



BY EMAIL AND ELECTRONIC FILING

The Hon. Gina McCarthy
Administrator, U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

Attn: Docket ID No. EPA-HQ-OAR-2015-0199

Re: Comments of Environmental Defense Fund on EPA's Proposed Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; and Amendments to Framework Regulations

The Environmental Defense Fund (EDF) appreciates the opportunity to provide the following comments on the Environmental Protection Agency's (EPA) October 23, 2015 proposed rule to establish federal plan requirements and model trading rules for carbon pollution from existing electric utility generating units (EGUs).¹ Representing over 750,000 members nationwide, EDF is a national non-profit, non-partisan organization dedicated to protecting human health and the environment by effectively applying science, economics, and the law.

Climate change poses an urgent and critical threat to public health and welfare, and it is one of EDF's top priorities to secure rigorous measures to achieve rapid reductions in emissions of climate-destabilizing pollutants – especially emissions of carbon dioxide from fossil fuel-fired EGUs, which currently account for nearly 40 percent of the United States' carbon pollution.² Accordingly, we applaud EPA's historic leadership in establishing the Clean Power Plan, which established the first nation-wide limits on carbon pollution from existing fossil fuel-fired EGUs.³ EPA projects that by 2030 the CPP will reduce total CO₂ emissions from the U.S. power sector to 32% below 2005 levels,⁴ yielding significant climate benefits along with important reductions in other harmful power sector pollutants that will translate into thousands of lives saved per year and tens of thousands of avoided asthma attacks. The Clean Power Plan is an important step in

¹ Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations, 80 Fed. Reg. 64,966 (proposed Oct. 23, 2015) [hereinafter Proposed Federal Plan].

² See EPA, *Overview of Greenhouse Gases*, <http://www3.epa.gov/climatechange/ghgemissions/gases/co2.html> (last visited January 19, 2016).

³ Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662 (Oct. 23, 2015) [hereinafter Clean Power Plan].

⁴ *Id.* at 64,665.

the on-going transition to a low-carbon future that protects our communities and supports a flourishing economy.

This rulemaking is a vital complement to the Clean Power Plan, providing key tools for states and power companies that will help ensure that this program delivers on its promise and achieves the emission reductions required under the Clean Air Act. Well-designed model rules can serve as an important resource for state regulators and power companies in developing approvable state plans; facilitate the adoption of consistent emissions trading programs and other tools that enhance compliance flexibility, reduce costs, and protect grid reliability; and advance the federal-state partnership that is at the heart of section 111(d) and other cooperative federalism programs in the Clean Air Act. A robust federal plan will help assure consistent application and achievement of the Clean Power Plan nationwide.

Our comments support and reinforce critical aspects of the proposed rule. At the same time, we urge EPA to strengthen important design elements of the federal plan and model rules to ensure that the full climate and public health protections of the Clean Power Plan are realized – including, most importantly, the allowance allocation mechanism that the Agency has proposed to address the risk of increased emissions from new EGUs under a mass-based plan framework. In these comments, we:

- Support EPA’s authority under section 111(d) to issue a federal plan in situations where states fail to submit satisfactory plans or fail to implement an approved plan;
- Support EPA’s authority to implement a federal plan based on flexible market-based emissions trading programs – similar to other successful programs for the power sector under the Clean Air Act, such as the NO_x SIP Call and the Cross State Air Pollution Rule – that will allow power companies to decide how to reduce emissions in the most cost-effective manner. As described in a recent report by the Institute for Policy Integrity,⁵ such market-based programs have a long history under the Clean Air Act and have been implemented by administrations from both parties;
- Support EPA’s determination that this flexible compliance framework adequately protects grid reliability;
- Support EPA’s proposal to craft federal plans and model rules that are “trading ready,” in order to facilitate the adoption of robust markets for compliance instruments that will enhance the flexibility and cost-effectiveness of the Clean Power Plan;
- Support EPA’s proposal to allow states to voluntarily modify certain aspects of the federal plan, and voluntarily assume delegated responsibility for administering part or all of the plan, provided that the plan addresses leakage and continues to achieve the emission reductions required by the Clean Power Plan;
- Support EPA’s proposal to issue a federal plan within one year of finding that a state has not made a required submittal or has failed to implement a plan, and encourage EPA to issue a federal plan earlier where feasible in order to provide affected and states with regulatory certainty;

⁵ Richard L. Revesz, Denise A. Grab, and Jack Lienke, *Familiar Territory: A Survey of Legal Precedents for the Clean Power Plan* (Dec. 4, 2015).

- Urge EPA to finalize its model rules as early as possible in order to serve as a useful resource to state regulators, and to consider finalizing non-controversial technical provisions of the model rules shortly after the comment period closes;
- Recommend that EPA adopt just one type of federal plan approach for states where such a plan is necessary, absent special circumstances;
- Recommend that the federal plan take the form of a “trading ready,” mass-based emission budget trading program with effective protections against leakage to new sources;
- Urge EPA to allow states that are subject to a mass-based federal plan to voluntarily cover new EGUs in order to address leakage, and provide those states with full discretion to allocate allowances in whatever manner they choose;
- Urge EPA to design an allowance allocation mechanism in the federal plan and model rules that ensures that affected EGUs achieve emission reductions consistent with the requirements of the Clean Air Act in states where new EGUs are not covered by the emissions trading program. An output-based allowance allocation that delivers strong incentives for low and zero-emitting generation, as well as demand-side energy efficiency, would be far more effective in addressing leakage than EPA’s proposed allocation approach;
- Urge EPA to clarify and strengthen the required demonstration that a state must make if it elects to propose its own approach to address leakage in the context of a mass-based plan, and require a mechanism for making up emission reductions should the approach fail to deliver emission reductions consistent with the BSER;
- Urge EPA to ensure that the regulatory treatment of modified and reconstructed EGUs in a mass-based plan does not affect the emission reductions required of affected EGUs or result in emission increases that are inconsistent with the BSER;
- Recommend that EPA provide for the issuance of emission reduction credits (ERCs) for demand-side energy efficiency in states subject to a rate-based federal plan, and suggest ways to streamline the administration of such a program;
- Comment on the administrative framework for ERCs, including processes to ensure the environmental integrity of ERCs; provide for transparency and public participation in ERC generation and tracking; and rigorous and streamlined evaluation, measurement and verification (EM&V) requirements;
- Comment on market design features and monitoring mechanisms that can promote the development of well-functioning and competitive markets for allowances and ERCs;
- Urge EPA to provide a regulatory framework for modified and reconstructed EGUs that ensures these sources achieve emission reductions that fully reflect the BSER; and
- Provide feedback on the structure of the Clean Energy Investment Program (CEIP), including recommendations to ensure the CEIP provides meaningful incentives for low-income energy efficiency investments.

All prior written and oral testimony and submissions to the Agency in this matter, including all citations and attachments, as well as all of the documents cited to in these comments are hereby incorporated by reference as part of the administrative record in this EPA action, Docket ID No. EPA-HQ-OAR-2015-0199.

We appreciate the opportunity to provide comments on this important rulemaking. Please direct any inquiries regarding these comments to Tomás Carbonell (202-572-3610, tcarbonell@edf.org) or Martha Roberts (202-572-3243, mroberts@edf.org).

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I. Background

A. Climate Change is Impacting American Communities Now.

The science is clear: rising concentrations of heat-trapping gases like carbon dioxide in the atmosphere are destabilizing our climate and causing severe impacts to our health and well-being. We applaud recent efforts to curb greenhouse gas pollution domestically and internationally, which are essential to protect against catastrophic climate change. The Clean Power Plan is a crucial component of U.S. efforts to reduce carbon pollution and help avert the most damaging effects of climate change.

Since the Clean Power Plan was proposed, the need to reduce greenhouse gas pollution has grown even more urgent. When the Clean Power Plan was proposed in 2014, we were experiencing the hottest year on record – a record that was recently surpassed by even higher average global temperatures in 2015.⁶ The globally averaged land surface temperature in 2015 broke the previous record by 0.45°F (0.25°C), the widest margin by which this record has been broken.⁷ In the contiguous United States, record high temperatures outpaced record low temperatures at a rate of 2.46 to 1 over the past year—a disparity that has grown starker with each decade.⁸ In March 2015, the global concentration of carbon dioxide in the atmosphere surpassed 400 parts per million for the first time in recorded history,⁹ and it continues to rise.¹⁰

We are already seeing—and paying for—the impacts of climate change on our communities. The National Climatic Data Center reports that the United States experienced ten weather and climate disasters that each caused more than a billion dollars of damage in 2015, including devastating drought and wildfires in the West, severe storms in the South and Midwest, and flooding along the East Coast.¹¹ These billion-dollar weather and climate events have become significantly more common during the past several decades.¹² The Third National Climate Assessment, released in 2014, found that if greenhouse gas emissions are not reduced it is likely that American communities will experience more of these kinds of impacts, plus

⁶ See Climate Nexus, “Earth’s Second Consecutive Record Hot Year Signals Alarming Warming Trend,” Jan. 20, 2016, <http://climatenexus.org/climate-change-and-el-ni%C3%B1o-fueled-2015%E2%80%99s-record-heat#2>.

⁷ See Nat’l Oceanic & Atmospheric Admin., *Global Summary Information – December 2015*, <http://www.ncdc.noaa.gov/sotc/summary-info/global/201512> (last visited Jan. 20, 2016).

⁸ See Climate Nexus, “Tracking Climate Change,” <http://www.climatenexus.org/tracking-climate-change> (last visited Jan. 15, 2016).

⁹ See Nat’l Oceanic & Atmospheric Admin., “Greenhouse Gas Benchmark Reached,” May 6, 2015, <http://research.noaa.gov/News/NewsArchive/LatestNews/TabId/684/ArtMID/1768/ArticleID/11153/Greenhouse-gas-benchmark-reached-.aspx>.

¹⁰ See Nat’l Oceanic & Atmospheric Admin., *Trends in Atmospheric Carbon Dioxide*, <http://www.esrl.noaa.gov/gmd/ccgg/trends/global.html> (last visited Jan. 21, 2016).

¹¹ See Nat’l Oceanic & Atmospheric Admin., *Billion-Dollar Weather and Climate Disasters: Overview*, <http://www.ncdc.noaa.gov/billions/> (last visited Jan. 15, 2016).

¹² See Nat’l Oceanic & Atmospheric Admin., *Billion-Dollar Weather and Climate Disasters: Time Series*, <http://www.ncdc.noaa.gov/billions/time-series> (last visited Jan. 15, 2016).

reduced crop yields and livestock productivity; increased prevalence of diseases transmitted by food, water, and insects; and increased risk of illness and death due to extreme heat.¹³

The scientific consensus that climate change poses severe threats is already being validated by impacts on the ground. We must act now to reduce carbon pollution and mitigate these impacts, or the costs to our children and grandchildren will be simply unacceptable.

B. This Rulemaking Complements the State-Federal Partnership Embedded in the Clean Power Plan.

EDF strongly supports the Clean Power Plan, which sets out a feasible, traditional emissions management program that is a crucial, catalyzing step by our nation to address the urgent threat of climate change. Power plants are far and away the largest source of greenhouse gas emissions in the United States.¹⁴ In 2013, fossil fuel fired power plants emitted more than 2 billion metric tons of CO₂e, or nearly 40 percent of U.S. carbon pollution and nearly one-third of total U.S. greenhouse gas emissions.¹⁵ The Clean Power Plan will accelerate our nation's ongoing transition to clean energy, reducing carbon pollution from fossil fuel-fired power plants to 32 percent below 2005 levels by 2030.

The Clean Power Plan rests on a robust legal foundation. Section 111 of the Clean Air Act provides for the establishment of nationwide emission standards for major stationary sources of dangerous air pollution—including, since 1971, power plants.¹⁶ The Supreme Court has affirmed EPA's authority to regulate greenhouse gases three times since 2007,¹⁷ and noted in 2011 that section 111(d) of the Clean Air Act – the provision that underlies the Clean Power Plan – clearly authorizes EPA's regulation of carbon pollution from existing power plants.¹⁸ The Clean Power Plan directly responds to the Supreme Court's decision in *Massachusetts v. EPA*¹⁹ that the Clean Air Act's protections encompass greenhouse gas emissions and to EPA's science-based determination that these climate-destabilizing emissions endanger public health and welfare.²⁰ Moreover, it rests on a rigorous, extensive technical record developed through nearly two years of public consultation, more than four million public comments, and multiple public

¹³ See U.S. Glob. Change Research Program, *Climate Change Impacts in the United States: Highlights 34–37, 46–47* (May 2014), http://www.globalchange.gov/sites/globalchange/files/NCA3_Highlights_LowRes-small-FINAL_posting.pdf.

¹⁴ Unless otherwise indicated, this document uses the term “power plants” or “electric generating units” (EGUs) generically to refer to existing EGUs covered by the requirements of the proposed Clean Power Plan.

¹⁵ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013*, at ES-5 to ES-7, tbl. ES-2 (Apr. 2015), <http://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Chapter-Executive-Summary.pdf>. Of the heat-trapping pollutants emitted by sources in the United States, carbon dioxide is by far the most prevalent. Transportation emissions are the only greenhouse gas emission source that approaches the scale of power plants.

¹⁶ See, e.g., Larry Parker and James E. McCarthy, Cong. Research Serv., *Climate Change: Potential Regulation of Stationary Greenhouse Gas Sources Under the Clean Air Act*, 7-5700, R40585 (May 14, 2009).

¹⁷ *Util. Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427, 2449 (2014); *Am. Elec. Power v. Connecticut*, 131 S. Ct. 2527, 2537 (2011); *Massachusetts v. EPA*, 549 U.S. 497, 528–29 (2007).

¹⁸ *Am. Elec. Power*, 131 S. Ct. at 2537.

¹⁹ *Massachusetts v. EPA*, 549 U.S. 497 (2007).

²⁰ *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66,496 (Dec. 15, 2009).

hearings touching on nearly every aspect of the standards. Several provisions of the final Clean Power Plan were adopted in response to comments by industry and the states on grid reliability, costs, and other issues.

The structure of the Clean Power Plan reflects the well-established federal-state partnership that has formed the foundation for past successful air pollution control efforts. In the Rule, EPA finalized carbon pollution goals that reflect proven, cost-effective emission reduction opportunities available across the power sector – including operating improvements to fossil steam power plants, and shifts in generation to low and zero-emitting power plants. Each state has the opportunity to submit a state plan that articulates how affected sources within the state will reach EPA’s targets. EPA provided extensive flexibility to the states to devise customized plans to achieve the required emission reductions over the eight-year period from 2022 to 2030—allowing each state to decide upon the most feasible and cost-effective approach for mitigating carbon pollution, and providing states with substantial discretion as to how emission reductions are achieved across facilities and over time.

Like other cooperative federalism programs established by the Clean Air Act, section 111(d) requires EPA to issue a federal plan in the event that a state does not submit a satisfactory plan that complies with federal emission guidelines, or fails to implement an approved plan. The federal plan ensures a predictable and consistent approach to achieving carbon pollution reductions in states that fail to submit or implement their own plans. Under this approach, EPA also has the discretion to issue model rules that state can use as a template to facilitate development of their own streamlined and cost-effective state plans.

This rulemaking represents an opportunity to effectively deploy these two valuable tools by setting forth model compliance frameworks that will provide states and regulated entities with helpful resources for developing state plans and accessing flexible, cost-effective compliance mechanisms. The proposed federal plan and model rules that EPA has provided in this rulemaking will help ensure that the promised protections reflected in the Clean Power Plan are achieved in practice, and are fully consistent with the cooperative federalism framework of section 111(d)). Our comments below offer suggestions that will ensure that the model rules and federal plan set appropriate incentives to achieve in practice emissions reductions that are equivalent to the “best system of emissions reduction,” an essential piece of delivering on the promise of the Clean Power Plan.

We encourage EPA to build upon the success of the Clean Power Plan in this rulemaking. Many of the same design considerations that inform the state planning process and formed the foundation for the flexible, cost-effective approach of the Clean Power Plan are also relevant to EPA’s development of a federal plan and model rules. In our comments below, we encourage EPA to design a federal plan and model rules that will ensure environmental performance, while providing compliance flexibility that enhances cost-effectiveness, supports state decision-making, and reinforces electric reliability.

II. EPA’s Authority to Implement a Federal Plan is Well-Established and Allows for Cost-Effective Emissions Trading Approaches Harmonized with State Plans.

A. Overview

Like other cooperative federalism programs established by the Clean Air Act, section 111(d) requires EPA to issue a federal plan in the event that a state does not submit a satisfactory plan that complies with federal emission guidelines, or fails to implement an approved state plan. The federal plan provides a predictable and consistent approach to achieving carbon pollution reductions in states that do not submit their own plans. From both an environmental and economic perspective, EPA must ensure that such a federal plan is adopted and enforced swiftly and consistently in every state where it is needed. Prompt implementation and enforcement will prevent any lag in a state beginning—or continuing—to achieve its carbon reduction goal under the CPP. Quick enactment will also provide affected EGUs with regulatory certainty.

As described below, EPA can and should design a federal plan that achieves carbon pollution reductions from the power sector through flexible, straightforward, market-based programs that are directly enforceable against regulated power plants and that appropriately incentivize low- and zero-carbon generation. In order to fulfill the requirements of section 111(d), the final federal plan must also set incentives that ensure emissions reductions equivalent to the “best system of emissions reduction” are achieved in practice. Like state plans, we recommend that a federal plan facilitate trading of compliance instruments between sources covered by the federal plan and entities in other states that are subject to compatible plans.

The federal plan should wherever possible support opportunities for states to customize and tailor its application, provided that customization does not compromise the achievement of emission reductions consistent with the BSER, or interfere with EPA’s ability to finalize a federal plan within one year. A federal plan can reflect individual state priorities and preferences through a modular architecture that would allow states to customize key elements, such as allocations of compliance instruments. Such a program would follow in the best tradition of national air pollution reduction programs under the Clean Air Act—borrowing in many key respects from successful federal and state plans that have reduced interstate transport of other major pollutants from the power sector. This section provides recommendations for the design and approach to key cross-cutting elements of such a federal plan.

B. EPA Has Well-Established Legal Authority to Apply a Federal Plan Where a State Fails to Submit a Plan or Fails to Implement an Approved Plan.

EPA has well-established legal authority to promulgate a Federal Plan for states that fail to submit a state plan under the CPP. Section 111(d)(1) sets out the process through which states may submit and administer a state plan, stating that:

The Administrator shall prescribe regulations which shall establish *a procedure similar to that provided by section [110] of this title* under which each State shall submit to the Administrator a plan which (A) establishes standards of

performance for any existing source for any air pollutant...and (B) provides for the implementation and enforcement of such standards of performance.²¹

EPA's specific authority to promulgate a Federal Plan stems from section 111(d)(2), which states that:

The Administrator shall have *the same authority*—

(A) to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan *as [she] would have under section [110(c)] of this title* in the case of failure to submit an implementation plan.²²

Thus, the CAA gives EPA “the same authority” under section 111(d) to promulgate a Federal Plan as the agency has under section 110(c), which states that “[t]he Administrator shall promulgate a Federal implementation plan at any time within 2 years after the Administrator... finds that a State has failed to make a required submission.”²³ Failing to make a “required submission” accordingly triggers EPA’s authority to promulgate a Federal Plan under 111(d).

We note that in the final Clean Power Plan, EPA established several different submissions that a state is required to provide if it chooses to implement a state plan. These submissions include: by September 2016, a final state plan or an initial submittal requesting a two-year extension; by September 2017, an update from states that successfully requested an extension in the deadline for submitting a final state plan; and by September 2018, a final state plan from states that received an extension. All are “required submissions” necessary for a state to apply a state plan. Accordingly, EPA “shall promulgate” a federal plan when it finds that any state has failed to meet the deadline for any of these required submissions. We encourage EPA to swiftly address a state’s failure to meet any of these reasonable deadlines by adopting a federal plan as expeditiously as possible within the proposed one-year deadline for issuance of a Federal Plan, as we discuss further below.

In the proposed rule, EPA also correctly determined that the authority to issue a federal plan extends to cases where a state is failing to implement or enforce a state plan as required under section 111(d)(1). If an approved state plan does not achieve the requirements of the CPP, EPA must act to preserve the emission reductions envisioned by the guidelines. Under section 111(d)(1)(B), EPA must establish a procedure for states to submit plans that “provide[] for the implementation and enforcement” of the standards of performance.²⁴ If a state fails to implement or enforce an approved plan, or a plan proves inadequate for other reasons, then that plan no longer meets the requirements of section 111(d). Under these circumstances, it is reasonable for

²¹ 42 U.S.C. § 7411(d)(1) (emphasis added).

²² 42 U.S.C. § 7411(d)(2) (emphasis added).

²³ 42 U.S.C. § 7410(c)(1).

²⁴ 42 U.S.C. § 7411(d)(1) (directing the Administrator to “prescribe regulations which shall establish a procedure...under which each State shall submit to the Administrator a plan which...(B) provides for the *implementation and enforcement* of such standards of performance”) (emphasis added).

EPA to call for a state plan revision and, if the state does not correct the deficiency, promulgate a federal plan to ensure that the requirements of section 111(d) are met.²⁵

As EPA describes, this interpretation of section 111(d) is reinforced by the cross-reference in section 111(d) to the procedures established for state implementation plans (SIPs) under section 110. Section 110(k)(5) directs EPA to call for a SIP revision when a state plan “is substantially inadequate” to “comply with any requirement” of the Clean Air Act. A SIP that does not provide for “implementation and enforcement” is inherently “substantially inadequate” to comply with the Act, since providing for implementation and enforcement is a fundamental requirement of state plans under section 111(d). Under section 110(k)(5), EPA also may call for a SIP revision when a state plan “is substantially inadequate to attain or maintain the relevant national ambient air quality standard.” This scenario is analogous to one in which sources do not meet CPP emission reduction obligations due to a state’s failure to implement or enforce a SIP. Consistent with the requirements of section 111(d), EPA’s proposed procedure for addressing situations where a state plan is improperly implemented or enforced has close parallels to the procedure for an analogous situation under section 110.

This authority is vital to achieve the emissions reductions anticipated under the Clean Power Plan. Accordingly, we urge swift deployment of applicable remedies – including a call for state plan revision and, as appropriate, a federal plan — in situations where a state is failing to implement its plan. In order to assure that a federal plan can be applied in a streamlined, swift manner, we also encourage EPA to identify opportunities wherever possible to streamline the procedures for calling a plan where a state has failed to implement its approved plan.

As discussed further below, EPA’s authority to design the Federal Plan mirrors the design options and approaches available to a state. Courts have consistently found that under section 110 of the CAA—the provision after which 111(d) is modeled, as indicated in the statutory text above—EPA “stands in the shoes of the state” when adopting a federal plan and may deploy the same regulatory tools that Congress has authorized the states to use in achieving federal clean air goals, such as flexible emission trading approaches.²⁶ Further, section 302(y) of the Clean Air Act provides EPA with express authority to deploy such approaches in federal implementation plans for criteria pollutants,²⁷ indicating that such authority is also available for federal plans under section 111(d).

C. EPA Has Taken Remaining Useful Life into Consideration

²⁵ See 80 Fed. Reg. at 65,036.

