d) guidelines should be comprehensive but not prescriptive.

There are three core elements to any ESPS program under Section 111(d): setting standards, implementing those standards, and assuring accountability. In the context of GHG emission regulations:

1. Establishing BSER & GHG Performance Standards. Section 111(d) requires states to determine BSER and establish standards of performance. To streamline this process, EPA can establish source subcategories and explain EPA’s view of statutory factors that states must consider when making BSER determinations. EPA also may consider establishing a BSER “clearing house” or other system to provide states with information on different BSER options for each subcategory of sources. States would then identify BSER, set related performance standards for each source category/subcategory, and submit those standards to EPA for approval as part of the state’s Section 111(d) plan.

2. Implementation Pathways. Section 111(d) allows for flexibility when implementing performance standards, and EPA’s procedures should allow for multiple implementation pathways to satisfy statutory goals, as well as to recognize that each state is faced with unique societal, economic, and geographical conditions. Pathways may include, but are not limited to: (i) achieving a mass-based standard or a rate-based standard through a broader portfolio of state programs (such as energy efficiency, renewable energy, or cap-and-trade programs); (ii) a tradeable mass-based performance standard;¹ and (iii) source-specific or fleet-wide rate-based standards. States should remain free to adopt whatever mix of implementation pathways that are demonstrated to achieve the GHG performance standard(s) set in step 1. Additional key issues to consider are how to credit unit retirements and reward/incentivize early action.
3. Accountability Measures. Accountability measures need not be standardized and can be linked with the chosen implementation pathway(s). For example, if implementation will occur through an existing state renewable energy program, compliance with that program could be used to verify compliance with the state’s ESPS. This approach will assure accurate accounting for GHG reductions while minimizing burdens on states, sources, and EPA. At the same time, EPA would retain its oversight authority under Section 111(d)(2) and ability to impose “backstop” measures if a state’s plan fails to meet its goals.

By focusing the rulemaking process—and resulting Section 111(d) procedures and guidelines—on these three core elements, EPA can simplify the ESPS rulemaking while assuring that state plans meet the requirements of Section 111(d).

Establishing BSER and GHG Performance Standards for Existing Sources

Section 111 sets up a dichotomy: either a source is “new” and subject to Section 111(b) standards, or a source is “existing” and subject to Section 111(d) standards. A source cannot be subject to both standards, since “[t]he term ‘existing source’ means any stationary source other than a new source.” 42 U.S.C.A. § 7411(a)(6). As existing sources retire, are modified, or are otherwise replaced by “new” sources, Section 111(d) standards for that source category gradually become obsolete. That is why standards under Section 111(b) are subject to review and update every eight years, while the Clean Air Act does not provide for updates of Section 111(d) standards—since a Section 111(d) standard will naturally phase-out as sources are modified or retired, updates are not needed. Combined with the requirement that states evaluate the “remaining useful life” of sources when establishing performance standards, it appears that setting BSER and performance standards under Section 111(d) is intended to be a one-time process. At the same time, once performance standards are established, states may revise plans to make technical corrections or address implementation issues as they arise.

¹ A tradeable mass-based performance standard can be implemented in different forms. The Regional Greenhouse Gas Initiative is an example of a tradeable mass-based performance standard.

The Clean Air Act specifically grants *states* authority to establish performance standards under Section 111(d). The Act provides that EPA “shall establish a procedure” within which “each State” shall develop and submit a plan that “establishes standards of performance for any existing source for any air pollutant.” 42 U.S.C.A. § 7411(d)(1). This makes sense in the context of Section 111(d), which gives states greater flexibility than EPA when setting performance standards under Section 111(b). When “applying a standard of performance to any particular source,” states are given broad latitude to consider not only the elements identified in the definition of “standard of performance,” but also “other factors” and “the remaining useful life of the existing source.” All of this suggests a more granular, flexible level of analysis than provided for by Section 111(b), and states with existing knowledge of their sources (through public utility commissions and other governmental bodies) are better situated to undertake that analysis than a federal agency.

While states must take the lead in determining BSER and setting performance standards, EPA retains an important oversight role under Section 111(d). States must submit a plan to EPA for approval, and may be subject to a federal plan if the state plan is not “satisfactory.” EPA can avoid widely divergent state standards and help eliminate guess-work by creating Section 111(d) “procedures” or guidelines that clearly lay out EPA’s expectations for the BSER process. In so doing, EPA should recognize that different states and regions have very different energy supply options, economies, and geographical conditions. Consequently, EPA must anticipate and accept widely varying state plans.

As an initial step in the rulemaking process, EPA should establish subcategories for electric generating units (“EGUs”) based on pre-existing source categories for coal- and gas-fired units.² This would allow states to establish performance standards that would be tailored to technical characteristics that are relevant to each EGU technology. For example, a simple-cycle gas turbine and an NGCC unit have very different performance characteristics and opportunities for GHG emission reductions. For coal units, EPA may want to establish subcategories for sub-critical, supercritical and fluidized bed coal-fired units or based on fuel type (e.g. lignite versus bituminous coal). By establishing different subcategories EPA would allow states to take a more consistent approach to determining BSER for the sources in that state.