²⁶ See *Cent. Ariz. Water Conservation Dist. v. EPA*, 990 F.2d 1531, 1541 (9th Cir. 1993) (When promulgating a federal plan, EPA “stands in the shoes of the defaulting state, and all of the rights and duties that would otherwise fall to the State accrue instead to EPA.”) (quotation omitted); *S. Terminal Corp. v. EPA*, 504 F.2d 646, 668 (1st Cir. 1974) (“The statutory scheme would be unworkable were it read as giving to EPA, when promulgating an implementation plan for a state, less than those necessary measures allowed by Congress to a state to accomplish federal clean air goals. We do not adopt any such crippling interpretation.”).

²⁷ 42 U.S.C. § 7602(y) (“The term ‘Federal implementation plan’ means a plan (or portion thereof) promulgated by the Administrator to fill all or a portion of a gap or otherwise correct all or a portion of an inadequacy in a State implementation plan, and which includes enforceable emission limitations or other control measures, means or techniques (including economic incentives, such as marketable permits or auctions of emissions allowances), and provides for attainment of the relevant national ambient air quality standard.”).

We agree with EPA’s conclusion that the agency has adequately considered “remaining useful life” in the proposed model rules and federal plan by including numerous compliance flexibilities provided in the Clean Power Plan Emissions Guidelines.²⁸ These flexibilities include (1) emissions trading, including interstate trading to other federal plan states and (as we endorse below) other compatible states; (2) the glide path under the extended compliance period, beginning with higher targets in 2022 that gradually decrease until 2030; (3) the Clean Energy Incentive Program (CEIP), which will enable an early start to trading markets by rewarding early actors with credits or allowances that can then be acquired by other affected EGUs; as well as additional flexibilities highlighted in the proposal.

Section 111(d)(2) merely directs EPA to “take into consideration” remaining useful life of sources, “among other factors,” when issuing a federal plan – as states are allowed to do when developing their own plans under section 111(d)(1). This accommodating language does not mandate any particular response or approach, and makes clear that the agency may consider a range of factors. EPA’s proposal carefully reviews the range of flexibilities available to sources under a federal plan and properly concludes that these flexibilities inherently allow sources to decide for themselves how to come into compliance, and what investments to make in what timeframes.²⁹ As such, this approach allows and supports the ability of owners and operators to make their own decisions about the remaining useful life of their regulated units, and to adopt compliance plans that are carefully tailored to it. This means that owners and operators can avoid measures such as the installation of any additional pollution controls or efficiency enhancing retrofits at units that are nearing the end of their useful life, and instead comply solely through the use of allowances or credits obtained from the market. EPA’s conclusion that it has taken remaining useful life into consideration is well within its expert discretion and builds on the agency’s thorough discussion in its materials supporting the Clean Power Plan.³⁰

D. EPA Should Include a Robust Emissions Trading Program in its Final Federal Plan

EDF strongly supports the “trading ready” approach included in the final Clean Power Plan, and reflected in the proposed model rule and federal plan. Emissions trading allows owners and operators to take advantage of opportunities beyond their own portfolios, thus expanding the timing and location of emission reductions considerably, bringing corresponding reductions in compliance costs, and further enhancing the flexibility available to those tasked with maintaining system reliability. Various analyses, including EPA’s Regulatory Impact Analysis for the proposed Clean Power Plan, have concluded that carbon pollution goals can be more cost-effectively achieved if states “pool” their emission reduction opportunities rather than achieve their goals on an individual state basis.³¹ By facilitating larger multi-state compliance markets, the “trading ready” approach can afford operators greater options for compliance.

²⁸ 42 U.S.C. § 7411(d)(2) (“In promulgating a standard of performance under a plan prescribed under this paragraph, the Administrator shall take into consideration, among other factors, remaining useful lives of the sources in the category of sources to which such standard applies.”).

²⁹ Proposed Federal Plan, 80 Fed. Reg. at 64,982–84.

³⁰ See *id.*, 80 Fed. Reg. at 64,982–84; see also Clean Power Plan, 80 Fed. Reg. at 64,869–74.

³¹ EPA’s Regulatory Impact Analysis for the proposed Clean Power Plan concluded that a “regional” approach to compliance – under which states within each region combine their respective state targets and meet them on a

EDF supports a robust role for emissions trading in the federal plan (and model rules, as discussed further below). The federal plan should provide for as large a market as possible, subject to the general conditions on interstate trading that are described in the final Clean Power Plan and that help assure environmental integrity. In particular, the final federal plan should be designed to allow power companies with compliance obligations to use compliance instruments from any state operating under a compatible federal plan or state plan. This “plug and play” compatibility would allow states operating under the federal plan to secure the benefits of multistate coordination, without having to pursue potentially complex negotiations or formal agreements with other states.

Such an approach has direct precedents under the Clean Air Act. In the 2011 CSAPR, EPA promulgated federal plans for all twenty-eight states covered by the rule.³² Although established on a state-by-state basis, the federal plans were based on a common architecture that created mutually compatible emissions trading programs for each state. As a result, any power plant operating in a state covered by a CSAPR federal plan can trade allowances with any power plant in any other state covered by the federal plan.³³ Moreover, CSAPR offered each state the option of modifying the trading program in certain respects, either by submitting an “abbreviated” state plan or a “full” state plan, while preserving their interlocking, “plug and play” compatibility.³⁴ Thus, states in CSAPR could customize the allowance allocations to individual power plants, as well as certain other program features, while continuing to enjoy the benefits of a flexible multistate trading program.³⁵

regional basis – would have 17% lower compliance costs by 2030 relative to achieving compliance on an individual state by state basis. *See* EPA, Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants ES-8, tbl. ES-4 (June 2014). A 2015 analysis by PJM, one of the nation’s largest regional grid operators, also concluded that a regional approach using mass-based goals and emissions trading would have substantially lower costs than a state-by-state approach. *See* PJM, *PJM Interconnection Economic Analysis of the EPA Clean Power Plan Proposal* 82 (Mar. 2015).

³² *See* Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,208 (Aug. 8, 2011) [hereinafter CSAPR]; *see also* Federal Implementation Plans for Iowa, Michigan, Missouri, Oklahoma, and Wisconsin and Determination for Kansas Regarding Interstate Transport of Ozone, 76 Fed. Reg. 80,760 (Dec. 27, 2011).

³³ In order to comply with a decision of the DC Circuit and assure the attainment of air quality standards in localized areas of downwind states, EPA limited the amount of interstate trading in CSAPR through a set of “assurance provisions” that ensured no individual state would exceed its emission budget by more than a predetermined level. *See* 76 Fed. Reg. at 48,294–96; *see also* Rulemaking To Amend Dates in Federal Implementation Plans Addressing Interstate Transport of Ozone and Fine Particulate Matter, 79 Fed. Reg. 71,663 (Dec. 3, 2014) (revising deadlines for assurance provisions). Because carbon dioxide is a dispersed pollutant, there would not be a need for such provisions in the context of the Clean Power Plan.

³⁴ This feature was also included in the Clean Air Interstate Rule, adopted during the George W. Bush Administration. *See* CSAPR, 76 Fed. Reg. at 48,321, 327–28 (describing abbreviated and full SIP submission options under CSAPR and CAIR).

³⁵ The Regional Greenhouse Gas Initiative (RGGI), through which nine Northeastern states established an emissions trading program for carbon pollution from existing power plants in 2005, also demonstrates the potential for a system of mutually compatible federal and state plans based on common elements. Although RGGI was created pursuant to a formal memorandum of understanding among the member states, the program was implemented through a “model rule” that was individually promulgated by each state participating in the program. Similar to the CSAPR federal plan, the model rule sets forth basic elements that are needed to ensure the mutual compatibility and effectiveness of the emissions trading programs created under RGGI, including: common procedures for accounting

At the same time, EPA must assure the integrity of the trading system by ensuring that market participants use transparent and effective tracking systems for compliance instruments. EDF accordingly supports the use of EPA's Allowance Tracking and Compliance System ("ATCS") for maintaining data about the characteristics and ownership of compliance instruments. The ATCS already tracks permits under the Cross-State Air Pollution Rule ("CSAPR") and the Acid Rain Program ("ARP") without imposing significant transaction costs on the market. Since many facilities required to hold permits for SO₂ and NO_x emissions under CSAPR and ARP are also affected sources under the Clean Power Plan, the ATCS has the benefit of familiarity for many potential market participants. This will further expedite market formation and accelerate corresponding benefits. EDF encourages EPA, in finalizing the model rules, to highlight the large proportion of affected EGUs that already have accounts in the ATCS.

The ATCS system also contains several features to safeguard environmental benefits, and EDF believes that maintaining these features is essential. Most fundamentally, the ATCS assigns each compliance instrument a unique serial number to ensure that it is not double-counted. By recording the characteristics of each compliance instrument, the ATCS will ensure that only the appropriate type of instrument is used for compliance by each affected source, if different types of instruments are in currency. Since the ATCS provides general and compliance accounts for each holder of compliance instruments, the system reduces uncertainty about whether a source has fulfilled its requirements under the Clean Power Plan. By serving as a central database for information about compliance instruments, the ATCS will also provide a useful coordinating function if compliance instruments are issued under different implementation plans from state to state. Lastly, the ability to track individual compliance instruments³⁶ will also help maintain the integrity of ERCs by enabling EPA to identify any credits that are found to have been improperly issued.

EDF also supports allowing linked programs to use an EPA-designated, rather than an EPA-administered tracking system.³⁷ These systems should be required to register with EPA or otherwise demonstrate compliance with CPP requirements and interoperability with the EPA-administered system. Allowing this flexibility for tracking systems will promote a more robust market and lower-cost compliance.

If the federal plan utilizes a rate-based approach, EDF strongly supports requiring EPA's proposed components of the eligibility application.³⁸ These components are vital for ensuring

for and tracking allowances; monitoring, reporting, and recordkeeping requirements; and common penalty provisions for power plants that hold insufficient allowances to cover their emissions. See Regional Greenhouse Gas Initiative, Model Rule Part XX CO₂ Budget Trading Program subpart XX-2.1-2.6 (designation and authorities of authorized account representatives), subpart XX-4.1, subpart XX-6.1-6.4 (allowance tracking system), subpart XX-6.5 (penalties for excess emissions), subpart XX-8 (monitoring and reporting requirements).

³⁶ See Proposed Federal Plan, 80 Fed. Reg. at 64,977.

³⁷ See *id.*

³⁸ See *id.* at 64,999. As EPA details, these components require ERC providers to demonstrate that each ERC (or associated generation project, as applicable) is being credited *only* in the federal plan, is from an eligible resource, has a compliant EM&V plan, serves regional load that included the qualifying rate-based state (if located in a mass-based state), and meets all requirements for independent third-party verification and approval.

that individual ERCs are non-duplicative, and that each ERC issued under the federal plan meets all eligibility requirements, including for evaluation, measurement, and verification. If EPA approves linkages with rate-based state-plans, the required components will help to ensure the compatibility of ERCs throughout the market. Compliance instruments under a mass-based implementation plan—emission allowances—would resemble those already issued for NO_x and SO₂ under other Clean Air Act programs, which EPA has a strong track record of administering.

E. EPA Has Well-Established Legal Authority to Include Emissions Trading as a Part of Federal Plans

EDF agrees with EPA that the use of emissions trading in a federal plan is fully consistent with the Clean Air Act. As discussed above, CAA section 111(d)(2) provides EPA with “the same authority” to impose a federal plan under section 111(d) as it has to impose a Federal Implementation Plan (FIP) under section 110. Courts have consistently found that under section 110, EPA “stands in the shoes of the state” when adopting a federal plan.³⁹ Thus, the same authority exercised by states under 111(d) in connection with their State Plans may be assumed to be available to EPA when the agency issues a Federal Plan under 111(d).

As EPA comprehensively explained and provided in the Clean Power Plan final rule, states have discretion to allow emissions trading in their State Plans.⁴⁰ Emission standards that allow for trading of compliance instruments clearly satisfy the definition of a “standard of performance” under section 111.⁴¹ Further, this approach builds on decades of successful emissions trading programs under the Clean Air Act.⁴² Thus, the EPA—standing in the shoes of the state—has the same authority to use emissions trading when establishing standards of performance in a federal plan under the Clean Power Plan.

As EPA correctly notes, the use of emissions trading in section 111(d) Federal Plans is also grounded in section 302(y) of the CAA. This section defines a “Federal Implementation Plan” as a plan which may include “economic incentives, such as marketable permits or auctions of emissions allowances” in order to attain the relevant NAAQS.⁴³ Emissions trading, either in the form of emissions credits or allowances, is a type of “economic incentive” that section 302(y) clearly encompasses. As discussed above, section 111(d)(2) gives EPA “the same authority” under section 111(d) to promulgate a Federal Plan as the agency has to impose a FIP under section 110(c). Section 110(c), in turn, discusses when the EPA must promulgate a “Federal

³⁹ See *Cent. Ariz. Water Conservation Dist. v. EPA*, 990 F.2d 1531, 1541 (9th Cir. 1993) (When promulgating a federal plan, EPA “stands in the shoes of the defaulting state, and all of the rights and duties that would otherwise fall to the State accrue instead to EPA.”) (quotation omitted); *S. Terminal Corp. v. EPA*, 504 F.2d 646, 668 (1st Cir. 1974) (“The statutory scheme would be unworkable were it read as giving to EPA, when promulgating an implementation plan for a state, less than those necessary measures allowed by Congress to a state to accomplish federal clean air goals. We do not adopt any such crippling interpretation.”).

⁴⁰ See Clean Power Plan, 80 Fed. Reg. at 64,832–43 (Section VIII.C: “State Plan Approaches”).

⁴¹ See Proposed Federal Plan, 80 Fed. Reg. at 64,988 (citing Section V.A. of the preamble to the Clean Power Plan).

⁴² See Clean Power Plan, 80 Fed. Reg. at 64,773; see also Richard L. Revesz et al., *Familiar Territory: A Survey of Legal Precedents for the Clean Power Plan*, Institute for Policy Integrity Working Paper (Dec. 2015), <http://policyintegrity.org/files/publications/FamiliarTerritory.pdf> (reviewing the extensive history of emissions trading under different Clean Air Act programs).

⁴³ 42 U.S.C. § 7602(y) (emphasis added).

implementation plan”⁴⁴—the exact term used in section 302(y). Thus, section 302(y)’s definition of a “Federal Implementation Plan”—which directly pertains to FIPs in section 110—equally empower Federal Plans established under section 111(d) to include “economic incentives,” such as emissions trading.

There is ample administrative precedent for EPA using such “economic incentives” in section 110 FIPs. As part of CSAPR, EPA promulgated a FIP that employed emissions trading.⁴⁵ In that Final Rule, EPA stated that “The Transport Rule requires substantial near-term emission reductions in every covered state to address each state’s significant contribution to nonattainment and interference with maintenance downwind. This rule achieves these reductions through FIPs that regulate the power sector *using air quality-assured trading programs* whose assurance provisions ensure that necessary reductions will occur within every covered state.”⁴⁶ In 2006, EPA promulgated a FIP to implement the Clean Air Interstate Rule (CAIR), in which EPA also established NOx and SO2 emissions trading programs for the power sector.⁴⁷

Furthermore, there is administrative precedent for EPA using emissions trading in federal programs outside of the section 110 context. Under section 126, for example, EPA promulgated a federal plan for the “NOx SIP Call”—referred to as the “Federal NOx Budget Trading Program.”⁴⁸ As EPA discussed in that rulemaking, emissions trading “is a compliance mechanism that enables sources to make cost-effective decisions to meet their allowance requirements (which are their emission limits). Therefore, EPA adopted such a program as a cost-effective means of implementing the requirements of section 126.”⁴⁹ Notably, section 126, like section 110, is very source-specific in its language, as the following statutory text illustrates:

Any State or political subdivision may petition the Administrator for a finding that *any major source or group of stationary sources* emits or would emit any air pollutant in violation of the prohibition of section 7410(a)(2)(D)(ii) of this title or this section.⁵⁰

Moreover, section 126 goes on to provide that it shall be a violation of the Clean Air Act “for any major existing source” to operate for longer than three months after EPA has made the finding above, unless “such source” complies with “emission limitations and compliance

⁴⁴ 42 U.S.C. § 7410(c) (“The Administrator shall promulgate a *Federal implementation plan* at any time within 2 years after the Administrator . . . finds that a State has failed to make a required submission”) (emphasis added).

⁴⁵ See CSAPR, 76 Fed. Reg. 48,208.

⁴⁶ *Id.* at 48,210 (emphasis added).

⁴⁷ Federal Implementation Plans To Reduce Interstate Transport of Fine Particulate Matter and Ozone, 71 Fed. Reg. 25,328, 25,343 (Apr. 28, 2006).

⁴⁸ Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 65 Fed. Reg. 2,674 (Jan. 18, 2000).

⁴⁹ *Id.* at 2,686. The D.C. Circuit upheld the main aspects of the Federal NOx Budget Trading Program—including the use of an emissions trading program—in *Appalachian Power Co. v. EPA*, 249 F.3d 1032 (D.C. Cir. 2001). Various state, industry, and other petitioners had challenged several features of this final rule on multiple grounds. But the D.C. Circuit ultimately upheld “most aspects” of the rule, while remanding to EPA for reconsideration two technical issues unrelated to EPA’s general legal authority to engage in emissions trading in the context of a section 126 rule.

⁵⁰ 42 U.S.C. § 7426(b) (emphasis added).

schedules” prescribed by EPA.⁵¹ This source-specific language has been interpreted to allow for aggregate emission limits across EGUs with emissions trading, as the Federal NOX Budget Trading Program demonstrates.

F. The Federal Plan Establishes Emissions Standards Directly on Affected EGUs.

EDF notes that EPA is correct in stating that this Federal Plan, if promulgated for a particular state, will impose its emissions standards and other requirements directly on affected EGUs. Thus, the responsibility to comply with the Federal Plan will fall to the owners and operators of those affected EGUs—not to the state or state officials. This scope of the Federal Plan is clearly outlined in 40 C.F.R. § 62.13, which states that “Federal plans apply to *owners and operators of affected facilities* that are not covered by an EPA approved and currently effective State or Tribal plan.”⁵² Moreover, these obligations under the Federal Plan—should an owner or operator fail to comply with them—are directly enforceable by EPA against the affected EGUs. Section 111(d)(2) states that:

(2) The Administrator shall have the same authority—

...

(B) to enforce the provisions of such plan in cases where the State fails to enforce them as he would have under sections [113] and [114] . . . with respect to an implementation plan.⁵³

Section 113, in turn, provides EPA with the ability to enforce a Federal Plan against the affected EGUs via a number of methods, such as issuing a compliance order, issuing an administrative penalty, or bringing a civil action.⁵⁴

G. EPA Should Design a Federal Plan that Empowers the States and Fosters Partnership with EPA

Although EPA’s proposed federal plan designs can be wholly implemented by EPA without any involvement from the state, states may welcome the opportunity to play a role in making specific policy choices or implementing specific features of the federal plan. Even in the context of a federal plan, EPA should still identify opportunities to empower states and advance the federal-state partnership reflected in section 111(d). There are several ways in which EPA could design the federal plan to provide states with the option to play a role in policy decisions and plan implementation.

EPA should allow partial state plans that modify provisions of the federal plan without impacting the achievement of emission reductions required by the Clean Power Plan. EPA could identify certain “modular” components of the Federal Plan that could be customized at the option of the state through a partial state plan while maintaining the overall environmental integrity and

⁵¹ *Id.* § 7426(c).

⁵² 40 C.F.R. § 62.13 (emphasis added).

⁵³ 42 U.S.C. § 7411(d)(2).

⁵⁴ *See* 42 U.S.C. § 7413(a)–(h).

cost-effectiveness of the plan. To that end, EDF supports EPA's proposal within the Federal Plan to allow for state-determined allowance distribution, so long as the state plan adequately addresses leakage of emissions to new sources.⁵⁵ This concept is fully consistent with the Cross-State Air Pollution Rule (CSAPR), in which EPA provided states with the option of submitting an "abbreviated" state plan that replaced the allowance allocation provisions of the federal plan with alternative mechanisms.⁵⁶ Provided that the federal plan continues to effectively address leakage, EPA can similarly provide states with the option of auctioning the allowances or otherwise modifying the allocation methodology.

In addition to allocations, other provisions of the federal plan could likely be adjusted by the state without altering its effectiveness in achieving the state goal. For example, EPA could consider allowing states to determine whether and to what extent interstate trading of compliance instruments is allowed; whether to "opt in" new sources to a mass-based plan in order to gain further discretion over allowance allocations; and whether to issue credits for a broader range of ERC-generating resources if EPA were to finalize a rate-based federal plan. These are illustrative examples of features of the federal plan that could likely be customized by the state without affecting the achievement of emission reductions required by the Clean Power Plan.

EPA should allow delegation of federal plans. EPA could delegate the implementation and enforcement of the Federal Plan to state environmental regulators, just as EPA has done with respect to past section 111(d) federal plans,⁵⁷ as well as New Source Review permitting and administration of the Regional Haze program.⁵⁸ Delegation of the implementation of the Federal Plan would preserve the state's important role in carrying out and enforcing Clean Air Act programs, while conserving EPA's limited administrative resources. Delegation is also one vehicle through which the state could take responsibility for administering an EM&V framework for energy efficiency, which would have benefits in the context of both mass-based and rate-based federal plans. Accordingly, we agree with EPA's proposed determination that delegation of part or all of the administration of the federal plan is permissible.⁵⁹

EPA should allow states to transition to a state plan. We support EPA's proposed authorization for states to apply to transition from a federal plan to a state plan.⁶⁰ EPA should support state efforts to take over and manage their own state's emission reduction efforts. However, this transition must occur in an orderly fashion that maintains clear guidance for

⁵⁵ Proposed Federal Plan, 80 Fed. Reg. 64,966, 65,027–29.

⁵⁶ CSAPR, 76 Fed. Reg. at 48,326.

⁵⁷ In promulgating a federal plan for municipal solid waste landfills in 1999, EPA encouraged states to request delegated authority to administer the plan and provided specific procedures for doing so. *See* Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction Prior to May 30, 1991 and Have Not Been Modified or Reconstructed Since May 30, 1991, 64 Fed. Reg. 60,689, 60,698 (Nov. 8, 1999). EPA has approved such delegation requests for at least one state. *See* Approval and Promulgation of Plans for Designated Facilities; New Jersey; Delegation of Authority, 72 Fed. Reg. 1,668 (Jan. 16, 2007).

⁵⁸ *See* 40 C.F.R. § 52.21(u) (providing for delegation of Prevention of Significant Deterioration permitting responsibilities to other agencies); 40 C.F.R. § 52.26(e) (providing for delegation of certain EPA functions relating to visibility protection to "any state or local air pollution control agency" or to "any Federal land manager with jurisdiction over the area").

⁵⁹ *See* Proposed Federal Plan, 80 Fed. Reg. at 65,032–33.

⁶⁰ *See id.* at 65,011, 65,029.

affected EGUs and electricity markets. In particular, we agree with EPA’s proposal that states may only transition to a state plan at the end of a compliance period.⁶¹

Empowering states should not come at the cost of timely application of a federal plan. EDF stresses, however, that while we generally support allowing states a role in elements of the Federal Plan, this partnership must not jeopardize EPA’s ability to issue a Federal Plan for a state as soon as practicable within the one-year deadline.

H. The Proposed Federal Plan and Model Rules Fully Support Grid Reliability

EDF strongly agrees with EPA’s proposed determination that it is not necessary to provide a reliability safety valve mechanism in the context of the federal plan or model rules.⁶² As we explain below, the Clean Power Plan has several integral design features that inherently protect reliability. Moreover, the specific federal plan and model rule architectures that EPA has proposed reflect time-tested market-based approaches that minimize costs and allow power companies significant flexibility in achieving emission reductions. EPA correctly recognizes that this flexibility provides ample opportunity for power companies to adjust the timing and manner of emission reductions to account for reliability considerations.

The Clean Power Plan supports and protects grid reliability. As EDF noted in a white paper issued shortly after the release of the final Clean Power Plan,⁶³ the Clean Power Plan as a whole has multiple, overlapping features that more than adequately provide for reliability contingencies – including:

- An extensive lead time of nearly seven years before *any* emission reduction requirements take effect;
- A gradual “phase-in” period for emission reduction requirements between 2022 and 2030;
- Flexibility for states to adjust the timing of emission reductions during the interim period, provided that the interim performance requirements are met on average over 2022-2029;
- Opportunities for states to adopt either rate-based or mass-based compliance frameworks that include emissions trading and averaging – allowing power companies significant discretion to adjust the timing, location, and manner of emission reductions to account for resource adequacy or operational stability;
- A transparent, deliberative planning process that requires states to consider reliability implications in the development of their plans, and provides states with the opportunity to

⁶¹ *See id.*

⁶² *See id.* at 64,982.

⁶³ *See* Nicholas Bianco et al., EDF, *An Early Look at the Clean Power Plan in Six Charts* (Aug. 2015), <http://blogs.edf.org/climate411/files/2015/08/An-Early-Look-at-the-Clean-Power-Plan-in-Six-Charts.pdf>; *see also* Michael Panfil et al., EDF, *Protective Carbon Pollution Standards and Electric Reliability* (Apr. 2015), http://www.edf.org/sites/default/files/content/reliability_issues_-_formatted_white_paper_clean3.pdf.

consult public utility commissions (PUCs), grid operators, utilities, and other entities with responsibility for maintaining reliability; and

- A close partnership between EPA, the Department of Energy, and the Federal Energy Regulatory Commission (FERC) – memorialized in a formal agreement – to ensure these three federal agencies coordinate in monitoring and responding to reliability considerations related to Clean Power Plan implementation.

In addition to these integral features of the Clean Power Plan, there is a robust system of institutions, industry standards, and market instruments that already exist to plan for and respond to both short and long-term reliability concerns – and that will continue to protect reliability during the implementation of the Clean Power Plan.⁶⁴ This existing framework includes the national reliability standards approved by FERC and implemented by the North American Electric Reliability Corporation; the regional transmission planning process overseen by FERC; resource adequacy and transmission planning processes undertaken by independent system operators and PUCs; and market tools such as long-term capacity markets and reliability must-run contracts. These institutions and safeguards have performed extremely well in recent history, enabling the power sector to operate with a high degree of reliability even as the composition of the grid has changed dramatically and as the power sector has come into compliance with other major Clean Air Act regulations.

For these reasons, prominent energy experts have observed that the combination of existing reliability protections and the inherent design features of the Clean Power Plan – particularly the extended timeframe for implementation and extensive opportunities for market flexibility – provide ample support for system reliability.⁶⁵ Experts have also noted that the types of changes that the power sector is likely to experience under the Clean Power Plan are consistent with the recent transition toward cleaner energy sources in the power sector, which has occurred without significant reliability concerns. EPA’s own extensive analysis of reliability issues in the final Clean Power Plan, which is supported by its dispatch modeling of the rule, confirms that the reliability impacts of the rule are “modest and manageable.”⁶⁶

The proposed federal plans provide ample flexibility for power companies and grid operators to protect reliability. In the proposed rule, EPA offers federal plan designs that incorporate cost-

⁶⁴ See Michael Panfil, *Protective Carbon Pollution Standards and Electric Reliability*; Susan Tierney et al., Analysis Grp., *Electric System Reliability and EPA’s Clean Power Plan: Tools and Practices* (Feb. 2015), http://www.analysisgroup.com/uploadedFiles/Content/Insights/Publishing/Electric_System_Reliability_and_EPAs_Clean_Power_Plan_Tools_and_Practices.pdf.

⁶⁵ See Susan Tierney et al., Analysis Grp., *Electric System Reliability and EPA’s Clean Power Plan: Tools and Practices* (Feb. 2015), http://www.analysisgroup.com/uploadedFiles/Content/Insights/Publishing/Electric_System_Reliability_and_EPAs_Clean_Power_Plan_Tools_and_Practices.pdf; Susan Tierney et al., *Ensuring Electric Grid Reliability Under the Clean Power Plan* (Apr. 2015), <http://www.westerngrid.net/wp-content/uploads/2015/04/Full-Report-Ensuring-Electric-Grid-Reliability-Under-the-Clean-Power-P....pdf>; Susan Tierney Decl. ¶¶ 60–65, in Joint Addendum: Exhibits in Support of Movant Respondent-Intervenors’ Responses in Opposition to Motions for Stay B49–B53, *West Virginia v. EPA*, No. 15-1363 (D.C. Cir. Dec. 8, 2015) [hereinafter Joint Addendum]; Joseph T. Kelliher Decl. ¶¶ 7–9, in Joint Addendum C30–C31; Jon Wellingshoff Decl. ¶¶ 21–35, in Joint Addendum B117–B125.

⁶⁶ EPA, Technical Support Document: Resource Adequacy and Reliability Analysis 1 (Aug. 2015).

effective, market-based compliance frameworks. Emissions trading unlocks extensive compliance flexibilities for power companies – allowing them to adjust emission reductions across facilities and over time to minimize costs and ensure reliable grid operation, and allowing power companies to acquire compliance instruments to continue operating, where doing so is more cost-effective than directly reducing emissions at affected EGUs.

The power sector’s many decades of experience with emissions trading programs has confirmed that these programs support and protect reliable grid operations, as EPA extensively detailed in the Clean Power Plan final rule. Mass-based emissions trading programs in particular have been in widespread use in the power sector for non-greenhouse gas pollutants since the early 1990s,⁶⁷ in a number of different market and regulatory contexts. None of the mass-based emissions trading programs administered by EPA have included a reliability safety valve – and none of them have ever been demonstrated to interfere with grid reliability.⁶⁸ This long track record of successful implementation of emissions trading programs indicates there is no reason to expect that comparable programs under the Clean Power Plan will require a reliability safety valve. Given the background features of the Clean Power Plan, the inherent flexibilities of market-based programs, and the extensive track record of programs comparable to the proposed federal plan and model rules, EPA would be fully justified in declining to create a reliability safety valve under the federal plan and model rules.

A reliability set-aside is the best way to address any remaining concerns about reliability while preserving the environmental integrity of the Clean Power Plan. If EPA nevertheless decides to take additional precautions related to grid reliability in the final model rules and federal plan, it should adopt a reliability “set-aside” as outlined in the proposed rule. Under this approach, EPA would create a small reservoir of compliance instruments that could be accessed by affected EGUs that must operate to maintain grid reliability and that – for whatever reason – are unable to obtain sufficient compliance instruments in the marketplace. This “set-aside” would provide additional protection for grid reliability without compromising the emission reduction requirements of the Clean Power Plan.

In the proposed rule, EPA requests comment on how best to implement a reliability set-aside in the context of a rate-based model rule or federal plan.⁶⁹ One approach to doing so involves adjusting the rate-based standards for affected EGUs downwards by a modest amount (perhaps two to five percent), and then establishing an additional stock of ERCs in a reliability set-aside that compensates for the increased stringency of the rate-based standards. This mechanism is comparable in its effects to the approach EPA has suggested for mass-based plans, under which future allowance allocations for the interim compliance period would be reduced by the amount

⁶⁷ See Clean Power Plan, 80 Fed. Reg. at 64,733–35; EPA, Legal Memorandum Accompanying the Clean Power Plan for Certain Issues 104–13 (Aug. 2015); Richard L. Revesz et al., *Familiar Territory: A Survey of Legal Precedents for the Clean Power Plan*, Institute for Policy Integrity Working Paper 3–5, 6–10 (Dec. 2015), <http://policyintegrity.org/files/publications/FamiliarTerritory.pdf>.

⁶⁸ See Jon Wellinohoff Decl. ¶ 29, in Joint Addendum B122 (“I am not aware of any instance in which a Clean Air Act regulation has been responsible for endangering resource adequacy.”).

⁶⁹ See Proposed Federal Plan, 80 Fed. Reg. 64,982.

of the reliability set-aside.⁷⁰ In both cases, a portion of compliance instruments would be reserved for the reliability set-aside, providing a pool of instruments for individual facilities that must operate to maintain grid reliability. To assure that this reliability set-aside does not compromise the emission reductions required by the Clean Power Plan, affected EGUs as a whole would face a commensurate and modest increase in program stringency.

I. EPA Should Adopt the Federal Plan As Soon As Practicable Within a Year of a State's Failure to Make a Required Submittal

EDF supports the one-year deadline for EPA issuance of a Federal Plan following a finding of failure to submit, included in the Clean Power Plan final rule.⁷¹ Section 111(d) does not require EPA to afford more time before a federal plan is issued. Neither is it desirable that EPA do so, especially given the urgency of achieving reductions in carbon pollution and the oft-expressed desire of power companies to have regulatory certainty in advance of the Clean Power Plan compliance dates. EPA's proposed one-year deadline provides ample time for the state to cure any modest deficiencies in a required submittal under the Clean Power Plan, and for EPA to formulate an appropriate federal plan should the state fail to make such a curative filing.

In situations where it is feasible to promulgate a federal plan prior to the one-year deadline, EPA need not and should not defer such action. As the Supreme Court held when interpreting the analogous requirement in section 110 that EPA issue a federal implementation plan within two years of a failure to make a required submittal: "...EPA is not obliged to wait two years or postpone its action *even a single day*: The Act empowers to Agency to promulgate a FIP 'at any time' within the two year limit."⁷² Thus, we encourage EPA to adopt the federal plan as soon as practicable within the one-year timeframe, in order to provide regulatory certainty for businesses with compliance obligations at the earliest possible time.

III. Selection of Plan Approach for a Federal Plan

A. EPA Should Apply Only One Type of Federal Plan

EPA should consider selecting and applying one type of trading-ready plan as the default plan for all states that receive a federal plan. So doing would provide several distinct advantages. First and most importantly, implementing just one program nationwide would help strengthen the nascent emissions market, promoting liquidity and reducing overall compliance costs by allowing regulated entities to take advantage of low-cost emissions reduction opportunities over a wider geography than would otherwise be possible. This would provide

⁷⁰ A second possible approach is to allow the affected EGU to apply to EPA or to the state for a fixed number of "borrowed" ERCs as needed to maintain operations for grid reliability. Within one year of borrowing the ERCs, the affected EGU would be required to surrender additional ERCs equal to the number of borrowed ERCs (perhaps with supplemental ERCs required to serve as "interest" on the borrowed ERCs). If the affected EGU were to fail to surrender the required ERCs, it would be subject to the same enforcement penalties that would apply if an affected EGU failed to meet other compliance obligations under the plan.

⁷¹ See Clean Power Plan, 80 Fed. Reg. at 64,861.

⁷² *EPA v. EME Homer City Generation*, 134 S. Ct. 1584, 1601 (2014) (emphasis added).

clear value to power companies, businesses, consumers, and grid operators alike. It would also provide greater regulatory certainty to units in states that expect to be subject to a federal plan. Finally, this approach could considerably simplify EPA’s administrative burden compared to implementing multiple different types of programs.

While there are clear advantages to implementing a single default plan, EPA may wish to allow for states to petition for the application of a second designated alternative federal plan if the jurisdiction can demonstrate that so doing is appropriate due to its unique circumstances. For example, if a tribal land or state is totally encircled by a state or states that are implementing 2-rate trading programs, then EPA may wish to allow them to petition to have a 2-rate federal plan imposed even if EPA adopts a mass-based program as the default federal plan.

When determining whether to make a mass or rate-based program the default for the federal plan, we would encourage EPA to consider that mass-based programs are widely recognized as having greater administrative simplicity than rate-based programs. They can also provide greater emissions certainty and clearer market signals. However, these benefits could be severely undermined if EPA does not adopt a robust leakage policy. As explained in more detail below, we recommend that EPA finalize a mass-based federal plan in conjunction with adequate leakage prevention measures that go above and beyond those laid out in the proposal.

If EPA implements a rate-based federal plan, then it should directly apply the national performance rates to the two subcategories of affected EGUs (as reflected in the proposal), as opposed to adopting a “blended rate” plan. Adopting a dual rate federal plan would provide states and power companies the benefit of the trading ready-structure, because affected EGUs in a dual rate plan can trade compliance instruments with entities in any other state that has a compatible plan. By contrast, the Clean Power Plan appropriately provides that entities in different “blended rate” states can only trade with each other if the states adopt a single average blended rate – a condition that would be difficult to satisfy in the context of a federal plan. As with a mass-based plan, facilitating trading between states is advantageous as it allows regulated entities to take advantage of low-cost emissions reduction opportunities over a wider geography than would otherwise be possible, which will provide clear value to power companies, businesses, consumers, and grid operators alike.

B. Provided that EPA Includes Effective Mechanisms to Protect Against Leakage, EPA Should Adopt a Mass-Based Emissions Trading Program as the Preferred Federal Plan

A threshold issue for the federal plan is whether it should apply the subcategory rate standards finalized in the Clean Power Plan, or instead be designed as a mass-based emissions trading system. Because states implementing the Clean Power Plan will have the discretion to choose either form of state goal, EPA may likewise exercise this choice under its broad authority when promulgating a federal plan on behalf of a particular state.⁷³ Similarly, EPA may select

⁷³ Although there is no case law interpreting the scope of EPA’s federal plan authority under section 111(d), the courts have consistently found that under section 110 – the provision after which 111(d) is modeled – EPA “stands in the shoes of the state” when adopting a federal plan and may deploy the same regulatory tools that Congress has authorized the states use in achieve federal clean air goals. *See Cent. Ariz. Water Conservation Dist. v. EPA*, 990 F.2d 1531, 1541 (9th Cir. 1993) (When promulgating a federal plan, EPA “stands in the shoes of the defaulting

from a range of regulatory approaches to implement the required emission reductions—so long as the federal plan, like state plans required by section 111(d), “establishes standards of performance for any existing source” within the state and “provides for the implementation and enforcement of such standards of performance.”⁷⁴ Both mass- and rate-based state goals have their own advantages, and a model federal plan could be designed to achieve either.

However, the selection of a mass-based state goal, implemented through a flexible emissions trading program that applies to regulated power plants, offers a suite of compelling policy features that make it the preferred basis for a federal plan – provided that EPA also finalizes an effective mechanism for mitigating “leakage” of emissions to new sources, as discussed further below. First, this approach would be straightforward for EPA to establish and administer – requiring principally that the agency track the ownership and submission of emission allowances by regulated entities, as has been successfully and routinely done under prior trading programs.

Second, this system would ensure that the state goal is met cost-effectively by providing the fleet of power plants with the flexibility to determine which facilities can most efficiently reduce carbon pollution (and on what schedule). This system would establish a market “price” on carbon emissions that would shift generation from carbon-intensive sources to low or zero-emitting sources, and would incentivize companies and other entities to invest in energy efficiency, renewable generation, and other projects to reduce carbon emissions from regulated facilities as necessary to minimize the cost of achieving the state’s budget.

In addition, this system has a long history of success in the power sector and other major industrial sectors, and is familiar to power companies in virtually every state. Examples of similar programs include:

- In the Cross-State Air Pollution Rule (CSAPR), which was upheld by the Supreme Court in 2014, EPA adopted state-wide emissions budgets for sulfur dioxide and nitrogen oxides from the power sector in twenty-eight states, and issued federal plans for each state establishing emissions trading programs to achieve those budgets;
- In the Clean Air Interstate Rule (2005) and NO_x SIP Call (1998), EPA similarly adopted state-wide emissions budgets for these pollutants, and provided model rules and federal plans that encouraged the adoption of emissions trading programs in dozens of states.⁷⁵

state, and all of the rights and duties that would otherwise fall to the State accrue instead to EPA.”) (quotation omitted); *S. Terminal Corp. v. EPA*, 504 F.2d 646, 668 (1st Cir. 1974) (“The statutory scheme would be unworkable were it read as giving to EPA, when promulgating an implementation plan for a state, less than those necessary measures allowed by Congress to a state to accomplish federal clean air goals. We do not adopt any such crippling interpretation.”).

⁷⁴ 42 U.S.C. § 7411(d)(1).

⁷⁵ In CAIR, EPA initially issued model rules as a way of encouraging states to adopt mutually compatible emission trading programs. The CAIR rule was followed one year later by a rule establishing a “backstop” federal plan, which was nearly identical to the CAIR model rule, for all states that did not submit state plans compliant with CAIR. *See* Federal Implementation Plans To Reduce Interstate Transport of Fine Particulate Matter and Ozone, 71 Fed. Reg. 25,328, 25,330–31 (Apr. 28, 2006). The NO_x SIP Call was similarly implemented by means of a model emissions trading rule that was voluntarily adopted by multiple states. *See* NO_x SIP Call, 63 Fed. Reg. 57,356, 57,366 (Oct. 27, 1998).

- Ten states—including California and the nine Northeastern states participating in the Regional Greenhouse Gas Initiative (RGGI)—are currently using similar emissions trading programs to achieve carbon dioxide reductions from the power sector.
- Congress established a similar emissions trading program for sulfur dioxide emissions from coal-fired power plants nationwide in the 1990 Clean Air Act Amendments, under Title IV of the Clean Air Act.

However, as described more fully below, there is a potential for “leakage” to new power plants in mass-based states with plans that do not cover new sources. For this reason, the federal plan – like state plans – must incorporate mechanisms that, as EPA states in the Clean Power Plan, ensure “the standards of performance applied to the affected EGUs are, in the aggregate, at least equivalent with the emission performance rates, and therefore appropriately reflect the BSER as required by the statute.”⁷⁶

IV. A Mass-Based Federal Plan and Model Rule Should Be Designed to Ensure Environmental Integrity.

A mass-based federal plan and model rule must ensure the achievement of emissions reductions that – as the statute requires - reflect the application of the BSER. Due to the unique, interconnected nature of the power sector, this “equivalence” requirement necessarily entails that the model rule and federal plan provide mechanisms to mitigate shifts in generation to unaffected EGUs that are inconsistent with the BSER.

As EPA notes in the Clean Power Plan, “leakage” encompasses the “potential of an alternative form of implementation of the BSER (e.g., the rate-based and mass-based state goals) to create a larger incentive for affected EGUs to shift generation to new fossil fuel-fired EGUs” relative to what would occur under a dual rate approach.⁷⁷ Defined in this manner, leakage can manifest itself in the form of “shifts in generation to unaffected fossil fuel-fired sources” that “result in increased emissions, relative to what would have happened had generation shifts consistent with the BSER occurred.”⁷⁸ Thus, leakage can be satisfactorily addressed in the context of the state or federal plan by correcting undue incentives to shift generation to unaffected EGUs, and by assuring that the aggregate emissions performance of the plan is equivalent to what would be expected if the BSER were fully implemented without shifting generation to new EGUs.

As discussed below, not all of EPA’s proposed options for a mass-based federal plan and model rule realize this essential aspect of environmental integrity.

The following discussion lays out alternative design approaches that do assure the environmental integrity of the program.

⁷⁶ Clean Power Plan, 80 Fed. Reg. at 64,823.

⁷⁷ *Id.* at 64,823.

⁷⁸ *Id.* at 64,822-23.

A. EPA Has Clear Authority to Require That Mass-Based State Plans Address Leakage

Under a mass-based federal plan, it is entirely appropriate for EPA to include provisions addressing leakage, just as states must do for any mass-based state plan. As the agency observed in the Clean Power Plan preamble, the BSER includes shifts in generation from higher-emitting EGUs to lower-emitting NGCC and renewables. Leakage could occur if generation shifted from EGUs that are subject to a mass budget to those that are not (e.g., new NGCC)—a risk that results from the interconnected nature of the electricity sector.⁷⁹ Perversely, leakage might allow affected EGUs to remain below their emission budgets without achieving the reductions envisioned by the BSER.

Leakage would undermine the environmental benefits of the Clean Power Plan, in contradiction to the core requirement of section 111(d) that state and federal plans alike establish “standards of performance” for existing sources that “reflect[] the degree of *emission limitation* achievable through the application of the [BSER].”⁸⁰ Section 111(d) further directs EPA to ensure that state and federal plans alike “provide[] for the implementation and enforcement of such standards of performance.” Where, as here, EPA has shown that a mass-based plan creates a significant risk that existing sources will not achieve emission reductions consistent with the BSER, EPA must ensure that state and federal plans include appropriate “implementation and enforcement” provisions that will protect against leakage and secure the required emission reductions from existing EGUs.

B. Mass-Based Plans Must Be Designed to Ensure Environmental Integrity.

It is essential that mass-based programs are designed to ensure achievement of emissions reductions equivalent to the Clean Power Plan targets. This is true whether the mass-based program is implemented through a state plan or whether it is implemented as a federal plan. Below, we first discuss findings that show that certain of EPA’s proposed options for a mass-based federal plan and model rule realize this essential aspect of environmental integrity, and then lay out alternative approaches that assure the environmental integrity of the program by reflecting the incentives and outcomes achieved through the application of the BSER.

EPA’s Proposed Approach for Regulating Covered Sources Through a Mass-Based Program for Existing Units Only Does Not Assure Equivalent Emissions Reductions, But Several Policy Design Options Exist that Can Address this Problem.

Overview

As EPA appropriately noted in its final Clean Power Plan and the current proposed rule, emissions from affected EGUs could fail to achieve levels consistent with the BSER if

⁷⁹ *See id.*

⁸⁰ 42 U.S.C. § 7411(a)(1) (emphasis added).

compliance approaches create undue incentives to shift generation and emissions to new EGUs. This process is commonly referred to as emissions “leakage.”

In its proposal, EPA proposed a mass-based federal plan and model rule with a small output-based allocation of allowances that aimed to address the potential for leakage and assure environmental integrity. Through economic modeling of various policy scenarios for the power sector, we have concluded that EPA is correct that proper policy design of mass-based plans is necessary to avoid leakage and assure environmental integrity. As described below, our analysis found that leakage could erode forty percent of the cumulative reductions in emissions expected under the Clean Power Plan unless EPA finalizes model rule and federal plan provisions that effectively deploy available tools to mitigate leakage. In order to protect the climate and public health objectives of the Clean Power Plan and comply with the core requirement for emissions performance to reflect the “best system of emission reduction”, mass-based plans must provide incentives to low and zero carbon resources that are equivalent to those that would exist were the BSER implemented without shifting generation from existing, affected EGUs to new EGUs.

A number of stakeholders have been evaluating the potential for leakage under the program as proposed, and have been modeling the impact of various solutions, including the allocation approach set out in the proposal.⁸¹ All of these analyses (including our own), find that EPA’s proposed set-aside provides inadequate incentives to achieve emission performance consistent with the BSER – but these analyses also find that the output-based allocation approach could be enhanced to provide stronger incentives for power sector activities that mitigate leakage, including zero-emitting generation, lower-emitting generation, and energy efficiency (“low and zero carbon resources”).

We present here analysis that explores how the combination of output-based allocations and significant investments in energy efficiency can address leakage. We find that it is possible to design output based allocation approaches that significantly outperform EPA’s proposed approach. However, our modeled results rely on meaningful uptake of energy efficiency in order to fully address leakage. EPA and the states could encourage such investments by making allowance allocations available to energy efficiency on the same basis as non-emitting generation. Consistent with other recent analyses, our results support that EPA should apply output-based allocations for low and zero carbon resources at robust levels in order to more closely mirror the incentives they face under BSER.