The process of determining BSER is based on a set of statutory factors that include: (i) costs; (ii) non-air quality health and environmental impacts; (iii) energy requirements; and (iv) remaining useful life. The D.C. Circuit also has required analysis of: (i) technological feasibility; (ii) overall level of emissions reductions; (iii) reasonableness of costs at source, industry, and national level; and (iv) technology development.³ Under Section 111(d), states retain authority for applying these factors to establish BSER for each source category or subcategory identified by EPA. But to assure an efficient process, reduce uncertainty, and set clear expectations, EPA’s

² EPA took this approach in its re-proposed Section 111(b) rule for new EGUs, relying on existing KKKK and Da source categories.

³ See *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375 (D.C. Cir. 1973); *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, (D.C. Cir. 1973); *Portland Cement Ass’n v. EPA*, 665 F.3d 177 (D.C. Cir. 2011).

Section 111(d) procedures should explain EPA’s view of the foregoing factors in the context of EGU subcategories, providing states with insight as to how EPA will measure state plans against the requirements of Section 111. To retain flexibility and account for regional variation, EPA must allow states to deviate from EPA’s interpretations when appropriate, based on state or unit-specific considerations, such as differing costs, technical constraints, geographic issues, fuel supply limitations, reliability or electricity supply constraints, and the remaining useful life of sources within the state.

To streamline state efforts to determine BSER under Section 111(d), EPA could establish a technology “clearinghouse” that identifies technologies and other measures that may be appropriate for states to consider when establishing standards for each subcategory. Because Section 111(d) gives states broad authority to establish performance standards and not all technologies and measures will be available or appropriate in all states, the BSER options identified by EPA should be comprehensive but not prescriptive. For example, while increased use of lower-carbon fuels may be achievable at certain units and/or certain states, it cannot constitute a universal BSER mechanism due to widely varying cost, operational, design, and fuel availability issues. The same is true for technical modifications that may not be viable or cost-effective at a source with unique design characteristics or with a relatively short remaining useful life. By establishing a clearinghouse for BSER technologies, EPA can help states share information and streamline the process of establishing performance standards.

Setting a performance standard through application of BSER and actually *achieving* the emission reductions projected for the standard are two distinct processes. BSER options identified by EPA should include technological measures that reduce GHG emissions from the sources, which in many cases will derive primarily from production efficiency and fuel considerations. BSER options identified by EPA should not depend on external mechanisms, such as consumer-side efficiency measures or renewable energy production, for two key reasons. First, because the source may not have control over off-site measures, they may not be technologically achievable by the source itself. Second, because the term “standard of performance” focuses on the *emission* of pollutants, EPA may face greater legal risk if its guidelines require actions outside of an emission source (which, in this instance, is the EGU).⁴ Some mechanisms that can effectively reduce GHG emissions, such as renewable portfolio standards, subsidies/incentives for investments in home insulation, or improvements of transmission and distribution network, may not be within the purview of state air permitting authorities, but they may be part of an expanded, coordinated state energy policy. These external measures are more properly considered implementation pathways. EPA can encourage such measures by allowing states to rely on them to achieve emission reductions that are superior to standards applicable only to generating units.

⁴ The term “standards of performance” is defined as “a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which . . . the Administrator determines has been adequately demonstrated.” 42 U.S.C. § 7411(a)(1).

Given the foregoing considerations, the BSER process should involve the following steps:

1. EPA establishes source subcategories to account for a wide range of EGU technologies.
2. EPA creates Section 111(d) procedures through which states can submit ESPS plans to EPA for review and approval. As part of its procedures, EPA identifies its interpretation of BSER factors.
3. EPA establishes a BSER clearinghouse that EPA and states can use to share information and “best practices” about potential BSER technologies.
4. States set BSER for the sources within their states in accordance with statutory and judicial factors, utilizing the BSER “clearinghouse” to streamline the process.
5. States extrapolate BSER into rate or mass-based performance standards.
6. States submit their performance standards to EPA for approval as the foundation of their Section 111(d) plan (which will also include implementation mechanisms and accountability measures not addressed in this whitepaper).

Summary

Section 111(d) performance standards are to be set by the states. They must balance a range of statutory and judicial factors. To foster state innovation and preserve flexibility, while also establishing a level playing field and clear approvability criteria, EPA can create procedures that identify EGU subcategories and clearly explain its view of the Section 111(d) factors. States can then consider BSER options and apply the statutory factors to arrive at BSER determinations and related performance standards most appropriate for the sources within that state. This process will assure a streamlined process in which EPA sets clear Section 111(d) approvability criteria that states can rely on to craft effective and flexible GHG performance standards that take into account each state’s unique mix of generation resources.

About the Coalition for Innovative Climate Solutions

The Coalition for Innovative Climate Solutions is a group of forward-thinking electric generating companies and electric service providers located across the country. CICS members reflect our nation’s diverse geography with widely varying energy resources, state regulatory frameworks, and electricity market conditions. Our members span 19 states, and represent a significant portion of the nation’s electricity industry. CICS members include Entergy, Great River Energy, Portland General Electric Company, PPL Corporation (including its affiliates LG&E and KU), Public Service Company of New Mexico, Salt River Project Agricultural Improvement and Power District, and Xcel Energy.