We urge EPA to require that any mass-based programs for existing units include appropriate and effective measures to avoid emissions leakage and ensure equivalence with the BSER standard, as provided in the Clean Power Plan and as required under the statute. Whether under a state or

⁸¹ M.J. Bradley & Associates LLC, EPA’S CLEAN POWER PLAN: SUMMARY OF IPM MODELING RESULTS 3, 19 (January 13, 2016), <http://www.mjbradley.com/reports/modeling-analysis-epas-clean-power-plan>; Resources for the Future, APPROACHES TO ADDRESS POTENTIAL CO2 EMISSIONS LEAKAGE TO NEW SOURCES UNDER THE CLEAN POWER PLAN (January 21, 2016), <http://www.rff.org/files/RFF-CPP-Technical-Background.pdf>; Natural Resources Defense Council (NRDC), COMMENTS ON PROPOSED FEDERAL PLAN & MODEL RULES (2016).

federal plan, EPA should assure that the efficacy of approaches to address leakage has been demonstrated through rigorous analytics and economic modeling where the solution is based on anticipated market responses. Where economic modeling is necessary, EPA should demonstrate the efficacy of the approach under a range of real world scenarios to ensure that it will deliver the intended results under heterogeneous circumstances.

In addition, we note that the most straightforward and effective approach for addressing leakage is to implement a mass-based program with new source complements, which is an option available to the states under the Clean Power Plan. Below, we encourage EPA to structure the federal plan in such a way as to encourage states to voluntarily include new sources within the coverage of the mass-based program. We also identify a number of options for ensuring environmental integrity and accountability for states that propose their own alternative leakage fix, and urge that EPA's guidance to states clearly articulate the demonstration necessary to show equivalence.

Inclusion of new sources in mass-based programs is a highly effective option for ensuring that mass-based programs achieve generation incentives and emission performance levels consistent with the BSER

We strongly support EPA's decision in the Clean Power Plan to provide a pathway for states to mitigate leakage by addressing emissions from "new non-affected fossil EGUs in conjunction with emission standards for affected EGUs in a mass-based plan."⁸² We further support EPA's determination that a state's plan would be presumptively approvable if it adopted an EPA provided mass budget that includes the state mass-based CO₂ goal for affected EGUs plus a new source CO₂ emission complement, and that states should have full flexibility to allocate allowances however they chose if they adopt this program design. EPA should make these advantages clear in the final rule.

By covering all emissions sources, the system ensures that the market incentives most closely align with the incentive structure under the BSER and accordingly will achieve emission performance levels consistent with the BSER. The market-driven incentives will support low compliance costs that benefit households and businesses alike. Accordingly, we urge EPA to ensure that the final rule preserves this important option for the states, and clarifies that states subject to a mass-based federal plan may also voluntarily elect to cover new sources through a partial state plan submission which avoids leakage and assures equivalence with the BSER.

EPA should finalize options for addressing emissions leakage that enhance application of the tools identified by EPA in the proposed Federal Plan

In the Clean Power Plan, EPA provided states with the option to "use allocation methods in the state plan that counteract incentives to shift generation from affected EGUs to unaffected fossil-fired sources."⁸³ EPA further provided proposed allowance set-aside provisions that, if finalized, would be considered to be presumptively approvable. To determine how well the proposed set-

⁸² Clean Power Plan, 80 Fed. Reg. at 64,888.

⁸³ *Id.*

asides would perform under various policy conditions, we worked with leading modeling experts to complete economic analysis of market-based options using the FACETS model. Through this extensive analysis, we have concluded that EPA is correct that proper policy design of a mass-based program is essential. We find that a poorly designed approach could result in unintended market incentives to shift to new emitting generation and risk severe emissions leakage.

We further found that EPA's proposed approach provided helpful tools to properly align generation incentives, but their application was substantially insufficient to address the risk of emissions leakage. In particular, we found that an updating output-based allocation approach that leveraged a far greater percentage of the allocation pool could close the emissions gap and produce emission performance levels consistent with the BSER as long as the allocation design also sufficiently recognizes and helps deploy zero-emitting electricity generation resources, including energy efficiency. This suggests that EPA should consider devoting all of the allowances to updating output based allocations.

1. Analytic Approach

This analysis was performed using FACETS, which is a multi-region U.S. energy systems model built in the well-established TIMES modeling framework. It contains a realistic representation of key U.S. power sector infrastructure constraints and seeks to minimize total societal costs of CPP compliance, constrained by the public policies being modeled. FACETS' level of detail and outputs in the business-as-usual scenario are comparable to those of the IPM model. More details about the model and its assumptions can be found at <http://facets-model.com/>. We also note that the results we detail here are largely consistent with analysis by Resources for the Future and by ICF for NRDC, both of which utilized different modeling platforms (Haiku and IPM, respectively).⁸⁴ This suggests that the findings here are robust and hold up under a wide range of future assumptions. We strongly recommend that EPA also apply a broad range of test conditions when deciding which leakage approach to finalize.

Using the FACETS platform, we examined the effectiveness of the following four output-based allocation scenarios:

- Scenario 1: All allowances were allocated on an updating output basis to steam generation, existing natural gas combined cycle units, and non-emitting resources coupled with enhanced investments in energy efficiency. In this scenario, all generation (in MWh) from these sources were credited equally.
- Scenario 2: All allowances were allocated on an updating output basis to steam generation, existing natural gas combined cycle units, and non-emitting resources coupled with enhanced investments in energy efficiency. In this case allocations to each generation type were proportional to their treatment under the dual rate system. For example, steam generation received allowance allocations at a rate of 1,305 lbs

⁸⁴ Resources for the Future, APPROACHES TO ADDRESS POTENTIAL CO2 EMISSIONS LEAKAGE TO NEW SOURCES UNDER THE CLEAN POWER PLAN (January 21, 2016), <http://www.rff.org/files/RFF-CPP-Technical-Background.pdf>; Natural Resources Defense Council (NRDC), COMMENTS ON PROPOSED FEDERAL PLAN & MODEL RULES (2016).

CO₂/MWh in 2030 and natural gas combined cycle units received allocations at a rate of 771 lbs CO₂/MWh. Non-emitting resources were allocated allowances in a quantity proportional to the allocation to existing natural gas combined cycle units in order to prevent an erosion of the incentive non-emitting resources would otherwise face in the marketplace. Allocations were prorated to ensure that each state's cap was not exceeded.

- Scenario 3: A portion of the allowances were allocated on an updating output basis to natural gas and renewable generation, coupled with enhanced investments in energy efficiency. Allocations were made on the basis of the new source performance standards for new natural gas combined cycle units under Section 111(b) of the Clean Air Act (1,030 lbs CO₂/MWh).
- Scenario 4: This scenario modeled EPA's proposed allocation fix. Following EPA's approach, natural gas combined cycle units received allocations from a leakage set-aside if they exceeded a 50 percent capacity factor, and then only received allocations for the amount of generation over the 50 percent capacity factor. This was coupled with EPA's proposed renewable set-aside. Per EPA's proposal, both set-asides were limited in size, with the renewable set-aside limited to 5 percent of all allowances and the output-based allocation set-aside for natural gas generation was equal to 10 percent of the capacity of the state's natural gas combined cycle units multiplied by the hours in a year multiplied by the allocation rate for the set-aside.

We evaluated the effectiveness of these approaches using EPA's definition of leakage in the final Clean Power Plan as the failure to achieve emission performance levels consistent with the BSER.⁸⁵ The final Clean Power Plan contains a methodology by which EPA translated the BSER into emissions targets for states implementing mass-based programs for existing and new sources. As such, the mass-based budgets for existing EGUs plus the new source complements are designed to be equivalent to the dual rate-based standard, and reflect total EGU emissions in the absence of leakage. Thus, the CO₂ emissions budgets plus the new source complements represent an expression of EPA's intended outcomes from the application of the BSER.

2. Summary of results

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See Clean Power Plan, 80 Fed. Reg. at 64,822 (EPA more fully "define[s] as "leakage" "the potential of an alternative form of implementation of the BSER (e.g., the rate-based and mass-based state goals) to create a larger incentive for affected EGUs to shift generation to new fossil fuel-fired EGUs relative to what would occur when the implementation of the BSER took the form of standards of performance incorporating the subcategory-specific emission performance rates representing the BSER. In the proposal, the EPA recognized that the statutory construction regarding the BSER is to reduce emissions, which can be achieved through shifts of generation. Movement of generation between and among sources is needed to produce overall reductions, particularly movement from higher-emitting affected EGUs to lower-emitting affected EGUs, and from all affected EGUs to zero-emitting RE. In all of these cases, the fossil sources involved in these generation shifts are subject to obligations under this final rule.").

Our analysis finds that output-based allocations can help improve outcomes for mass-based programs for existing units. We find that Scenarios 1 through 3—so long as they are accompanied by meaningful investments in energy efficiency—can all serve as effective leakage solutions. Note, however, that various approaches may produce greater differences from one another under certain circumstances, including when states see lower uptake of additional energy efficiency investments.

One option to appropriately incentivize energy efficiency would be to make energy efficiency projects eligible for output-based allowance allocations. Our results indicate that output based allocation can support emission performance levels consistent with the BSER, when implemented to provide robust incentives to low and zero-emitting generation and when complemented with investments in energy efficiency. EPA’s proposed solution (Scenario 4) similarly uses output-based allocations; however, because this approach is applied at a substantially insufficient level, it is accordingly ineffective at addressing leakage and delivering emission performance levels equivalent to the BSER.

Instead, a properly designed approach must direct a sufficient number of allowances towards addressing emissions leakage, and also provide sufficient incentives (consistent with the incentives in a rate-based framework) for investment in zero-emitting generation and energy efficiency. Given the scale of the issue and the vital importance of adopting a resilient approach, we recommend that EPA devote all or nearly all of the allowances to updating output based allocations to ensure the allocations provide incentives properly aligned with those anticipated under application of the BSER.

3. EPA’s proposed allocation approach

Our analysis finds that the limited scope and small size of the output-based allocation solution in EPA’s proposed approach means that it is an insufficient incentive to achieve emission performance levels consistent with the BSER, resulting in the erosion of roughly one-third of the intended emissions benefits of the Clean Power Plan in the absence of significant investments in energy efficiency. This represents a small improvement in emissions outcomes over a worst-case scenario in which mass-based plans for existing units only include no allocation mechanisms to address leakage; according to our model, cumulative emission reductions in this worst-case scenario would be forty percent less than anticipated under a mass-based program with new source complements.

One reason why EPA’s proposed approach does not effectively mitigate leakage is that it provides an insufficient incentive to existing natural gas combined cycle units. As proposed, the set-aside would only reward generation from existing gas plants if their capacity factor exceeds 50 percent. However, more than 60 percent of all gas generators operated below a 50 percent capacity factor in 2012 (on a unit basis). Furthermore, our analysis found that this threshold feature in EPA’s allocation approach will not increase the number of units operating above the 50 percent capacity factor in a manner consistent with BSER. In fact, our analysis suggests that the percentage of gas generators operating below the 50 percent capacity factor may actually increase under this scenario when compared to historical levels.

Capacity utilization rates for NGCC generation

Capacity Utilization	Percent of Units Operating in Capacity Utilization Range	
	2012 Historical	Average utilization under EPA's proposed leakage fix
Below 25%	24%	54%
25-50%	38%	14%
50-72%	33%	11%
72-84%	4%	7%
Full availability	1%	14%

Importantly, there is actually reason to believe that the model might be over-estimating the responsiveness of existing gas-fired generation to EPA's proposed output-based allocation approach. This is because the FACETS model assumes that plant operators have perfect foresight about their future economic opportunities (as do most economic models). Simply put, this means that the model assumes that plant operators will know whether or not they will reach the 50 percent threshold on the very first day of each compliance period, and will bid into the electricity market accordingly. In contrast, actual plant operators will have considerable uncertainty about whether or not their generators will pass this threshold in any given year. This is particularly true in the early months of a compliance period when there is uncertainty about what the next few years will bring with regards to fuel prices and unit outages. The implication is that plant operators can be expected to bid into the electricity markets more conservatively than we have modeled here. This would result in a smaller response to the incentive provided by the leakage set-aside, and suggests that our emission outcome results in this scenario may in fact be overly optimistic.

4. Our modeled scenarios demonstrate that energy efficiency is essential to mitigating leakage, and should be incentivized through allowance allocations

In contrast, Scenarios 1, 2, and 3 each showed more meaningful responses to their more robust output based allocation approaches, which directed far more allowances to output-based allocations and did not circumscribe participation to units above a certain capacity factor. Scenarios 1 and 2 directed 100 percent of the allowances to output-based allocations, while Option 3 directed one-third to one-half of allowances to output-based allocations. Therefore, we recommend that EPA refine their output-based allocation approach to include a much greater percentage of the allowances available under the cap.

Crucially, our results demonstrated that these scenarios still needed to be paired with further robust incentives for low and zero carbon resources (energy efficiency, in the case of our modeled scenarios) to achieve equivalent outcomes as compared to the BSER; we recommend additional output-based allocation to energy efficiency as one design option to achieve this end.

Our model results show that energy efficiency is an essential part of addressing leakage and ensuring that the program delivers emission performance levels consistent with the BSER. We find that if the leakage program does not adequately encourage additional efficiency investments (e.g., through output based allocations to energy efficiency projects), then the emissions benefits expected from the leakage measures we modeled (Scenarios 1, 2, and 3) could fall considerably in each case, eroding approximately one-half of the cumulative benefits provided by the leakage prevention program. For this reason, EPA should provide guidance for states ensuring that these projects receive an appropriate level of rigor in their EM&V (though we note that this may differ from the EM&V for efficiency projects in rate-based programs which are issued ERCs).

Given the tremendous opportunity for energy efficiency investments to reduce compliance costs and deliver bill savings for consumers, we expect that states and consumers will want to ensure that energy efficiency plays a role in compliance with the Clean Power Plan. Furthermore, energy efficiency projects provide the same value to the grid as incremental renewable energy, and thus should receive the same allocations in order to avoid an erosion of the incentives that would otherwise exist to pursue these projects as a result of carbon constraints on the electricity sector.

We therefore recommend that EPA's model rule and federal plan allocate allowances to verified energy efficiency projects on an output basis, placing energy efficiency on a level playing field with non-emitting generation for purposes of allocations. Any energy efficiency project that meets EPA's EM&V guidelines and that chooses to apply for an allocation would qualify for our proposed energy efficiency allocation.⁸⁶ In order to encourage and incentivize the full suite of energy efficiency investments that reduce leakage, this allocation could be made available both to individual energy-saving projects as well as state-driven comprehensive energy efficiency programs.

Lastly, we note that the value of allocating allowances to energy efficiency remains great even if EPA decides against allocating to all eligible generation on an output basis from a single pool of allowances in the model rule. If EPA instead implements a set-aside for renewables, we recommend that EPA include energy efficiency in the renewable set-aside, and greatly expand the size of that set-aside not just to provide adequate incentives but to also accommodate potential efficiency investments.

5. Key Conclusion: In an existing-only mass-based plan, sufficient allocation to carbon-free generation is essential to achieve emission performance levels consistent with the BSER

In the proposed Federal Plan Requirements, EPA provides for the allocation of allowances to renewable generation from a set-aside, noting that "this set-aside is expected to address concerns regarding leakage by lowering the marginal cost of production of the incented clean energy

⁸⁶ While this approach will entail some level of administrative effort to implement an energy efficiency EM&V program, we note in our comments that EPA would already be administering such a program as part of the CEIP and suggest various ways of minimizing burdens for EPA.

technologies within the state. This will make RE more competitive against new sources, reducing the potential for leakage to new sources” (p 65022). We strongly support the conclusion that providing incentives for zero-emitting generation is an important piece of minimizing leakage and assuring equivalence with the incentives and outcomes anticipated under the BSER. Accordingly, a robust allocation to carbon-free resources is a vital component of developing effective leakage-prevention provisions.

Our results from Scenarios 1, 2, and 3 demonstrate that the performance of output-based allocations can be substantially improved by allocating allowances to renewables at rates comparable to the ones we test for natural gas generation on an updating output basis. However, we note that analysis presented in NRDC’s comments on this proposed rule shows that increasing the allocation rate to new renewable generation can improve the performance of output-based allocations even further and help the program deliver emission performance levels that are more consistent with the BSER. Consistent with this finding, our analysis suggests that increasing incentives for zero-emitting generation may be particularly important if the program does not result in significant deployment of energy efficiency (e.g., by incentivizing it through output based allocations). In fact, it may be advantageous for EPA to explore providing multiple incentives as part of a leakage solution in order to maximize the likelihood that the program delivers emission performance levels consistent with the BSER.

While some have argued that the recent extension of federal tax credits for renewable generation can help provide these incentives (i.e., the PTC and ITC), we note that these extenders are temporary in nature, the market response to them remains uncertain, and they have a limited scope that does not extend to energy efficiency. Therefore, it is important that EPA include allocation to carbon-free generation in recognition of the vital, ongoing role it plays in a comprehensive leakage-prevention program.

Furthermore, if EPA decides to finalize a fixed set-aside for zero-emitting generation, it is important that EPA modify the design of that set aside to ensure clear incentives to mitigate leakage. In particular we note that EPA’s proposed renewable set-aside would allocate the entirety of the set-aside on a pro-rata basis to all eligible renewable generation built after 2012. This means that a number of state set-asides will be fully subscribed in 2022 even if no additional renewables are brought online. This could muddle the incentive to build new renewables, particularly in markets dominated by a few power companies. This is because further renewable development may not increase the number of allowances a power company receives, but instead may result in them receiving the same number of allowances for a greater number of renewable projects, thus diluting the market incentive created by the set-aside. We find that a better approach is one where zero-carbon projects are allocated allowances at a fixed emissions rate, as this would make it more likely that project developers will receive greater quantities of allowances as they bring more zero-carbon projects online. This allocation rate should be no less than the allocation rate provided to existing natural gas generation. In order to reduce the risk of over-subscription and preserve the incentive for non-emitting generation, EPA should have the set-aside roll over from year to year so that any unused allowances are kept in reserve for later years.

In addition, we note that providing output-based allocations to carbon-free generation also provides the co-benefit of making it easier for projects to continue delivering the same value proposition to consumers that they have before the Clean Power Plan. Specifically, output-based allocations can help ensure that the Clean Power Plan does not undermine the vibrant voluntary market for renewable generation that exists today, and which is driven in part by consumers' goal of reducing CO2 footprint through purchases of renewable electricity. If renewable generation is not allocated allowances directly, then providers of voluntary renewable energy would need to go into the market and purchase allowances to retire in order to continue claiming additional CO2 reductions from the renewable purchases. This would drive up their costs, and could impact future market development. This is notable as voluntary renewables are estimated to account for about one-quarter of all non-hydro renewable purchases,⁸⁷ and this number could grow substantially in the years ahead as distributed resources become ever more cost competitive.

EPA should ensure that if states pursue an alternative leakage demonstration other than those proscribed by EPA that those plans are backed by sufficiently rigorous analysis and guarantees to ensure that the state program achieves emission performance levels consistent with the BSER

EPA provided states with a third option for addressing leakage, which allows states to “provide a demonstration in the state plan, supported by analysis, that emission leakage is unlikely to occur due to unique state characteristics or state plan design elements that address and mitigate the potential for emission leakage.”

In its current form, we find that this option warrants greater clarity and certainty, and urge EPA to provide clear standards for the states to ensure that any leakage measures adopted under this option assure equivalence and the environmental integrity of the program. EPA's standards for evaluating alternative leakage demonstrations should be sufficiently detailed and robust to ensure that if this option is exercised, the state plan will still achieve emission performance levels consistent with the BSER, and thus obtain the desired levels of emissions reductions. Furthermore, it should include safeguards to ensure that emission reductions consistent with the BSER are still achieved even if the state-proposed measure fails to curb leakage.

Key elements of EPA's guidance on this option for addressing leakage should include:

- Clear direction with regards to what types of modeling would be needed to show how any proposed methods would address leakage – ideally, a requirement that a proposed leakage fix be supported by dispatch modeling comparable in structure and assumptions to the modeling EPA itself conducts in evaluating leakage;
- Reporting on the performance of the approved leakage fix at the conclusion of each compliance period, if not more frequently; and
- Backstop provisions that require states to revise their plan to abate and make up for any leakage that may materialize – comparable to requirements in the Clean Power Plan for “state measures” plans, which similarly provides a highly flexible alternative for states.

⁸⁷ National Renewable Energy Laboratory (NREL), STATUS AND TRENDS IN THE U.S. VOLUNTARY GREEN POWER MARKET (2014 DATA) (October 2015), <http://www.nrel.gov/docs/fy16osti/65252.pdf>.

Backstop provisions could consist of tighter mass-based emission limits for existing sources, or other enforceable measures.

EPA should further clarify that any state choosing to implement their own proposed leakage mitigation measures has opted out of the mass-based, existing only “streamlined plan pathway⁸⁸” and is subject to the requirements associated with plan submissions falling outside of these four clearly defined paths.

Given the challenges with regards to monitoring leakage in states that establish their own unique leakage programs, EPA should also consider whether interstate trading of compliance instruments should be appropriately limited for states that exercise this alternative option. As part of its evaluation of a proposed leakage fix, EPA should determine whether trading limits are necessary in order to appropriately monitor and avoid leakage, or whether adequate methods exist to ensure that leakage is properly identified and remediated in the presence of interstate trading.

When evaluating whether a proposed approach achieves emission performance levels consistent with the BSER, we encourage EPA to consider the full scope of change envisioned in the BSER. For example, if comparable levels of zero-carbon development do not take place, then the state will see considerable leakage as a result of new carbon emitting generation, and the state will not achieve emission performance levels consistent with the BSER. Therefore, we recommend that EPA take the simple, but effective approach that we utilized here, and compare the overall emissions performance of the state’s electric generation fleet against each state’s mass budget for existing plus new units and/or the levels of emissions reductions reported by EPA in the Clean Power Plan as finalized.

Lastly, the final rule should recognize that any state that elects to adopt a state measures approach must also assure that the design of its alternative compliance approach assures equivalence with the BSER and does not result in emissions leakage. Under the final Clean Power Plan, a state that elects a state measures approach must demonstrate that its plan achieves compliance with the relevant mass-based emissions goal. A state measures plan that is designed to meet the mass-based emission goal for affected EGUs only could, if improperly designed, feature the same undue incentives to shift generation to new EGUs that would exist under other types of mass-based plans. Accordingly, EPA should require that state measures plans satisfy the same leakage requirements that apply to other types of mass-based plans.

C. Complementary Leakage Monitoring, Compliance and Review Program

⁸⁸ Clean Power Plan, 80 Fed. Reg. at 64,832 (“The final emission guidelines provide four streamlined plan pathways. These streamlined plan pathways represent straightforward plan approaches for meeting the emission guidelines, and avoid the need to meet additional plan requirements and include additional elements in a plan submittal.”).

In addition to the measures recommended above to ensure the effectiveness of EPA’s approved options for addressing leakage in mass-based programs, we recommend that EPA consider taking additional, complementary steps to: assure compliance once the program is being implemented; review and revise the overall program to prevent leakage from eroding the required emissions reductions; and reflect the fast-paced developments in the power sector that are enabling deeper emissions reductions through cost-effective solutions. First, we address compliance with the current standards of performance through a complementary leakage emissions monitoring and compliance program. This program would have two basic elements:

- *Routine national emissions monitoring and reporting on leakage to provide transparency and accountability as an integral part of program compliance.* In the final Clean Power Plan, EPA appropriately committed to regularly evaluate the risk of leakage (particularly among states with different types of state plans).⁸⁹ Accordingly, we recommend that EPA effectuate that commitment in the final rule by adopting a fixed schedule and specific process for regular collection, disclosure, and analysis of emissions and other key considerations to assess whether there is a significant risk of leakage to new sources or across state boundaries. This process should include: a) at least annual disclosure of emissions data for affected and new EGUs, which EPA already collects under Part 75 of its Clean Air Act regulations (but does not readily disaggregate among existing and new EGUs); b) commissioning of rigorous, public analysis at least once shortly after every compliance period –in collaboration with the Department of Energy and Federal Energy Regulatory Commission, as appropriate — to determine whether there is a significant risk of leakage to new sources or across state boundaries, including analysis of emission and generation trends, relative costs of generating units, industry surveys, modeling forecasts, and other appropriate techniques; and c) opportunities for public input on both the leakage analysis and possible additional regulatory actions that should be taken to address leakage. All of these activities are authorized by section 103 of the Clean Air Act, which broadly authorizes EPA to undertake research activities related to the causes and extent of air pollution (and to collaborate with other Federal agencies as appropriate), as well as section 114 of the Clean Air Act (which authorizes EPA to request the collection of emissions-related information from any person who may possess such information).⁹⁰
- *Compliance.* Under the Prevention of Significant Deterioration program, a new major stationary source that is required to obtain a preconstruction permit must demonstrate that it “will not cause, or contribute to, air pollution in excess of . . . any other applicable emission standard or standard of performance under this chapter.”⁹¹ In taking final action on this proposal, we recommend EPA evaluate and address compliance with the restrictions on leakage in the context of this obligation – in particular whether the requirement that mass-based state plans for affected EGUs adequately address leakage should be considered an applicable “emission standard” for purposes of this provision.⁹²

⁸⁹ See Clean Power Plan, 80 Fed. Reg. at 64,890.

⁹⁰ See generally 42 U.S.C. § 7414; 42 U.S.C. § 7403(a)(1), (b)(1), (b)(2), (b)(4).

⁹¹ 42 U.S.C. § 7475(a)(3).

⁹² EPA has applied this approach to National Ambient Air Quality Standards (NAAQS) under the analogous provision at 42 U.S.C. § 7475(a)(3)(B), and accordingly requires compliance with any new

For example, compliance with the limitations on leakage could be addressed by showing that the emissions standards under the plan adequately address new source emissions associated with leakage or by otherwise mitigating the emissions associated with new source leakage. Separately, section 111 provides for periodic review and revision of the standards of performance. Compliance is a vitally important consideration in carrying out this review. EPA should clarify in the final action on this proposal that its periodic review will include an assessment whether programmatic compliance is being achieved and whether in turn revisions are warranted to ensure compliance in addition to assessing whether more stringent emission limitations and percent reductions beyond those required are warranted.

D. Default Allocation Mechanism in the Federal Plan and Model Rule

EPA should be clear in the **model rule** that, provided a state adopt the new source complement, a state has full control over their allocation methodology. EPA should consider declining to finalize a “default” allocation methodology in this circumstance.⁹³

EPA should be clear in the **federal plan** that any state substituting the federal plan allocation approach for leakage mitigation with an “abbreviated state plan” that adopts the new source complement and covers new units under their program will have full control over their allowance allocation. If a Federal Plan state is subject to EPA’s allocation approach for leakage mitigation, and if EPA has declined to use all the tools at their disposal to secure a rigorous approach to mitigating leakage by deploying the full complement of allowances in an updating, output based solution in the Federal Plan, then EPA should carefully consider a range of allocation approaches and choose an approach that best mirrors the incentives in the rate-based BSER for the remaining allowances.⁹⁴

E. EPA Should Offer Options that Encourage Coverage of New Units

NAAQS immediately upon its issuance. *See, e.g.*, National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292, 65,431, 65,440 (Oct. 26, 2015); *see also* Memorandum from Stephen D. Page, Director, Office of Air Quality Planning & Standards, “Applicability of the Federal Prevention of Significant Deterioration Permit Requirements to New and Revised National Ambient Air Quality Standards” 2 (Apr. 1, 2010); *Alabama v. EPA*, 557 F.2d 1101, 1110 (5th Cir. 1977) (permitting decisions of regulatory agencies must reflect law in effect at time of final determination on a pending application). Exceptions have been made where EPA has explicitly grandfathered certain permits that were already in progress, as was the case in the most recent Ozone NAAQS update. 80 Fed. Reg. at 65,431. EPA’s explicit grandfathering of sources in specified circumstances reinforces that the provision is otherwise self-executing.

⁹³ If EPA still decides to allocate some allowances on a historical basis after fully vetting other options, then when determining whether or not to terminate allocations some amount of time after a unit retires, EPA should consider whether or not so doing would have a measurable impact on operations at existing coal units that would otherwise retire for economic reasons.

⁹⁴ If EPA still decides to allocate some allowances on a historical basis after fully vetting other options, then when determining whether or not to terminate allocations some amount of time after a unit retires, EPA should consider whether or not so doing would have a measurable impact on operations at existing coal units that would otherwise retire for economic reasons.

The most straightforward strategy for EPA to assure the environmental integrity of a mass-based federal plan is to include new units under the mass-based cap. Because this approach is so effective, EPA need not prescribe specific allocation approaches to states that choose to pursue this option. Including new units in the mass-based program will ensure that: a) new sources in the state covered by the federal plan do not face unintended incentives to expand emissions relative to existing plants, and b) existing sources in the states achieve actual emission reductions commensurate with the state goals, instead of shifting their emissions to new power plants. Including new units in the same emissions trading program as existing power plants is a straightforward protective measure to ensure that existing power plants achieve reductions and generation incentives that are consistent with the state goal and the “best system of emission reduction” that EPA has established for those plants. Existing analyses have indicated that the program would produce more uniform market signals and more robust environmental and economic outcomes if new power plants were included in implementation policies under a mass-based program.⁹⁵

We urge EPA to encourage states to voluntarily include new units in a model federal plan’s implementation mechanisms. In particular, EPA should clarify in the final rule that states subject to a mass-based federal plan retain the option to establish an emission budget and trading program for new EGUs, just as states may opt to do when developing their own mass-based plans. Because such a program would presumptively satisfy the requirement that mass-based state plans address leakage, a state that limits emissions from new EGUs in this way would obtain the benefit of full discretion to allocate allowances for existing sources under the federal plan mass cap.⁹⁶ Under this approach, states would attain full authority to allocate allowances by submitting a partial state plan that includes a mass-based emission trading program for new sources with an associated emissions budget that is equivalent to the new source complement calculated by EPA for each state.

EDF also suggests that EPA reconsider whether it has authority to include new sources directly under a mass-based emissions trading program through its broad remedial authority to craft federal plans under section 111(d). As a leakage measure, the inclusion of new EGUs in the federal plan would be designed to ensure that existing EGUs in the state achieve actual emission reductions commensurate with the state goals, rather than shift their emissions to new power plants. Because including new EGUs in the federal plan would ensure that existing power plants

⁹⁵ See M.J. Bradley & Assocs., *EPA’s Clean Power Plan: Summary of IPM Modeling Results* 19 (Jan. 2016), <http://www.mjbradley.com/reports/modeling-analysis-epas-clean-power-plan>; Dallas Burtraw et al., Res. for the Future, *Approaches to Address Potential CO2 Emissions Leakage to New Sources under the Clean Power Plan* 9 (Jan. 2016), http://www.rff.org/files/RFF-CPP_Technical-Background.pdf; Jennifer Macedonia et al., Bipartisan Policy Ctr., *Insights from Modeling the Proposed Clean Power Plan* 29 (Apr. 2015), <http://bipartisanpolicy.org/wp-content/uploads/2015/04/BPC-Clean-Power-Plan-Slides.pdf> (noting that including new NGCC units can lower cost, reduce market distortions, and reduce impacts on existing generators); Evelyn Wright & Amit Kanudia, *Evaluating Emissions Variation and Leakage Potential Across Clean Power Plan Compliance Designs: A Scenario Analysis in FACETS* vii (May 2015), <http://www.facets-model.com/s/FACETS-Clean-Power-Plan-Analysis-jfwe.pdf> (describing modeling results indicating that excluding new gas from a mass-based compliance plan would lead to higher emissions).

⁹⁶ Proposed Federal Plan, 80 Fed. Reg. at 65,027 (requesting comment on EPA’s proposed approach for addressing leakage in a state allowance-distribution methodology “and on any other approaches for doing so”).

achieve emission reductions and face generation incentives that are consistent with the BSER that EPA has established for those plants, inclusion of new EGUs is properly a provision for “implementation and enforcement” of the standards for existing sources – and accordingly is a valid part of section 111(d) plans under the terms of the Act.⁹⁷

EPA’s authority to take such action is supported by case law finding that, in the context of federal plans to implement the National Ambient Air Quality Standards, EPA “stands in the shoes of the state” and, in general, may exercise the same authority as a state in regulating stationary sources under the federal plan.⁹⁸ The final CPP provides states with mass-based programs the option of including new sources in their emissions trading programs as part of a state plan, and set forth a state’s overall emission budget if it includes both new and existing sources.⁹⁹ Because the final CPP provides a pathway for states to design mass-based state plans that include new sources, this case law suggests that EPA may elect to make the same choice when exercising its remedial power to craft a federal plan “in the shoes of the state.”

EPA’s authority to address leakage to new sources by regulating them as part of an emissions trading program for existing EGUs is bolstered by its explicit authority to establish standards of performance for new EGUs under section 111(b). Because leakage – as defined by EPA – entails *both* excess emissions at new EGUs as well as insufficient emission reductions at existing EGUs, EPA could reasonably determine that the “best system of emission reduction” for new EGUs in a federal plan state includes an aggregate cap on carbon pollution that is equivalent to the new source complement. By coordinating its direct authority over new sources with its remedial authority under a section 111(d) federal plan, EPA could achieve the equivalent of an emissions trading program that includes new EGUs and fully addresses leakage.

F. EPA Should Make Clear that New Sources Will in the Future Be Subject to the Existing Source Mass-Based Cap.

As a further deterrent against leakage, we recommend that EPA make clear that the federal plan will be modified upon the next revision to the New Source Performance Standards (NSPS) to include all sources built prior to that time. In past rulemakings, EPA has provided that new sources are considered “existing” sources, and may be made subject to state and federal plans under section 111(d), once a NSPS that applies to those new sources is reviewed and revised.¹⁰⁰ That same approach should apply equally in the context of the Clean Power Plan, and

⁹⁷ 42 U.S.C. § 7411(d)(1)(B).

⁹⁸ See *Cent. Ariz. Water Conservation Dist. v. EPA*, 990 F.2d at 1541 (When promulgating a federal plan, EPA “stands in the shoes of the defaulting state, and all of the rights and duties that would otherwise fall to the State accrue instead to EPA.”) (quotation omitted); *S. Terminal Corp. v. EPA*, 504 F.2d 646, 668 (1st Cir. 1974) (“The statutory scheme would be unworkable were it read as giving to EPA, when promulgating an implementation plan for a state, less than those necessary measures allowed by Congress to a state to accomplish federal clean air goals. We do not adopt any such crippling interpretation.”); cf. *Okla. Dep’t of Env’tl. Quality v. EPA*, 740 F.3d 185, 193 (D.C. Cir. 2014) (“Because the EPA may administer a federal program only ‘in the shoes of a tribe or the shoes of [a] state,’ it can exercise no more jurisdiction than could the tribe or state whose shoes it fills.”) (citation omitted) (quoting *Michigan v. EPA*, 268 F.3d 1075, 1085 (D.C. Cir. 2001)).

⁹⁹ See Clean Power Plan, 80 Fed. Reg. at 64,888–89 tbl. 14.

¹⁰⁰ See Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Hospital/Medical/Infectious Waste Incinerators, 74 Fed. Reg. 51,368, 51,375 (Oct. 6, 2009) (providing that “[a]ll

would help further mitigate the incentives that might otherwise exist for power companies to build and operate new sources in order to avoid emission reduction requirements under section 111(d).

V. EPA Should Adopt an Approach to Regulating Modified and Reconstructed EGUs That Secures Required Reductions in Carbon Pollution

EDF is concerned that EPA’s proposed regulatory approach for modified and reconstructed EGUs does not ensure that these sources will be subject to standards that reflect the BSER, and could also create perverse incentives for certain existing EGUs to undertake modification or reconstruction with the goal of becoming subject to less stringent emission standards. It is critical that section 111 standards for new, modified, reconstructed, and existing sources work in a seamless fashion to ensure the achievement of emission reductions consistent with the BSER, and without encouraging leakage of emissions from one source type to another. Accordingly, we urge EPA to either: a) reinstate its prior proposed interpretation that sources that modify or reconstruct after becoming subject to a state or federal plan should continue complying with applicable standards under section 111(d); or b) take alternative actions, described below, that would help address concerns over the emissions implications of exempting modified and reconstructed sources from section 111(d).¹⁰¹

A. EPA’s Prior Proposed Interpretation

When EPA issued the proposed new source performance standards (NSPS) for modified and reconstructed sources in June 2014, it acknowledged the importance of ensuring that existing EGUs do not face perverse incentives to modify or reconstruct, as well as the potential for disruption of state plans were existing EGUs to become exempt from section 111(d) requirements upon undertaking a modification or reconstruction.¹⁰² Recognizing that the language of section 111(d) is ambiguous as to whether state plans remain applicable to sources that modify or reconstruct following the approval of a state plan, EPA proposed an interpretation of the statute that would require all currently-existing EGUs to continue complying with

HMIWI that complied with the NSPS as promulgated in 1997 are ‘existing’ sources” following the promulgation of amendments to the NSPS, and requiring those sources to comply with applicable emission guidelines to the extent they are more stringent than the NSPS); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units, 80 Fed. Reg. 3,018, 3,023 (Jan. 21, 2015) (clarifying that following February 2013 revisions to the NSPS, EPA intended to regulate sources covered by the prior 2000 NSPS as “existing” sources under the more stringent EG once these units were covered under an approved state plan or federal plan that implements the February 2013 CISWI final EG).

¹⁰¹ As we note elsewhere in our comments on the proposed mass-based federal plan and model trading rule, EDF also has concerns about EPA’s proposed disposition of allowances that are allocated to EGUs that modify or reconstruct after becoming subject to the mass-based program. EDF urges EPA to ensure that such allowances are retired and permanently withdrawn from circulation, rather than being redirected to the RE set-aside as EPA has proposed. This is essential to ensure that the existing EGUs that remain subject to the cap do not emit at levels higher than permitted under the BSER for those existing EGUs.

¹⁰² See Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34,830, 34,904 (June 18, 2014) [hereinafter Proposed CPP].

applicable requirements under section 111(d) even after completing a modification or reconstruction.¹⁰³

EDF strongly supported this interpretation, arguing in comments that it was both consistent with the statute and supported by compelling policy considerations. Among other points, we agreed with EPA’s proposed position that the operative language of section 111(d) is ambiguous as to whether standards “established” for an existing source under a state plan continue to apply to that source once it has become modified or reconstructed. We also observed that EPA’s position would ensure that modified and reconstructed sources continue to perform at levels consistent with the BSER for those sources – by requiring that modified and reconstructed sources continue to meet the performance levels that applied when those sources were “existing,” in addition to meeting technology-based standards provided in the NSPS.¹⁰⁴

EPA did not take a position on this important interpretive issue in the final Clean Power Plan, and has instead offered an alternative – and very different – interpretation of the statute in the current proposed rule.¹⁰⁵ Under this interpretation, existing EGUs would become exempt from the requirements of section 111(d) upon completing a modification or reconstruction. Such EGUs would, instead, become exclusively subject to the final NSPS for modified and reconstructed EGUs under section 111(b). As described below, we disagree with this interpretation and urge EPA to either reinstate its previous interpretation in the final rule or take steps to ensure that modified and reconstructed sources achieve the full degree of emission reduction consistent with the BSER.

B. Section 111(d) Can Be Reasonably Interpreted to Apply to Existing Sources that Modify or Reconstruct Subsequent to the Approval of a State Plan

As we noted in our comments on the proposed NSPS for modified and reconstructed sources, section 111(d) can be reasonably interpreted to apply to modified and reconstructed EGUs under the circumstances of the Clean Power Plan — and such an interpretation is supported by compelling policy considerations.

Section 111(d) is ambiguous as to whether state plan requirements must continue to apply to a source that modifies or reconstructs. In the preamble to the proposed Clean Power Plan, EPA explained that section 111 defines “new” and “existing” sources, and that section 111(d) clearly provides for the submission of state plans that “establish[]” standards of performance for existing sources. However, EPA correctly observed that the statute “does not say whether, once the EPA has approved a state plan that establishes a standard of performance for a given source, that standard is lifted if the source ceases to be an existing source.”¹⁰⁶ In particular, the plain language does not clearly state *when* a source is to be considered “existing” for purposes of defining the applicability of the state plan. The statute could be reasonably read to require that a state plan “establish[]” performance standards for any source that is “existing” *at the time emission guidelines are proposed or at the time of plan submittal*. Under this reading of the

¹⁰³ See *id.*

¹⁰⁴ See EDF, Comments on EPA’s Proposed Carbon Pollution Standards for Modified and Reconstructed Electric Utility Generating Units 2–8, Docket ID No. EPA-HQ-OAR-2013-0603-0232 (2014).

¹⁰⁵ See Proposed Federal Plan, 80 Fed. Reg. at 65,038–39.

¹⁰⁶ Proposed CPP, 79 Fed. Reg. at 34,904.

statute, the function of the section 111(d) reference to existing sources is to specify the group of existing sources that become subject to state plans pursuant to EPA emission guidelines, but is silent on whether the later triggering of a section 111(b) standard affects the on-going applicability of the 111(d) standards to which that source is subject under the state plan.

Prior section 111 rulemakings reinforce the reasonableness of this interpretation. On at least two occasions, EPA has addressed the applicability of section 111(d) plans to modified and reconstructed sources when it finalized revisions to NSPS and emission guidelines. In these rulemaking actions, EPA provided that new sources—including modified and reconstructed sources—are simultaneously subject to both state plans adopted under section 111(d) and EPA-issued performance standards under section 111(b).¹⁰⁷ In both of these rules, EPA promulgated a revised NSPS at the same time that it promulgated revised emission guidelines; although sources subject to the earlier NSPS were not “new” units for the purpose of the revised NSPS, the sources continued to be “new” for the purpose of the earlier NSPS, while simultaneously being “existing” sources with respect to the revised emission standards.¹⁰⁸ These examples both demonstrate that “new sources” can simultaneously be subject to section 111(b) performance standards and section 111(d) state plans, as well as EPA’s practice of requiring that sources comply with the more stringent of overlapping section 111(b) and 111(d) standards.

By contrast, EPA’s current proposed interpretation would allow EGUs to exempt themselves from section 111(d) by modifying or reconstructing – and would thereby fail to ensure that these units are subject to a “standard for emissions of air pollutants which reflects . . . the best system of emission reduction,” as required by sections 111(a) and (b) of the Clean Air

¹⁰⁷ See, e.g., Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Hospital/Medical/Infectious Waste Incinerators, 74 Fed. Reg. 51,368, 51,374 (Oct. 6, 2009) (hazardous, medical, and infectious waste incinerators subject to 1997 NSPS must continue to comply with 1997 NSPS requirements that are more stringent than 2009 emission guidelines for sources existing as of 2009); Standards of Performance for Municipal Waste Combustors, 60 Fed. Reg. 65,382, 65382 (Dec. 19, 1995) (municipal waste combustors remain subject to 1991 NSPS and must also comply with 1995 emission guidelines for units existing as of 1995). Although both of these examples are in the context of joint section 129/111 rulemaking, that context does not diminish their relevance to section 111 rulemakings. Under joint 129/111 standard-setting, the effect of the section 111(a) definitions on the applicability of NSPS to modified units is the same as for rulemakings under section 111. See *Davis Cty. Solid Waste Mgmt. v. EPA*, 108 F.3d 1454, 1458 n.6 (D.C. Cir. 1997) (“Although section 129 does not specifically state that the NSPS applies to modified units, it excludes modified units from the definition of existing units and provides that the NSPS shall be issued pursuant to 42 U.S.C. § 7411, which defines new sources as those sources modification or construction of which occurs after publication or proposal of regulations, whichever is earlier.”); 42 U.S.C. §§ 7429(a)(1), 7429(g)(3); see also 42 U.S.C. § 7411(a)(2).

¹⁰⁸ For example, in 2009, EPA issued a final rule amending the NSPS and emission guidelines for hazardous, medical, and infectious waste incinerators (HMIWI), which were both initially promulgated in 1997. In that rule, EPA noted that the 2009 revised emission guidelines were, for some pollutants, more stringent than the NSPS that applied to sources constructed or modified between 1997 and 2009. Accordingly, EPA amended the 1997 NSPS to require that those units comply with the more stringent of the pollutant specific limitations in either the emission guideline or the 1997 NSPS, thereby simultaneously subjecting some sources to both the revised emission guideline and the 1997 NSPS. See 74 Fed. Reg. at 51,374; see also Standards of Performance for Municipal Waste Combustors, 60 Fed. Reg. at 65,382 (“Subpart Ea is applicable to MWC units . . . for which construction, modification, or reconstruction was commenced after December 20, 1989 . . . It should be noted that plants that are subject to subpart Ea will also be subject to the emission guidelines contained in subpart Cb, which apply to plants constructed on or before September 20, 1994.”). The 1995 regulation provided that MWCs subject to the 1991 NSPS would also be subject to the new 1995 rules governing existing sources, which superseded the 1991 guidelines for existing sources. See 40 C.F.R. pt. 60, subparts Cb, Ea.

Act. Modified and reconstructed EGUs, by definition, are EGUs that were once existing sources. And as EPA determined in the final Clean Power Plan, the “best system of emission reduction” for existing EGUs encompasses the full suite of measures – including heat rate improvements, shifts in generation to existing NGCC units, and incremental renewable generation – that served as the basis for the national performance rates in the Clean Power Plan.

This determination remains no less true once an existing EGU undertakes a modification or reconstruction. Indeed, the modification or reconstruction of an existing fossil fuel-fired EGU does not alter the fact that the flexible, cost-effective system of emission reduction identified in the Clean Power Plan remains the best system for that plant, achieving the greatest emission reductions considering cost and the other statutory factors. In the particular context of the Clean Power Plan, the BSER for a modified or reconstructed EGU logically encompasses the BSER that applied when that source was existing — *together* with the additional technology-based BSER components that EPA has provided in the NSPS, consistent with the technology-forcing, emission-reducing role of section 111(b).¹⁰⁹

As EPA also recognized in the proposed Clean Power Plan,¹¹⁰ there are important policy concerns that support the interpretation we advance here. First, an approach under which modified or reconstructed EGUs are exempted from section 111(d) creates potential perverse economic incentives for units to undertake modifications with the objective of avoiding emission reductions that would be required under their state plans. Under the final Clean Power Plan, these economic incentives have a potential to persist unless EPA takes action to ensure that modified and reconstructed sources remain subject to the same standards of performance that applied when they were existing.¹¹¹

Second, interpreting section 111(d) so that it continues to apply to modified and reconstructed EGUs would minimize disruption of state plans. For example, as we note above, an existing EGU that undertakes a modification or reconstruction in a mass-based state would effectively “free up” allowances for the remaining existing EGUs in the state. The current proposal does not provide for an adjustment of the state-wide emission budget in such situations. Yet such an adjustment would be necessary in order to ensure that the remaining existing EGUs covered by the mass-based program do not increase their emissions in response to the departure of the modified or reconstructed EGU, and do not emit at levels that are higher than the equivalent national performance rates. This complication would be avoided if modified or

¹⁰⁹ See *Sierra Club v. Costle*, 657 F.2d 298, 325 (D.C. Cir. 1981) (“[Section 111(b)] standards must to the extent practical force the installation of all the control technology that will ever be necessary on new plants at the time of construction when it is cheaper to install, thereby minimizing the need for retrofit in the future when air quality standards begin to set limits to growth.”).

¹¹⁰ Proposed CPP, 79 Fed. Reg. at 34,904 (“The EPA is concerned that owners or operators or units might have incentives to modify purely because of potential discrepancies in the stringency of the two programs, which would undermine the emission reduction goals of CAA section 111(d).”).

¹¹¹ For example, an existing coal-fired steam EGU operating in a state that has adopted the rate-based model rule would be subject to an emission standard of 1,305 lb CO₂ / MWh in 2030. If such a plant were to undertake a modification at any point prior to 2030, it would instead be subject to a standard equivalent to its best historical annual emission rate since 2002 (with a “floor” of 1,800 or 2,000 lb CO₂/MWh). The interpretation EPA adopted in the proposed Clean Power Plan would avoid that result, ensuring that the existing facility continues to be subject to an emission standard that reflects the BSER for existing EGUs.

reconstructed units instead remained subject to the state plan, as EPA’s original interpretation in the proposed Clean Power Plan would have provided.

C. Alternative Approaches to Ensure Modified and Reconstructed EGUs Achieve Carbon Pollution Reductions Consistent With the BSER

If EPA decides to finalize its current proposed interpretation of section 111(b), we urge the Agency to consider taking two additional steps that could mitigate the policy concerns that we describe above and that were identified in the proposed Clean Power Plan.

1. Amend the NSPS for Modified and Reconstructed EGUs to Incorporate the BSER for Existing EGUs.

First, EPA could mitigate the incentive for existing EGUs to undertake modifications and reconstructions by amending the NSPS to provide that the BSER for modified and reconstructed sources consists of the technology-based BSER that is reflected in the current NSPS, *in conjunction with* the building block-based BSER that applies to existing EGUs under the Clean Power Plan. This combined BSER would be expressed in a two-part standard of performance, as follows:

- First, modified and reconstructed EGUs would continue to be subject to the technology-based standards of performance in the current NSPS. As provided in the current regulations, modified and reconstructed EGUs would be required to comply with those standards of performance without trading with other EGUs or adjusting emission rates through ERCs. This standard would ensure that modified and reconstructed EGUs achieve “at the stack” emission rates that are consistent with good operating practices and efficient generating technologies, as the technology-based BSER in the current NSPS provides.
- Second, modified and reconstructed EGUs would be subject to the national performance rates in the Clean Power Plan beginning in 2022, exactly as they would have been had they remained existing sources. The stringency of these rates, and the available means for compliance, would be the same as provided under EPA’s rate-based model rule. For example, modified and reconstructed EGUs could demonstrate compliance with these rates by acquiring ERCs that are qualified for use by existing EGUs in states with rate-based plans. This part of the amended NSPS would ensure that modified and reconstructed EGUs achieve emission reductions consistent with the BSER that applied when they were existing sources.

The amended NSPS described above would help mitigate the incentive for existing EGUs to modify or reconstruct, insofar as it ensures that such EGUs would continue to be subject to standards of performance that reflect the BSER for existing EGUs.¹¹²

¹¹² If a modified and reconstructed source were located in a mass-based state that has adopted the new source complement, EPA could consider waiving the requirement that the source comply with the national performance

This approach is also fully consistent with the statute, for the following reasons. First, there is no statutory prohibition under section 111(b) to adopting a BSER for modified and reconstructed sources that is similar to the BSER for existing EGUs. Indeed, this proposed amendment to the BSER adheres to the technology-forcing purpose of section 111(b), in that it would retain the current technology-based standard of performance that is based on efficient operation of the modified and reconstructed EGU. At the same time, the amended BSER would recognize that modified and reconstructed EGUs are in the unique position of being formerly existing sources that retain the ability to deploy the BSER that EPA has established for existing EGUs.¹¹³

There are also no significant practical obstacles to implementing the amended BSER for modified and reconstructed sources. Because modified and reconstructed sources are all sources that are currently “existing,” EPA’s BSER for existing sources – and the national performance rates that are based on that BSER – already contemplate the availability of “building block” measures for those sources. As a result, requiring modified and reconstructed sources to comply with the national performance rates in the Clean Power Plan would not impair or diminish the compliance options available to existing EGUs under section 111(d) (a key concern that EPA has raised in the case of newly constructed EGUs). Moreover, because our proposed amendment to the NSPS would not require that modified and reconstructed EGUs comply with the national performance rates until 2022, the NSPS would provide ample lead time for the development of a market for ERCs. Lastly, such a requirement would be fully compatible with the implementation of state or federal plans under section 111(d).¹¹⁴

2. Ensure That Modified and Reconstructed Sources Are Incorporated Into the Existing Source Program Through Frequent Revisions of the NSPS

Although section 111(b) of the Clean Air Act clearly requires that carbon pollution standards for new sources be reviewed at least once every eight years,¹¹⁵ EPA could establish a more frequent schedule for revision (such as once every five years) in recognition of the rapid evolution of methods to reduce carbon pollution from the power sector. A more frequent schedule for revision of the carbon pollution standards for new, modified, and reconstructed EGUs would ensure that sources that modify or reconstruct quickly are folded into regulation under section 111(d), consistent with EPA’s past practice of subjecting modified and

rates. This would be appropriate because the mass-based emission budget (with the new source complement) already reflects the degree of emission limitation achievable through application of the BSER for existing EGUs.

¹¹³ There is also no statutory prohibition to a “best system of emission reduction” that consists of multiple elements, or that changes over time. The BSER specified in the Clean Power Plan reflects both of these features. EPA has also issued other standards under section 111 that incorporate a BSER that changes or becomes more stringent over time. *Compare* Standards of Performance for New Stationary Sources: New Residential Wood Heaters, 53 Fed. Reg. 5,860 (Feb. 26, 1988), *with* Standards of Performance for New Residential Wood Heaters, 80 Fed. Reg. 13,672, 13,683 (Mar. 16, 2015).

¹¹⁴ The amended BSER we describe in these comments contemplates that modified and reconstructed sources would be subject to the national performance rates and would comply with those rates using ERCs. If necessary, however, EPA could develop a mass-based standard for modified and reconstructed sources that is based on the national performance rates. A mass-based standard could be preferable for modified and reconstructed sources located in states with mass-based programs, because it would potentially allow modified sources to obtain compliance instruments from other EGUs in the states where they are located.

¹¹⁵ 42 U.S.C. § 7411(b)(1)(B).

reconstructed sources to state plans upon revision of an applicable NSPS.¹¹⁶ In so doing, EPA would also reduce potential incentives for EGUs to modify or reconstruct for the purpose of avoiding state plan requirements under section 111(d).

D. EPA Should Assure that Treatment of Modified and Reconstructed EGUs in Mass-Based Programs Maintains Environmental Integrity.

EDF is concerned about EPA's proposed disposition of allowances that are allocated to existing EGUs that later undertake modifications or reconstructions, and believes it will allow for excess emissions from existing EGUs that remain subject to mass-based programs. EDF urges EPA to provide in the final rule that the portion of the emissions budget that is attributable to modified and reconstructed EGUs instead be retired.

Under EPA's proposed interpretation of section 111(d), existing EGUs that are modified or reconstructed would be exclusively subject to the NSPS, and would no longer be required to comply with state or federal plan requirements under section 111(d).¹¹⁷ For mass-based states, EPA also proposes that allowances that would have been allocated to those modified and reconstructed EGUs be re-directed to the renewable set-aside.¹¹⁸ The effect of this disposition would be to keep the total stock of allowances in mass-based states constant, even if modifications and reconstructions cause the number of existing EGUs subject to those programs to decline.

As a result, the existing EGUs that remain subject to the mass-based program following the departure of a modified or reconstructed EGU could well increase their emissions in response to the "freed up" allowances. Alternatively, the recipients of the re-directed allowances could sell those allowances to existing EGUs in other mass-based states – which would also ultimately have the effect of allowing those existing EGUs to increase their emissions. At the same time, EGUs that are modified and reconstructed would continue to emit at the levels permitted by the NSPS. The result would be a *net* increase in emissions resulting from the modification or reconstruction of an EGU.

This outcome is inconsistent with the requirements of section 111, which provides that "standards of performance" for new and existing sources alike must reflect the "best system of emission reduction" for those sources – regardless of whether those standards of performance are expressed as rate-based or mass-based requirements. Under the Clean Power Plan, EPA established national performance rates for existing EGUs that reflect the BSER for those sources, and then translated those performance rates into mass-based emission budgets that were determined by EPA to be equivalent to the level of reductions achievable through the BSER. EPA's methodology for establishing these emission budgets relied, in turn, on assumptions about

¹¹⁶ As described in section IV.E of our comments, *supra*, this practice was reflected in the 1995 revision of the NSPS for both municipal waste combustors and the 2009 revision of the NSPS for HMIWI.

¹¹⁷ EDF disagrees with this interpretation and believes it creates the potential for harmful increases in emissions from modified and reconstructed EGUs. We advocate for an interpretation of the statute that would avoid such effects, and also propose alternative actions that EPA could take to mitigate emissions increases from modified and reconstructed EGUs in the event EPA finalizes the proposed interpretation of section 111(d).

¹¹⁸ See Proposed Federal Plan, 80 Fed. Reg. at 65,027.

future generation levels from existing EGUs. These projected generation levels assumed that no existing EGUs exit the program as a result of modifications or reconstructions.

Were EPA able to anticipate that certain EGUs would exit the Clean Power Plan through modifications and reconstructions, it would have calculated lower future generation levels and – accordingly – determined that a lower level of emissions is equivalent to the BSER. Put simply, the approach proposed in the federal plan allows existing EGUs that remain in a mass-based plan to increase their emissions to levels that no longer reflect the BSER. Accordingly, EPA must ensure in the final rule that emission budgets are adjusted appropriately following the departure of a modified or reconstructed EGU from a mass-based program.

Method for accounting for the departure of the modified EGU. The most rigorous way to adjust the budget is to retire, prospectively, the amount of the state’s emissions budget that is attributable to the modified EGU – taking into account both the way in which that unit’s emissions were adjusted through the application of the BSER, and the formula that EPA used to translate the subcategory-specific performance rates into mass-based emission budgets. The precise way in which this would be done would vary slightly, depending on whether the modified EGU is a steam EGU or a NGCC unit.

If a steam EGU becomes a modified or reconstructed unit, EPA should determine that unit’s contribution to the state budget by:

1. Determining the unit’s “adjusted” 2012 emissions as used in calculating the subcategory-specific performance rates;
2. Discounting those emissions to account for the heat rate improvements assumed under building block 1, as provided in the BSER formula;
3. Further discounting those emissions in a manner proportional to the total assumed reduction in steam EGU generation due to application of building blocks 2 and 3; and
4. Lastly, estimating the proportional increase in the state’s emissions that were assumed to result from increased fossil generation enabled by deployment of additional economic renewable generation above and beyond that included in the BSER (EPA’s theory being that increased renewable generation would create additional ERCs, which would enable greater emissions from fossil generation). These emissions would then be added to those estimated through steps 1 through 3.

The end result of these calculations would be a specific amount of future CO₂ emissions that is attributable to the modified or reconstructed EGU after application of the BSER and the rate-to-mass translation, and that should be removed going forward from the state’s emissions budget in order to ensure that the remaining affected EGUs emit at levels that reflect the application of the BSER.

The procedure for reconstructed NGCC units would be virtually identical to the process outlined above, except that the effect of taking into account building block 2 would most likely be to *increase* the assumed contribution of the reconstructed NGCC unit to the state’s emission budget.

We assume that no adjustment to the emissions budget would be necessary for a modified NGCC unit, because such units would not be treated as “new sources” under the Clean Power plan. Section 111(a) defines a “new source” to mean a source that commences construction or modification after the publication of a proposed standard of performance “applicable to such source.”¹¹⁹ Because EPA has not finalized a NSPS for carbon pollution from modified NGCC units, such units would not be considered “new sources” under section 111(a). As a result, modified NGCC units would instead be regarded as “existing sources” for purposes of the Clean Power Plan and remain subject to section 111(d).

VI. Rate-Based Federal Plan and Model Rule

A. Ensuring the Transparency and Accountability of ERCs

In a rate-based plan, assuring the environmental integrity of ERCs is indispensable to ensuring that the standards of performance achieve the emission reductions ultimately required by the Clean Power Plan.¹²⁰ EDF strongly supports the protections that EPA has included in the final Clean Power Plan and the proposed rule to reinforce the environmental integrity of ERCs, including a basic expectation that all ERCs must undergo appropriate independent verification and evaluation, a two-step measurement and verification (EM&V) process, and that all ERCs must represent *ex post* determinations of generation or energy savings that reduce emissions from affected EGUs. In this section, we recommend cross-cutting measures to ensure that all ERCs — regardless of what resources they represent — are appropriately issued. (Later in this section, our comments provide specific recommendations on how these requirements can be most effectively applied in the context of demand-side energy efficiency.)

Transparency of ERC Documentation and Issuance. Transparency of all steps related to the issuance of an ERC is one of the best ways for regulators, owners of affected EGUs, and the public to ensure that ERCs represent concrete, eligible resources that have followed all appropriate EM&V requirements. Making the issuance of ERCs as transparent as possible will also enable citizens and regulators to identify situations that may require oversight or enforcement. Consistent with the preamble of the final CPP,¹²¹ we urge EPA to move forward with a requirement that all material ERC documentation — including applications for ERC issuance, identities of independent verifiers, and verification reports — be publicly disclosed in an electronic, online format. To make that information easy to access, EPA should create a

¹¹⁹ 42 U.S.C. § 7411(a)(2) (providing that a “new source” refers only to sources for which “construction or modification” commences after the publication of “a standard of performance under this section which will be *applicable to such source.*”) (emphasis added).

¹²⁰ See Clean Power Plan, 80 Fed. Reg. at 64,907.

¹²¹ See *id.* at 64,906–907 (“The tracking system used to administer a state’s rate-based emission trading system must provide transparent, electronic, public access to information about program and project eligibility applications, including EM&V plans, and regulatory approval status. . . . The tracking system must provide transparent electronic public access to submitted M&V reports and regulatory approvals related to such reports.”).

single, national online database that any member of the public can access and that contains all of the foregoing information for every registered ERC-generating project.¹²²

Opportunity for Public Input on ERC Issuance. EPA should also consider requiring that the public have a reasonable time to review ERC documentation and provide public input prior to the issuance of ERCs for a particular project, especially major ERC-generating resources such as a large-scale energy efficiency program. This period of public review and comment would be consistent with the process that exists for New Source Review permits and Title V permits,¹²³ and would help ensure that ERC issuances are based on informed and well-reasoned project-specific application of the ERC requirements. EPA should further consider whether this element would be appropriate to apply to targeted categories of ERCs where additional transparency may be beneficial – e.g. ERCs from new pathways, or energy efficiency ERCs based on new project types.

Rigorous and Transparent Process for Establishing New ERC Pathways. We also urge EPA to establish a rigorous and transparent process for determining whether additional types of “ERC pathways” for new technologies and resources should be established in the future.¹²⁴ It is important that such a process encourage the development and recognition of new, innovative, and more cost-effective ways of reducing emissions from affected EGUs. However, it is also important that this process protect the environmental integrity of the Clean Power Plan and maintain high standards for the quality of projects that receive ERCs.

In designing such a process, one possible point of reference is the procedure that the California Air Resources Board has established for recognizing new offset protocols under the A.B.32 emissions trading system. Key safeguards that are reflected in that process include:

- The opportunity for robust public participation in the development of new offset protocols. In particular, new offset protocols are all established using basic administrative rulemaking procedures,¹²⁵ including the public issuance of a proposed protocol, opportunities for public input and comment, and judicial review of final decisions on protocols.
- Basic criteria that new protocols are expected to meet,¹²⁶ including conservative estimates of benefits (which in the case of ERCs, would constitute MWh of clean generation or energy savings); appropriate accounting for external effects (such as market shifts) that could impact benefits; mechanisms to ensure that benefits for which credits are issued are

¹²² Similar levels of transparency are required under the California Air Resource Board framework for issuing offset credits, which requires prompt disclosure of identifying information and offset project characteristics; applicable protocols for M&V; verified information on baseline emissions, credited greenhouse gas reductions, and serial numbers of offset credits issued; and verification statements and attestations prepared by offset verifiers. See CARB, *Cap-and-Trade Regulation Instructional Guidance*, ch. 6, at 75 (Dec. 19, 2012).

¹²³ See 42 U.S.C. § 7475(a)(2) (providing for public hearings on all proposed Prevention of Significant Deterioration permits); 42 U.S.C. § 7661a(b)(6) (providing for public comment and hearings on Title V permits).

¹²⁴ EPA calls for comment on this issue in the proposed rule. See 80 Fed. Reg. at 64,995.

¹²⁵ See CARB, *Process for the Review and Approval of Compliance Offset Protocols in Support of the Cap-and-Trade Regulation* § 3.1 (May 2013); Cal. Code Regs. tit. 17, § 95971.

¹²⁶ See Cal. Code Regs. tit. 17, § 95972.

permanent, and not reversed or eroded over time; and appropriate limitations on crediting periods.

Jurisdictional Considerations. As EPA appropriately notes in the preamble to the final CPP, a transparent and well-maintained tracking system for ERCs is indispensable for ensuring that each ERC-eligible resource submits documentation to only one state program.¹²⁷ A related consideration is that of discouraging inappropriate “forum-shopping,” in which sponsors of eligible resources seek to take advantage of differences in EM&V requirements across states or even attempt to receive ERCs for the same project in more than one state. EPA should consider including in the model rule certain provisions, supplemental to the tracking system, that would protect against such activity. In developing these provisions, we would encourage EPA to consider the following principles:

1. Providing more ERCs to energy efficiency projects than is justified by their achieved emission reductions would compromise the emissions reductions anticipated under the Clean Power Plan.
2. Energy efficiency plays an important role in mitigating leakage in states that adopt a mass-based program for existing units only. Therefore, it is important to ensure that high-quality efficiency projects have a way to gain recognition through output based allocation in states where it is applied. In theory, this review could parallel or even leverage ERC review processes.
3. For the above reasons, EPA should apply an appropriate level of rigor to the EM&V of efficiency projects that receive allowances or ERCs.
4. Whatever program EPA designs should support the delivery of consistently rigorous and streamlined programs across the states and avoid forum-shopping.

If, after considering these factors, EPA decides to allow projects to apply for review outside of the jurisdiction in which they are located, then it may wish to adopt various limiting and protective measures, such as:

- A requirement that applications from out-of-state resources include a certification that the state where the resource is located does not have protocols that would allow it to evaluate the project (and in the case of ERCs, that the geographic constraints on ERC eligibility in the final Clean Power Plan do not apply¹²⁸);
- A requirement that applications include a certification that the applicant has not applied for approval and been denied in any other state for reasons other than lack of jurisdiction or absence of an applicable protocol;

¹²⁷ See Clean Power Plan, 80 Fed. Reg. at 64,906.

¹²⁸ See *id.* at 64,897–98 (describing limitations on ERC issuance to resources located in mass-based states, Indian country, and areas outside the U.S.).

- Provisions prohibiting affected EGUs within the state from using ERCs that were issued by one state after having previously been denied issuance in another state;
- As these comments recommend elsewhere, EPA should also ensure transparency of project review and approval through online project tracking that is publically accessible. EPA should further provide for regular performance reviews of the entire system. In the event that the review finds deficiencies in a state's program, EPA should consider whether application of its authorities to implement corrective measures to preserve the integrity of a state program would be appropriate, including its authorities to apply a federal plan or to enforce a state plan.

In addition, the following requirements should be applied when evaluating applications for ERCs for projects in mass-based states:

- EPA should finalize the provisions in the proposal that prohibit a renewable project that is allocated allowances in a mass-based plan (set-aside or other) from also receiving ERCs. EPA should expand this prohibition to include energy efficiency projects as well.
- EPA should finalize the provisions in the proposal that limit ERC eligibility for renewable projects in mass-based state to those projects that can demonstrate that the electricity generated is delivered with the intention to meet load in the rate-based state. To prove this, the RE provider needs to demonstrate MWhs generated are meeting load in rate-based state through a power delivery contract, PPA. The renewable generator would need to demonstrate this in the M&V reports submitted for issuance of ERCs.

B. Energy Efficiency as an Eligible Compliance Mechanism in the Rate-Based Federal Plan

In the event EPA finalizes a rate-based federal plan for one or more states, EDF urges EPA to reconsider its proposed determination that demand-side energy efficiency resources should not be eligible to generate ERCs in those states.¹²⁹ As EPA recognizes in the final Clean Power Plan, demand-side energy efficiency represents an abundant and low-cost opportunity to reduce emissions.¹³⁰ EPA's projections of the overall cost and emissions impacts of the Clean Power Plan are based in part on the eminently reasonable expectation that demand-side energy efficiency will be an attractive compliance option for states and power companies across the

¹²⁹ See 80 Fed. Reg. at 60,591, proposed 40 C.F.R. § 62.16420(c)(2) (specifying that an ERC must meet the eligibility requirements of § 62.16435); 80 Fed. Reg. at 60,593, proposed 40 C.F.R. § 62.16435 (omitting demand-side energy efficiency from the list of resources available for ERC issuance in states subject to a federal plan).

¹³⁰ 80 Fed. Reg. at 64,756-57 (“One of the major approaches available for achieving CO2 emission reductions from the utility power sector is demand side EE....We continue to believe that significant emission reductions can be achieved by the source category through use of such measures at reasonable costs. In fact, we believe that the potential emission reductions from demand-side EE rival those from building blocks 2 and 3 in magnitude, and that demand-side EE is likely to represent an important component of some state plans....We also expect that many sources would be interested in including demand-side EE in their compliance strategies to the extent permitted, and we received comment that it should be permitted.”)

country. Indeed, the anticipated deployment of energy efficiency in response to the Clean Power Plan is one reason why average energy bills are expected to *decrease* by approximately 7% as a result of the program.¹³¹ These projections are firmly based in the real-world experience of states and power companies, which have consistently found that energy efficiency yields significant savings for ratepayers while reducing emissions, enhancing grid reliability, and reducing the total costs of generating and delivering power.

EDF believes it is important that communities and ratepayers in states subject to the federal plan have the opportunity to share in the immense potential benefits of demand-side energy efficiency. Allowing demand-side energy efficiency in federal plan states to qualify for ERCs will incentivize much-needed investment in energy-saving projects and programs. These investments will generate real bill reductions for households and businesses who undertake energy efficiency projects, while reducing the overall costs of compliance for affected EGUs and the ultimate impacts of the Clean Power Plan for all ratepayers in federal plan states.

It is feasible for EPA to issue ERCs for demand-side energy efficiency in states subject to a federal plan. As EPA appropriately recognizes in the proposed rate-based model rule, ERCs for demand-side energy efficiency must be backed by a rigorous system of evaluation, measurement, and verification (EM&V) undertaken by independent third-party verifiers. (We provide comments on EPA's proposed approach later in this section.)

In order to issue ERCs for demand-side energy efficiency, a system would have to be created for the accreditation of verifiers, receipt and review of EM&V plans and verification reports, and oversight of verification activities. There are several reasons to believe such systems could be established in states where EPA is administering a federal plan:

- First, EPA has already proposed to implement the CEIP in states that are subject to federal plans. Under either a mass-based or rate-based plan, implementation of the CEIP would require EPA to oversee a system of independent verification and EM&V for low-income energy efficiency projects that qualify for CEIP credit. EPA's mechanisms for administering this program should be transferable to ERC issuance in states with a rate-based federal plan.
- Second, EPA will already have to accredit independent verifiers to conduct EM&V for the other forms of ERCs that the Agency has proposed to recognize under the federal plan – including various forms of eligible renewable energy, combined heat and power, and waste heat and power.¹³² The standards and procedures EPA uses to accredit independent verifiers for these other types of ERCs, and oversee the activities of those verifiers, should provide a foundation for independent verification of energy efficiency ERCs.

¹³¹ EPA, Regulatory Impact Analysis for the Clean Power Plan Final Rule 3-40 (Aug. 3, 2015) (“Under the illustrative rate-based plan scenario, EPA estimates an average monthly bill increase of 2.7 percent in 2020 and *an average bill decrease of 3.8 percent in 2025 and 7 percent in 2030*...These reduced electricity bills reflect the combined effects of changes in both average retail rates (driven by compliance approaches taken to achieve the state goals) and lower electricity demand (*driven by demand-side energy efficiency*).”) (emphasis added).

¹³² Proposed Federal Plan, 80 Fed. Reg. at 65,001.

- Third, EPA has already developed significant draft guidance on the content of EM&V plans, and is taking comment on those EM&V requirements in a parallel docket. Many stakeholders, including EDF in these comments, have requested that EPA provide sample EM&V plans and reporting templates that would be presumptively approvable as part of a state plan.¹³³ Further, applicants for ERCs in states with EPA-approved rate-based plans will also be developing EM&V plans, verification reports, and other documentation. Independent verifiers and energy efficiency providers in federal plan states will be able to draw from these templates and other resources in developing acceptable EM&V plans and verification reports for EPA-issued ERCs.

If EPA determines not to directly administer EM&V requirements for demand-side energy efficiency in a state with a rate-based federal plan, EPA should consider other options for reducing the administrative burden associated with issuing ERCs for demand-side energy efficiency. We suggest two possible options:

- *Cooperative partnership with the state subject to the federal plan.* EPA could allow a state that is subject to a federal plan to voluntarily assume responsibility for administering the EM&V requirements for demand-side energy efficiency ERCs, including accreditation of verifiers, receipt and review of verification reports, and oversight and enforcement of verification activities. A state that agrees to assume these tasks would submit a partial state plan to EPA covering the EM&V-related aspects of Clean Power Plan implementation, thereby providing for federal enforceability of the EM&V requirements that underpin the ERCs. Were a state to improperly implement the EM&V requirements, EPA could call for a state plan revision as it has proposed to do in other situations where states fail to implement approved plans.¹³⁴ If the state fails to rectify the implementation issues by the date established in the call for revision, EPA would either cease issuing energy efficiency ERCs or assume for itself the responsibilities of administering the EM&V requirements.
- *Allow demand-side energy efficiency projects in the state to apply for ERCs in other jurisdictions.* EPA could also clarify that demand-side energy efficiency projects in states subject to a rate-based federal plan can apply for ERCs in other jurisdictions with approved state plans (provided that those jurisdictions allow for crediting of out-of-state energy efficiency projects). Under this option, demand-side energy efficiency projects and programs in the federal plan state would be required to use independent verifiers accredited by the state(s) where they are applying for ERCs, and comply with all applicable EM&V requirements in the state(s) issuing the ERCs. These requirements would be federally enforceable against demand-side energy efficiency projects originating in the federal plan state.

C. Comments on EM&V Requirements for Demand-Side Energy Efficiency

EDF strongly supports the establishment of a rigorous – yet streamlined and cost-effective – framework for evaluation, measurement and verification (EM&V) of ERCs,

¹³³ See Comments of Joint EE Stakeholders.

¹³⁴ 80 Fed. Reg. at 65,035.

especially those attributable to demand-side energy efficiency savings. Striking an appropriate balance between environmental integrity, cost, and administrative burden is essential to ensure that affected EGUs are achieving real reductions in emissions; to provide affected EGUs, energy efficiency providers, and other stakeholders with sufficient certainty to establish a robust market for energy efficiency ERCs; and ultimately, to encourage significant mobilization of investment in energy-efficiency projects that benefit families and ratepayers.

Electricity saved by energy efficiency efforts cannot be directly measured, but instead must be estimated based on a comparison to an assumed counterfactual outcome. Accordingly, we strongly support EPA's efforts to articulate rigorous and stream-lined EM&V measures that will ensure that energy efficiency ERCs match equivalent, realized reductions in emissions. In order to assure the environmental integrity of a rate-based program, these standards must mitigate risks to the environmental integrity of energy efficiency ERCs that can occur from overly optimistic or even fraudulent assessments of energy efficiency savings; competition to lower quantification standards; and inadequate review and oversight.

At the same time, EM&V efforts must not unduly inhibit use of energy efficiency programs to reduce emissions. As EPA recognizes in the draft EM&V guidance,¹³⁵ EM&V approaches for different types of energy efficiency projects have been demonstrated for several decades, have grown increasingly rigorous and systematized, and encompass an expanding range of project types. Over the last two decades, at least fourteen states and several regional transmission organizations (RTOs) and regional partnerships have developed EM&V protocols for quantifying energy savings.¹³⁶ Verified energy savings are now widely used as the basis for critical regulatory proceedings and market functions, including utility ratemaking¹³⁷ and regional forward capacity markets.¹³⁸ And although M&V practices continue to vary widely,¹³⁹ important efforts have been undertaken and are on-going to develop consensus as to best practices and standardized protocols. These initiatives include the Department of Energy's Uniform Methods Project; the International Performance Measurement and Verification Protocol and associated professional certification program; regional technical initiatives such as the Northeast Energy Efficiency Partnership and Pacific Northwest Regional Technical Forum; and the evaluation guides and studies produced by the State and Local Energy Efficiency Action Network (SEE Action). EDF appreciates EPA's recognition of these recognized standards and best practices in

¹³⁵ EPA, Draft EM&V Guidance 1-2.

¹³⁶ See Steven Schiller et al., State & Local Energy Efficiency Action Network, *National Energy Efficiency Evaluation, Measurement and Verification (EM&V) Standard: Scoping Study of Issues and Implementation Requirements* 65 (Apr. 2011).

¹³⁷ Thirty states currently have or are implementing a performance incentive rewarding utilities for EE investments. ACEEE, *2013 State Energy Efficiency Scorecard* 37.

¹³⁸ Two major federally-regulated regional transmission organizations (RTOs), PJM Interconnection and the New England Independent System Operator (ISO-NE), allow EE resources to bid on a level playing field with traditional generating resources in specialized markets that ensure the long-term ability of the power grid to meet demand. Moreover, both organizations have adopted manuals for measuring and verifying EE resources with sufficient reliability to be counted as a capacity resource. See State & Local Energy Efficiency Action Network, *Energy Efficiency Program Impact Evaluation Guide* 7-5 (Dec. 2012).

¹³⁹ See generally Mike Messenger et al., Lawrence Berkeley Nat'l Lab., *Review of Evaluation, Measurement and Verification Approaches Used to Estimate the Load Impacts and Effectiveness of Energy Efficiency Programs* (Apr. 2010); Martin Kushler et al., ACEEE, *A National Survey of State Policies and Practices for the Evaluation of Ratepayer-Funded Energy Efficiency Programs* (Feb. 2012).

the proposed rule and accompanying draft guidance,¹⁴⁰ and believe that they can help inform a rigorous and workable EM&V framework for the Clean Power Plan.

EDF believes that the following fundamental elements of the framework are most critical to ensuring the integrity of the program over time.¹⁴¹

Consistent Application of Certain Model Rule Requirements. Given the diversity of energy efficiency projects and programs, and the range of methodologies that are used by EM&V practitioners to quantify savings, some degree of variation in the application of EM&V across projects and programs is difficult to avoid. Nevertheless, there are certain core elements of EPA’s EM&V framework that are essential to program integrity and that should be reflected in the final model rule as uniform requirements for states with rate-based plans. Consistency in these basic requirements is important to ensure that ERCs can be relied upon to represent real energy savings regardless of where they are generate. These basic elements are appropriately reflected in the proposed rule, and include:

- Common Practice Baselines. Because savings from energy efficiency are always measured relative to a counterfactual baseline, it is essential that EPA specify a consistent way of determining these baselines. EPA’s definition of a “common practice baseline” is clearly preferable versus comparison to historic baselines, an approach that is more likely to overestimate savings. The common practice baselines approach should be reflected in the final rule, with additional guidance to states and practitioners on how to define the baseline for common types of projects and programs and ensure updating over time, as recommended below.
- Best-Practice Protocols for Quantifying Savings. It is important that the model rule clearly define the types of protocols or methodologies that may be used to quantify savings, and ensure that these methodologies are consistent with best practice protocols that are transparent, in widespread use by expert EM&V practitioners, and based on direct measurement or (in the case of deemed savings) empirical data. If deemed savings are included as an acceptable protocol for any project types in the final model rule, EPA should require that deemed savings be calculated using publicly available Technical Reference Manuals that are regularly updated to incorporate public input and the most recent technical literature.
- Sampling Precision. Statistical sampling is a useful and cost-effective technique for determining energy savings (or key parameters related to savings) in large-scale energy efficiency programs. EDF agrees with EPA’s proposal to establish basic precision requirements to ensure that sampling yields reasonably reliable results. EPA’s

¹⁴⁰ Proposed Federal Plan, 80 Fed. Reg. at 65,006; EPA, Draft EM&V Guidance 26–29 (“2.12 Use of EE EM&V Protocols and Guidelines”).

¹⁴¹ In the separate docket for EPA’s draft EM&V guidance, EDF is also submitting information on the Investor Confidence Project (ICP) – a unique EDF initiative to establish rigorous, project-based EM&V protocols for energy efficiency investments in large commercial and multifamily buildings, as well as a transparent and reliable system for certifying energy savings from such projects. ICP has recently been designated for pilot testing by the State of New Jersey, and several other jurisdictions are considering its use for quantifying energy savings in an accurate, consistent, and transparent way. We suggest that EPA consider ICP for use as a basis for EM&V plans.

proposed requirement that confidence intervals remain within $\pm 10\%$ of the central estimate at a 90% level of confidence is comparable to requirements for energy efficiency resources bidding into the PJM capacity market, and reflects a reasonable and achievable level of precision.¹⁴²

- Adjustments to Account for Common Sources of Uncertainty. EDF also agrees with EPA's proposed requirements that EM&V plans incorporate measures to account for common sources of uncertainty in energy savings estimates, such as the influence of weather and other independent factors; "double counting" of savings; and persistence of energy efficiency measures over time. EDF encourages EPA to continue to provide additional guidance to stakeholders on accounting for these types of key uncertainties.

Importance of Rigorous Independent Verification. EDF strongly supports EPA's determination in the final Clean Power Plan that independent third-party verification should be required for energy efficiency savings. Given the large number of projects and programs that are likely to be evaluated under the proposed EM&V framework, a thoughtfully-designed independent verification system is likely to be the most cost-effective and credible way to ensure that ERCs accurately and consistently represent energy savings. Independent verification is also considered a best practice for EM&V, and is routinely deployed by providers of energy efficiency services and program administrators.¹⁴³

The proposed rule identifies appropriate elements of an independent verification system, including requirements that verifiers be accredited by EPA; screen clients for conflicts of interest; possess appropriate technical qualifications; and demonstrate adequate knowledge of the Clean Power Plan and its compliance requirements. The specific conflict of interest criteria that are set forth in the proposed rule – including restrictions that prevent verifiers from having a financial interest in an ERC provider or an ERC transaction, involvement in programs that seek issuances of ERCs, or a financial stake in the outcome of a verification report – are also sensible and appropriate.

We recommend that EPA consider additional requirements to assure the independence of verifiers, and note that comprehensive descriptions of potentially useful requirements can be found in EPA's August 2015 proposed rule amending the emission guidelines for municipal solid waste (MSW) landfills¹⁴⁴ as well as the California Air Resources Board (CARB)

¹⁴² SEE Action Network, Energy Efficiency Program Impact Evaluation Guide 7-5.

¹⁴³ See Northeast Energy Efficiency Partnerships, *The Changing EM&V Paradigm: A review of Key Trends and New Developments, and Their Implications on Current and Future EM&V Practices* 21 (Dec. 2015), <http://www.neep.org/sites/default/files/resources/NEEP-DNV%20GL%20EMV%202.0.pdf> ("Energy program evaluation is required to be conducted by an independent third party in almost all jurisdictions. This requirement is to protect the credibility of evaluation results provided to regulators on behalf of ratepayers. While evaluators will have individual perspectives on programs and methods, they do not have a direct stake in the evaluation outcomes in the ways that program implementers and administrators do."); Proposed Federal Plan, 80 Fed. Reg. at 65,001 ("Inclusion of an independent verification component is also consistent with similar approaches required by state PUCs for the review of demand-side EE program results.").

¹⁴⁴ See Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills, 80 Fed. Reg. 52,100, 52,138–41 (Aug. 27, 2015).

requirements for independent verification of greenhouse gas offsets.¹⁴⁵ Based on these references, here are some specific requirements that EPA should consider including in the final rule:

- A specific time period – both “looking back” and “looking forward” – during which the verifier, its employees, and affiliates must avoid financial interests or transactions involving the client. The proposed EG for MSW landfills, for example, suggest that the verifier must avoid other business relationships with its client for a period of five years before and after completing the verification services.¹⁴⁶
- A similar time period – “looking back” and “looking forward” – during which the verifier’s employees and technical consultants must avoid employment with its clients.
- A requirement that independent verifiers attest to the accuracy and completeness of their verification reports, using a standard self-certification statement.¹⁴⁷
- A requirement that independent verifiers electronically file verification reports, and that both the identity of verifiers and verification reports be publicly disclosed;
- A maximum period of time during which a verifier can provide verification services for a particular client, in order to avoid the establishment of long-term relationships between a particular verifier and its client.¹⁴⁸
- “Spot checks” or selective audits of verification reports, conducted either by EPA, a state regulator, or another accredited independent verifier.

Importance of Regular Review and Update of EM&V Requirements. EPA correctly recognizes in the draft guidance that EM&V practices are steadily improving, and that updates to EM&V requirements will be needed to reflect evolving best practices over time.¹⁴⁹ We recommend that EPA consider formalizing this process to ensure that updates occur on a regular basis, and are well-informed by expert views and public comment. Specifically, we recommend that EPA provide for (ideally in the text of the final model rule itself):

- a specific timetable (i.e., once every two years) for reviewing the implementation of EM&V requirements, and updating the EM&V guidance;
- an informal public comment process for providing input on each round of revisions to the EM&V guidance; and
- the establishment of a multi-stakeholder advisory committee, which should include independent energy efficiency EM&V experts and practitioners, energy efficiency providers, environmental organizations, representatives of the states, representatives of

¹⁴⁵ See Cal. Code Regs. tit. 17, §§ 95977-79.

¹⁴⁶ See Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 80 Fed. Reg. 52,100, 52,139 (proposed Aug. 27, 2015).

¹⁴⁷ See *id.* at 52,140–41.

¹⁴⁸ See Cal. Code Regs. tit. 17, § 95977.1(a).

¹⁴⁹ EPA, Draft EM&V Guidance, 6 (“1.7 Evolving EM&V Practices and Guidance Updates”).

low-income ratepayers, and other qualified experts, to provide recommendations on updates to the EM&V guidance at regular intervals.

Recommendations of Joint Energy Efficiency Stakeholders. The thoughtful comments of the Joint Energy Efficiency Stakeholders on this rulemaking and EPA's draft Guidelines for Energy Efficiency EM&V make several recommendations that would appear to be particularly constructive in helping energy efficiency providers and verifiers properly implement the EM&V requirements, and in establishing consistent EM&V practices across states and over time. These recommendations include:

- EPA should provide template EM&V Plans and M&V reports in the final EM&V Guidance, building from existing EM&V plans and reporting forms. Sample EM&V plans for some common energy efficiency policies, programs and measures would help show states exactly what they need to include in their EM&V plans and provide a template that states could modify. For example, templates could be provided for new state or local building codes, residential appliance, lighting and weatherization programs, commercial and industrial prescriptive and custom rebate programs, and energy savings performance contracts.
- EPA should encourage states to require that ERC providers use standardized reporting formats and tools to report and document the incremental annual and cumulative annual savings of their EE project, program, policy etc., similar in concept to the standardized [Digital EM&V Methods Reporting Forms](#) recently developed for the Regional EM&V Forum.¹⁵⁰
- In order to promote more rigorous and consistent application of baselines for measurement of energy savings, EPA should work with DOE to develop additional guidance and proxy values where possible for common energy efficiency measures and update these estimates periodically.

D. EM&V for Renewable Energy and Gas Shift ERCs

EPA can leverage and enhance existing processes for monitoring electricity output at large generation facilities to develop more streamlined EM&V guidance for gas-shift ERCs and ERCs for zero-carbon generation without undermining the environmental integrity of the program. In developing this guidance, we encourage EPA to carefully consider the output EM&V guidelines in the RGGI model rule. EPA should also consider whether additional guidance is necessary for certain forms of distributed generation, which may not have the same level of EM&V for electricity used behind the meter.

E. Formula for Generating Gas Shift ERCs

¹⁵⁰ The [Regional EM&V Forum](#) is a project of Northeast Energy Efficiency Partnerships, Inc, which in 2015 included nine jurisdictions in the Northeast and Mid-Atlantic regions. *See* NEEP, EM&V Forum, <http://www.neep.org/initiatives/emv-forum>.

We agree with EPA’s decision not to issue gas-shift ERCs on the basis of whether or not the units exceed a particular capacity factor in the future. Connecting the reward of allowances to a facility or unit exceeding a particular capacity factor creates considerable uncertainty for owners and operators as to whether or not they will qualify for credits, and if so how many credits they will receive. This is particularly true in the early months of a compliance period when there is uncertainty about what the next few years will bring with regards to fuel prices and unit outages. This would undermine the impact of the intended incentive. For this reason, we support EPA’s decision to prorate the credit across all MWhs of generation by natural gas combined cycle units.

F. EPA Should Ensure Environmental Integrity is Protected if an ERC is Invalidated

EPA correctly notes that “...it is critical to the integrity of an ERC that it represents the actual MWh of energy generated or saved that it purports to represent,”¹⁵¹ and includes provisions in the proposed regulatory text that address adjustments or invalidations of ERCs that are improperly issued – whether through error, misrepresentation, or other causes. These provisions appear to include both potential liability for affected EGUs that use invalidated ERCs for compliance (what is sometimes referred to as “buyer liability” in analogous contexts),¹⁵² as well as provisions requiring generators of ERCs to cancel or retire ERCs where needed to make up for invalidated ERCs (“seller liability”).¹⁵³

EDF agrees with EPA that liability for invalidated ERCs is a critical issue to address in the model rule and federal plan. Accordingly, we urge EPA to finalize provisions that: a) assure that the environmental integrity of a rate-based plan will be protected in the event that ERCs are improperly issued, by providing that all such ERCs are promptly compensated for through additional retirements of ERCs; and b) set forth a clear and predictable allocation of liability for these additional ERC retirements, so that both sellers and purchasers of ERCs know their responsibilities in advance and can appropriately account for them in contracts and insurance agreements.

Although EPA’s proposed provisions appear to provide multiple pathways for addressing the issue of invalidated ERCs, these provisions could be improved upon in the final rule to better satisfy both of the principles above. With respect to environmental integrity, neither the proposed provisions addressing affected EGU responsibility for invalidated ERCs nor the provisions addressing liability of ERC generators provide full assurance that the rate-based system will be made whole for invalidated ERCs. In the event of an error or misstatement on the part of an ERC generator, the proposed rule provides that EPA will either withhold an appropriate amount of ERCs from that generator in the next reporting period, or cancel the appropriate amount of ERCs in that generator’s general account.¹⁵⁴ However, the proposed rules do not make clear how EPA will make up invalidated ERCs from a resource that has ceased submitting ERC applications, and has insufficient valid ERCs in its general account to cover the invalidated

¹⁵¹ See Proposed Federal Plan, 80 Fed. Reg. at 65,000.

¹⁵² See *id.* at 65,092, proposed 40 C.F.R. § 62.16420(c)(5)(iv).

¹⁵³ See *id.* at 65,095, proposed 40 C.F.R. § 62.16450.

¹⁵⁴ See *id.* at 65,095, proposed 40 C.F.R. § 62.16450(a)–(b).

ERCs. The proposed rule also provides that EPA may seek compensating ERCs from another eligible ERC-generating resource if ERCs are issued for a resource that is later found to be ineligible,¹⁵⁵ but this appears to be a discretionary authority that applies only in the case of a resource that is found to be wholly ineligible (as opposed to an eligible resource that has committed an error or misstatement in its EM&V report). Similarly, the enforcement provision for an affected EGU that surrenders an ERC that later turns out to be invalid does not specify what corrective action will be taken.¹⁵⁶

The proposed provisions also lack clarity on who will ultimately be responsible for making up invalidated ERCs and under what circumstances. For example, it is unclear whether the affected EGU *and* the ERC generator will be held responsible for invalidated ERCs under the respective provisions of the model rule, or whether one party has primary responsibility and another party has secondary responsibility. Within the provisions for recovery of invalidated ERCs from resources that are found to be ineligible, it is also unclear which other eligible generators would be responsible for making up those ERCs.

There are several approaches EPA could consider in the final rule to provide a more clear allocation of responsibility that assures environmental integrity. These include:

- *Seller liability, with buyer liability as backstop.* Under this approach, EPA would first call upon generators of invalidated ERCs to make the system whole by surrendering additional ERCs (either from their general accounts or by procuring them in the marketplace). Only if entity responsible for the invalidated ERCs fails to provide the necessary instruments would EPA require the buyer of an invalidated ERC to make up the shortfall. This approach is similar to what EPA has provided in the proposal, but provides a clearer hierarchy of responsibility and definitively requires that buyers provide a final backstop to assure compensation for invalidated ERCs.
- *Buyer liability.* EPA could provide that affected EGUs that surrender invalid ERCs (whether they are invalid at time of surrender, or later found to be invalid) are ultimately responsible for acquiring additional, valid ERCs to make up for the shortfall. This is similar to the approach the California Air Resources Board adopted for greenhouse gas offsets in the California emissions trading system. Although this approach has been criticized on the grounds that it could stifle demand for certain types of credits, and places responsibility on the party that is less able to protect against credit invalidation, it does have the advantages of providing unambiguous lines of responsibility and clear enforceability. Because this approach provides a clear liability framework, market participants can also “contract around” this framework in a way that mitigates its disadvantages.¹⁵⁷

¹⁵⁵ See *id.* at 65,096, proposed 40 C.F.R. § 62.16450(d).

¹⁵⁶ See *id.* at 65,092, proposed 40 C.F.R. § 62.16420(c)(5)(iv).

¹⁵⁷ For example, there are now insurance products available to participants in the California emissions trading program that will protect buyers against the risk of offset credit invalidation. Further, market participants have begun using standardized sales contracts for offset credits that contractually shift liability to sellers. See Katherine Hsia-Kiung, Emily Reyna, & Timothy O’Connor, *Carbon Market California: A Comprehensive Analysis of the*

- *Seller liability, with collective insurance from ERC generators.* Under this approach, EPA would first call upon generators of invalidated ERCs to make the system whole by surrendering additional ERCs. In order to address the possibility that EPA may find itself unable to effectively enforce against certain entities (such as small project developers that have gone out of business), EPA may find it necessary to create a small “insurance pool” created by withholding ERCs from other ERC generators in the same state on a *pro rata* basis. This insurance pool, which is similar in concept to the “buffer pool” that the California Air Resources Board established for forest offset projects under the California cap-and-trade program, would serve as a final backstop to ensure the environmental integrity of the rate-based program is preserved.

VII. Model Trading Rules

EDF strongly supports EPA’s proposal to issue model rules in order to support state planning efforts. Standardized model rules provide important guidance to states and will help them develop robust plans that will assure environmental integrity. Model rule frameworks can help cut down on the administrative work necessary for states by providing the nuts and bolts of the regulatory program, allowing states to focus on the customizable components of their implementation effort that are most important to their stakeholders.

We strongly support EPA’s proposal that the model rules be “trading ready,” subject to the general conditions on interstate trading that are described in the final Clean Power Plan. Model rules can provide significant value by articulating the specific requirements that are necessary for “trading ready” state plans. Applying a “trading ready” approach is an important opportunity for states to adopt a state plan that is compatible with others, allowing regulated entities additional flexibility in compliance through participation in multi-state emissions trading markets. By doing the heavy lifting on detailed underpinnings of emissions trading programs, model rule frameworks will help facilitate interstate trading—which can drive innovation and cost-savings, easing the path forward to achieving pollution reductions.

Accordingly, we encourage EPA to finalize the model rules as expeditiously as practicable. We strongly encourage EPA to consider whether some components of the model rules can be finalized shortly after the comment period closes in order to provide states even more clarity as they work to develop their plans.

We encourage EPA to finalize two model rules, a dual-rate trading-ready model rule, and a mass-based trading-ready model rule.

A. The Legal Foundation for & Prior Examples of Model Trading Rules

Golden State’s Cap-and-Trade Program 16 (2014), http://www.edf.org/sites/default/files/content/ca-cap-and-trade_1yr_22_web.pdf.

Offering states the opportunity to incorporate a model rule for emissions trading into a SIP is a well-established practice under the Clean Air Act. As part of the NO_x SIP Call, EPA established a model rule for “a voluntary market-based program . . . as one possible means for a State to meet its NO_x emissions reduction obligation.”¹⁵⁸ As with the CPP, EPA emphasized, “States . . . have the flexibility to respond as they see fit to meet their emissions budgets States are free to pursue other regulatory mechanisms or include other types of trading programs in their SIPs.”¹⁵⁹ Without limiting states’ options, EPA offered the model program “to provide a compliance mechanism that capitalizes on a proven means of cost effectively meeting a specific emissions budget that the Agency will assist States in administering.”¹⁶⁰

EPA used the model rule approach again under the Clean Air Interstate Rule, giving states the option to participate in EPA-administered trading programs for NO_x and SO₂.¹⁶¹ The agency stressed, “States are free to achieve the reductions through whatever alternative mechanisms the States wish to design; for example, a group of States could cooperatively implement their own multi-State trading programs that EPA would not administer.”¹⁶²

The process for electing to use the model rule is the same under the CPP as under the prior programs. In the NO_x SIP Call rulemaking, one commenter suggested that a state should be able to comply with just “a statement in its SIP declaring that the State will participate in the Federal program.”¹⁶³ However, EPA noted that it did “not have the statutory authority . . . to promulgate a Federal cap-and-trade program to achieve a State’s SIP call budget unless the State fails to” submit an approvable SIP.¹⁶⁴ Instead, a state “could either adopt the model rule by reference or develop State regulations in accordance with the model rule.” Similarly, under CAIR, EPA provided rules that states could “adopt or incorporate by reference.”¹⁶⁵ For the CPP, EPA once again respected the bounds of its authority, “drafting the model trading rule so that it can be adopted or incorporated by reference.”¹⁶⁶

B. Timing of Model Rule Issuance

EPA should finalize the model trading rules as soon as practicable, well before the initial submittal deadline of September 6, 2016, so that state regulators can begin considering them in state plan development at the earliest time.¹⁶⁷

Finalizing the model rules is vital for providing certainty for state regulators and stakeholders, and catalyzing faster development of state plans. Prompt issuance of model rules will also allow regulated power companies more lead time for strategic planning before the

¹⁵⁸ NO_x SIP Call, 63 Fed. Reg. 57,356, 57,457 (Oct. 27, 1998).

¹⁵⁹ *Id.* at 57,458.

¹⁶⁰ *Id.* at 57,457.

¹⁶¹ *See* Clean Air Interstate Rule, 70 Fed. Reg. 25,162, 25,257 (May 12, 2005).

¹⁶² *Id.*

¹⁶³ 63 Fed. Reg. at 57,458.

¹⁶⁴ *Id.*

¹⁶⁵ 70 Fed. Reg. at 25,167.

¹⁶⁶ Proposed Federal Plan, 80 Fed. Reg. at 64,973.

¹⁶⁷ *Id.* at 64,974–75.

compliance period begins in 2022. Sources facing a new compliance obligation will have the opportunity to consider and plan any necessary investments over an even longer time horizon—thereby maximizing flexibility and providing the best opportunity to optimize investment decisions. While the Clean Power Plan provides abundant lead time for regulated entities in all states, acting sooner will make it even easier for regulated sources to comply, and will help the state get ahead of the curve. Accordingly, EPA should help to facilitate this extra compliance flexibility by providing complete model trading rules as soon as possible for the benefit of state regulators and stakeholders that wish to use them to inform their own planning.

Where appropriate, EPA should also finalize discrete pieces of the model rules even earlier, as soon as possible after the close of the comment period. In particular, certain mechanical aspects of the model rules involving creation of compliance accounts, recording and tracking credit ownership, applying credits for compliance, penalties and enforcement, among others, borrow extensively from prior programs and are unlikely to draw significant comment or controversy. Early finalization of such key structural components will provide states with even more clarity as they work to develop their plans, while reserving EPA's ability to weigh and develop the more nuanced aspects of the model rules.

EDF urges EPA to finalize as soon as possible the following architectural pieces of the ERC tracking and compliance systems and the allowance tracking and compliance systems:

- RATE-based elements: Compliance and general accounts; Recordation of ERC generation and issues; Compliance demonstration; Emissions monitoring and reporting
- MASS-based elements: Allowance Tracking, Compliance Operations, and Penalties; Allowance Tracking and Compliance System; Compliance and General Accounts; Recordation of Allowance Allocations; Compliance with Emissions Limitations; Emissions Monitoring and Reporting Requirements

VIII. Ensuring Competitive and Well-Functioning Markets under Both Federal and State Plans

In the proposed rule, EPA calls for comments on design features in the federal plan and model rules that could assure the establishment of competitive and well-functioning markets in compliance instruments. Based on the long track record of well-functioning market-based programs for EGUs under the Clean Air Act – including the Title IV trading program for sulfur dioxide emissions from EGUs, the NO_x SIP Call, the Clean Air Interstate Rule, and the Cross-State Air Pollution Rule (CSAPR) – EDF agrees with EPA's assessment that the markets for allowances and ERCs under the Clean Power Plan will similarly be competitive, large, and liquid.

Nonetheless, it is important for EPA to review the model rules and federal plan to ensure they are consistent with sound market design principles. As a general principle, the best ways to enhance market liquidity and minimize the risk that any one participant could exercise market

power are to: a) maximize the size of the markets for compliance instruments by facilitating interstate trading, and b) ensure that compliance instruments are released to the market early enough and in sufficiently large quantities to enable banking and encourage active trading. There are several features of the proposed federal plan and model rules that already advance these two objectives or that, with modest adjustments, could further support these two objectives:

Trading-ready Model Rules and Federal Plan. As noted elsewhere in these comments, we support EPA’s proposal that the model rules and federal plan be “trading ready,” subject to the general conditions on interstate trading that are described in the final Clean Power Plan. In other words, affected EGUs operating either under the model rules or the federal plan should – by default – be allowed to purchase and sell compliance instruments with EGUs (and other non-EGU market participants) in other states with compatible plans. This feature not only enhances the cost-effectiveness of the model rule and federal plan framework, it also helps enlarge the size of the market for compliance instruments in a way that promotes liquidity and discourages attempts to exercise market power.

Advance Distribution of Allowances in Mass-Based Model Rule and Federal Plan. In order to further support market liquidity during the early stages of the program, EPA should finalize its proposed provisions to allocate some portion of the allowances several months before the start of the compliance period.¹⁶⁸ To further protect against liquidity concerns, EPA could also provide in the final rule for allocations of a small share of future vintage year allowances. Allocating future vintage year allowances would help the market establish long-term prices for allowances that will aid current investment decisions. We also note that the Clean Energy Incentive Program will help provide even earlier distribution of allowances, helping to get emissions trading systems up and running well in advance of the first compliance demonstrations in 2024.

Advance Issuance of ERCs in Rate-Based Model Rule and Federal Plan. The Clean Power Plan already incorporates several features that will help ensure that a liquid market for ERCs develops, ensuring their availability for compliance – including the Clean Energy Incentive Program, which will create an early “pool” of ERCs and the multi-year compliance period, which allows EGUs to defer making compliance demonstrations until after 2024. However, EPA could also consider incorporating into the model rule and federal plan an option for states to “front-load” the issuance of ERCs for projects that are highly likely to continue generating long into the future, such as large-scale renewable energy projects or long-lived demand-side energy efficiency measures. To illustrate, EPA could provide that a utility-scale wind energy project constructed in 2020 would receive – in advance of the first compliance period – a share of the future stream of ERCs it is expected to generate over the entire first compliance period (2022-2024), or even over the entire interim compliance period (2022-2029). This “front-loading” would help further enhance market liquidity for ERCs in the initial years of the program, especially in states that do not implement the CEIP.

¹⁶⁸ *Id.* at 65,026 (noting that allowance allocations would be recorded seven months prior to the start of the compliance period, and would include all allowances within the next compliance period).

Market Monitoring. There is every reason to believe that the markets established under the Clean Power Plan would function similarly well to the many successful market-based programs already in place under the Clean Air Act. Nonetheless, EPA could consider taking certain additional steps to verify that the markets established under the Clean Power Plan are operating competitively. For example, EPA could consider designating an independent market monitor – as RGGI, Inc. and the California Air Resources Board have done for their respective greenhouse gas markets¹⁶⁹ — to track transactions in compliance instruments and detect irregular or improper market activity. In addition, EPA could consider working cooperatively with other federal agencies with possible authority over transactions in compliance instruments – such as the Commodity Futures Trading Commission – to ensure proper oversight and enforcement of markets for compliance instruments.

Additional Features of a Well-Functioning Market. There is adequate time for all units to comply with this rule and the trading EPA has built into both the rate- and mass-based approaches provides plenty of flexibility for plants. Accordingly, it is not necessary that EPA provide additional time for compliance for any units, including small units. Neither should EPA allow borrowing of credits. Market liquidity and price discovery are important but the CEIP and early allocation or auction of the allowances from the first compliance period should be more than adequate to address any concerns.

IX. Implementation of the Clean Energy Incentive Program

EDF appreciates EPA’s call for comments in the proposed rule on certain issues related to the implementation of the CEIP, as well as the Agency’s extensive public outreach and broad-based solicitation of public input in a separate non-regulatory docket. EDF looks forward to further opportunity to comment on the structure and implementation of the CEIP in the future administrative action that EPA has signaled will take place later this year. In this section, EDF expands on the comments provided in the non-regulatory docket and addresses issues raised in the proposed rule.

A well-designed early action program would serve a number of important objectives. First and foremost, such a program should provide clear, positive incentives for deployment of resources and technologies that achieve significant additional emission reductions prior to the start of the compliance period for the Clean Power Plan. As EPA appropriately recognizes in the final emission guidelines, such incentives entail a valuable opportunity to encourage expansion of energy efficiency programs that benefit low-income households and communities – programs that are proven to lower electricity bills while reducing pollution. The CEIP can also help kick-start the markets in allowances and ERCs that will support efficient, low-cost CPP compliance over the long-term, enhancing liquidity in those markets and providing ample flexibility for states and power companies to meet emission reduction goals while supporting grid reliability.

¹⁶⁹ *Market Monitor Reports*, RGGI, http://www.rggi.org/market/market_monitor (last visited Jan. 21, 2016); *Market Program Monitoring*, CARB, <http://www.arb.ca.gov/cc/capandtrade/marketmonitoring/marketmonitoring.htm> (last visited January 21, 2016).

Ensuring the CEIP Maintains and Enhances the Emission Reduction Benefits of the CPP.

As EPA states in the proposed rule, the CEIP must be designed in a way that maximizes additional reductions prior to the start of the compliance period, and avoids any erosion in the overall emission reduction benefits of the Clean Power Plan. An important corollary to this principle is that the “borrowed” ERCs or allowances that the state allocates to CEIP projects must be offset during the interim compliance period.

Although the method for accomplishing this offset is relatively straightforward for mass-based states, the proposed rule calls for comment on methods to ensure that “borrowed” ERCs are likewise made up for during the compliance period, such that the CEIP “would have no impact on the aggregate emission performance of sources required to meet rate-based emission standards during the compliance periods.”¹⁷⁰ We encourage EPA to adopt one of the approaches outlined in the proposed rule, under which the stringency of the performance rates during the interim compliance period would be increased modestly to account for the “borrowed” ERCs that have been allocated to CEIP projects.¹⁷¹ This proposed mechanism parallels the approach for offsetting borrowed allowances in mass-based states, under which borrowed allowances would be deducted from allocations to affected EGUs. In both cases, a portion of compliance instruments would be reserved for use in the CEIP; to assure that the stringency of the program is nonetheless maintained, affected EGUs as a whole would face a commensurate incremental increase in program stringency. Because this mechanism would place the responsibility for making up the borrowed ERCs on affected EGUs, it would also preserve incentives for investment in and deployment of ERC-generating projects.

Reallocation of Unused Matching Allowances or ERCs. We urge EPA to consider retiring, rather than reallocating, unused credits in the federal matching pool. Under these circumstances, reallocation of the matching pool for renewable energy projects would do little to advance the purposes of the CEIP and would be more likely to erode the emission reduction benefits of the Clean Power Plan. We urge EPA to consider reallocating credits only for low-income energy efficiency projects, which can be deployed rapidly and may be more responsive to this incentive option.

EM&V Requirements for CEIP Projects. In order to provide maximum assurance that the CEIP is delivering real, near-term emission reduction benefits, all eligible projects should apply the same EM&V requirements that will be finalized by EPA as part of this rulemaking and the separate EM&V guidance. Given the matching feature of the program, it is crucial that robust monitoring and verification be applied, and it is appropriate to apply the same approach as that applied to compliance period ERCs. It is also feasible for project sponsors to apply these requirements, in light of the ample lead time prior to the start of the CEIP compliance period.

¹⁷⁰ Clean Power Plan, 80 Fed. Reg. at 64,830.

¹⁷¹ Based on the size of the federal matching pool and overall emissions from affected EGUs, we anticipate that a slight increase of stringency (on the order of approximately two percent) would be sufficient to fully offset the borrowed ERCs.

Meaningful Focus on Supporting Energy Efficiency in Low-Income and Tribal Communities. EDF strongly supports EPA’s focus on low-income energy efficiency opportunities in the CEIP. As EPA correctly recognizes in the final Clean Power Plan, low-income households have often faced barriers in accessing energy efficiency programs that could reduce their energy bills while achieving significant emission reductions.¹⁷² Providing additional, focused incentives in the CEIP for low-income energy efficiency initiatives could help ensure that low-income households share in the benefits of energy efficiency while advancing the overall goals of the CPP.

Accordingly, EDF recommends as a starting point that at least half of the matching pool be reserved for low-income energy efficiency programs in each state. This approach would encourage and reward significant investments in low-income energy efficiency by states participating in the CEIP, and would ensure that sufficient credits are available to accommodate significant growth in these programs. Because low-income energy efficiency projects are eligible to earn twice the ordinary amount of CEIP credit for each MWh saved, it may be appropriate for EPA to set aside an even larger proportion of the matching pool for low-income energy efficiency.

In addition, we encourage EPA to define eligibility for the low-income energy efficiency incentive in such a way as to ensure that the CEIP benefits communities that are most in need, and that are most often overlooked and under-represented in many existing efficiency programs. By contrast, a poorly defined low-income incentive would fail to encourage investment in projects that actually benefit low-income Americans. To this end, we support a targeted definition of low-income energy efficiency that aligns with and reinforces valuable existing programs and indicators. Further, we believe low-income energy efficiency incentives should be available to any household or organization that meets a meaningful definition of “low-income,” regardless of where it is located.

One potential approach is laid out in comments submitted by Energy Outreach Colorado (EOC) in the non-regulatory docket. EOC recommends that households with annual incomes at or below 80 percent of the area median income be considered “low-income,” and that nonprofit organizations serving low-income families (such as food banks, homeless shelters, transitional affordable housing, and community centers) should also be eligible. Another reasonable approach would be to draw from the eligibility criteria for federal housing assistance programs administered by the Department of Housing and Urban Development (HUD).¹⁷³

Finally, it is critically important that Tribes be eligible for the CEIP and that Tribal communities be included in the incentives for expansive energy efficiency programs benefiting low income communities. EPA should consult with Tribal communities to ensure that they have full access to the full benefits of these clean energy incentives. More broadly, EPA should

¹⁷² 80 Fed. Reg. at 64,831.

¹⁷³ HUD produces a manual that delineates “very low income,” “low-income,” and “extremely low income” households — taking into account area median income, family size, and other factors — for purposes of the various programs it administers. For more information, see U.S. Department of Housing and Urban Development, *FY 2015 HUD Income Limits Briefing Material* (Mar. 10, 2015), http://www.huduser.gov/datasets/il/il15/IncomeLimitsBriefingMaterial_FY15_Rev_2.pdf.

support authentic community engagement in CEIP design processes and provide appropriate technical guidance in order to ensure that programs are fully leveraged to benefit low-income Americans.

Eligibility Should be Determined Based on Date of Plan Submission. EDF strongly supports EPA’s decision in the final Clean Power Plan to predicate the eligibility of a project for CEIP credits on the final state plan submission, and does not support reopening this settled issue. The CEIP gives credit for early compliance actions. Accordingly, it is foundational to have the architecture for compliance in place to know that the clean energy incentive program is in fact accompanied with the essential architecture – rigorous measurement, tracking and verification – for crediting early actions deployed for compliance. Likewise, it is helpful for project developers and the public alike to have certainty about the nature of the state compliance program itself, including decisions such as whether the state will be implementing a mass- or rate-based program to inform effective deployment of the CEIP. Linking CEIP crediting to the submission of state plans will help verify that the CEIP is achieving real and verifiable environmental outcomes, driving new investment designed to achieve required reductions through the Clean Power Plan, and ensuring that deployment of the CEIP does not undercut the stringency of the overall program.

Definition of “Commence Construction.” EPA has finalized guidance to issue early action ERCs/allowances for renewable energy projects that “commence construction” after a state submits its final state plan. As noted, the tie to final plan adoption and submittal is critical to program integrity. At the same time, EPA should define “commence construction” thoughtfully to strengthen incentives for clean energy project development and deployment in the period after plan submittal and before compliance. This term has not been specifically defined in the context of the Clean Power Plan, but is defined in the general provisions implementing Section 111, 40 C.F.R. §60.2: “*Commenced means, with respect to the definition of new source in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification. Construction means fabrication, erection, or installation of an affected facility.*”

EPA should ensure that its definition of “commence construction” in the context of the CEIP does not preclude the program from being fully utilized because of the potential length of the timeline between a signed contract and an operational facility. EDF, for example, supports the approach taken by NextEra Energy (and others) to recommend that the term “commence construction” be defined in the context of the CEIP to mean that “*the owner or operator has all necessary preconstruction approvals or permits and has undertaken, or has caused to be undertaken, a continuous program of on-site construction of the source,*” to foster the early compliance incentive.

X. Proposed Alternative Compliance Pathway for Units That Commit to Retire

In EPA’s April 2015 memorandum on an “Alternative Compliance Option Technical Support Document (TSD),” EPA laid out options on how individual compliance units could be

allowed to voluntarily opt out of a mass or rate-based program. Those options were designed in a manner intended to preserve the environmental objectives of the Clean Power Plan while providing greater flexibility for regulated entities.

EPA's theory was that this "may be particularly advantageous for marginal or older units that are no longer operating at their historical levels or which may choose to retire relatively early in the compliance periods. The affected EGU would gain the benefit of reduced administrative burdens as well as the potential ability to emit more CO₂ earlier in the program." However, we note that market-based programs whether they are rate- or mass-based in nature provide full flexibility to regulated entities to determine how best to comply, including whether and when to make on-site changes, or whether to retire. As a result, it is not clear what benefits this option actually provides to these sources. This rationale would appear to be further muddled if EPA were to also allow these sources to exceed their emissions limits by purchasing additional allowances or ERCs. Therefore, if EPA adopts an alternative compliance option that allows units to opt-out of a mass or rate-based program, it should not permit sources to exceed their emissions limits by purchasing additional allowances or ERCs

As EPA notes, removing these sources and allowances from the trading system could affect market liquidity and/or prices for allowances and ERCs. Therefore, if EPA decides to adopt these voluntary opt-out provisions, then it should limit eligibility to small units.

EPA's approach does appear to adequately preserve the CO₂ emissions benefits under a mass-based program for new plus existing units as it reduces the state cap by an amount equal to the sources mass budget. However, it could undercut any leakage fix for mass-based programs for existing units by reducing the number of allowances available for updating output-based allocations.

However, it is not clear that the proposed approach is appropriate in states implementing a rate-based program as it effectively allows sources to opt out of the rate-based program and implement a mass-based standard if doing so would be more advantageous. In the final rule EPA was justified in determining that states would need to choose either a mass or rate-based standard, and could not choose to implement a mixture of the two across its generation sources. Allowing sources to make this decision on their own in this manner would seem to directly undermine this decision, and risks undermining the emissions objectives of the Clean Power Plan.

The inherent problem with allowing source to opt out of a rate-based program and into a mass-based program is that it untethers the emissions limit for the unit from any requirement to generate. To explain, consider that under rate-based program units effectively have to match every MWh of generation with some amount of clean generation (in the form of ERCs). Thus, any generation at that unit would actually stimulate some improvement in the operation of EGUs in the state. However, once it opts out of the rate-based program and into this alternative mass-based framework, it can comply merely by reducing its output. In this case, generation from the unit that has opted out will not necessarily stimulate any improvement in the operation of EGUs in the state. Meanwhile, the other units in the state that are subject to a rate-based standard will be able to increase their generation and their emissions accordingly. Thus the net impact of the

shift is to reduce the amount of generation actually covered by the standard without guaranteeing a corresponding reduction in emissions.