ADVANCED ENERGY ECONOMY

DESIGN PRINCIPLES FOR A RATE-BASED FEDERAL PLAN UNDER EPA'S CLEAN POWER PLAN

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ADVANCED ENERGY ECONOMY
the business voice of advanced energy

EXECUTIVE SUMMARY

Advanced Energy Economy (AEE) has prepared this white paper in anticipation of the Environmental Protection Agency's development of a proposed Federal Plan to implement its Clean Power Plan in states that do not submit a satisfactory state plan.

As a national organization of businesses making the energy we use secure, clean, and affordable, AEE believes that a properly designed Federal Plan can help those states that are not able to submit a compliance plan to move toward a higher performing energy system for the 21st century. In addition to providing a backstop where a state does not submit a satisfactory plan, the Federal Plan can serve as guidance to states in developing their own plans, and as a temporary or partial plan where state plan development may be delayed or may not address all issues.

The Federal Plan, like any state plan, can best achieve the goals of the Clean Power Plan by harnessing the vast potential of advanced energy to improve reliability, increase flexibility, and produce energy savings, as well as reduce emissions. Certain plan designs would optimize the use of advanced energy, while other designs might fail to take full advantage of advanced energy resources. The purpose of this paper is to provide EPA with recommendations on design principles that will allow the Federal Plan to make use of advanced energy for maximum benefits.

While EPA has significant discretion in designing its Federal Plan, the Clean Air Act establishes the basis and authority by which EPA must act. The Federal Plan must be promulgated in a timely manner, and must reach full compliance with the state targets on the same compliance timetable. It may incorporate a broad range of market-based measures, including participation in a multi-state crediting program by fossil fuel-fired electric generating units (EGUs) and by non-EGUs that voluntarily provide advanced energy services.

Broadly speaking, EPA may propose either a rate-based Federal Plan or a mass-based Federal Plan, or the Agency could propose both types for comment. At this time, AEE takes no position on the relative merits of a rate-based versus mass-based Federal Plan, and would support a mass-based plan designed to provide a level playing field to all electric sector participants contributing to power plant emissions reductions. However, because a rate-based target presents a number of complicated plan design questions, this white paper focuses on design principles relevant to a rate-based Federal Plan.

In the Clean Power Plan, EPA has proposed to provide states the option of designing a plan that includes obligations on entities other than fossil fuel-fired EGUs (a "portfolio approach"). AEE appreciates that EPA has provided states that develop a compliance plan with such flexibility. However, EPA's past regulatory actions suggest that, where EPA must impose a Federal Plan, it will impose emission reduction obligations solely on affected EGUs, rather than utilize such a portfolio approach. Fortunately, as we explained in our December 1, 2014 supplemental comments, current electric sector practices demonstrate that owners of EGUs have ample ability to directly invest in advanced energy or to procure credits associated with advanced energy investments as a means of offsetting their units' output and associated emissions. A Federal Plan that relies on direct regulation of EGUs as its primary compliance mechanism must establish appropriate economic incentives for advanced energy deployment, such as by providing those EGUs the flexibility to use such credits to aid in their compliance.

To that end, AEE recommends that a rate-based Federal Plan:

- utilize the market-based mechanism of rate-based trading, allowing interstate credit trading among states under the Federal Plan, and with any state under a state plan that includes appropriate links to the Federal Plan;

- allow EGUs to comply, in part, through purchase of emission reduction credits generated by a wide array of advanced energy providers—including zero- and low-emission generation resources and demand-side resources—in an amount based on the contribution to avoid EGU emissions;

- require verification and participation in a tracking registry for any resource seeking to generate tradable credits; and

- phase in the emission limitation for each unit to provide both a clear market signal and sufficient flexibility for appropriate planning through the use of emission reduction milestones coupled with flexibility mechanisms such as multi-year compliance periods and banking of emission credits (including credits generated before the 2020 mandatory compliance start-date).

The design principles put forth in this paper are predicated on EPA's established jurisdiction over EGUs and its clearly granted authority to incorporate market-based compliance measures. Utilizing these design principles will allow the Federal Plan to leverage advanced energy for maximum benefit in implementing the Clean Power Plan in the states where it is imposed.

I. Introduction

Advanced Energy Economy (AEE) has prepared this white paper to inform the Environmental Protection Agency's development of a proposed Federal Plan to implement its Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units[1] (Clean Power Plan, or CPP) in a state that does not submit an acceptable state plan.

AEE is a national organization of businesses making the energy we use secure, clean, and affordable. Thanks to technological advances and innovation, we now have more options for meeting our energy needs than ever before. We call these options "advanced energy."

AEE and its state and regional partner organizations, which are active in 26 states, represent more than 1,000 companies and organizations that span the advanced energy industry and its value chains. Technology areas represented include energy efficiency, demand response, natural gas, wind, solar, smart grid, nuclear power, and advanced transportation systems. Used together, these technologies and services will create and maintain a higher-performing energy system—one that is reliable and resilient, diverse, cost-effective, and clean—while also empowering customers with new and better energy products and services.

AEE has been an active participant in the Clean Power Plan rulemaking. Prior to EPA's release of the proposed rule, we provided recommendations on its design.[2] During the comment period for the proposed rule, we submitted comments on November 5, 2014[3] and supplemental comments on December 1, 2014.[4] In addition, AEE has been working actively with state policy-makers on the development of their state plans for the Clean Power Plan.

In this white paper, we address EPA's development of a Federal Plan in support of the Clean Power Plan. Under section 111(d) of the Clean Air Act, EPA is required to prescribe a Federal Plan for a state in cases where the state fails to submit a satisfactory state plan. EPA has committed to issuing a proposed Federal Plan this summer.

The Federal Plan, like any state plan, can best achieve the goals of the Clean Power Plan by harnessing the vast potential of advanced energy to improve reliability, increase flexibility, and produce energy savings, as well as reduce emissions. Certain plan designs would optimize use of advanced energy, while other designs might fail to take full advantage of advanced energy resources. The purpose of this paper is to provide EPA with recommendations on design principles that will allow the Federal Plan to make use of advanced energy for maximum benefits. To be clear, this white paper does not provide a comprehensive set of recommendations on all elements of a Federal Plan, but rather highlights certain design principles of particular importance for the maximum beneficial use of advanced energy.

AEE applauds the Clean Power Plan's proposed approach of providing states the flexibility to choose between designing a compliance plan to meet an EPA-determined rate-based interim and final goal or to elect instead to translate those into mass-based goals. To the same end, EPA may propose both rate-based and mass-based Federal Plan options. At this time, AEE takes no position on the relative merits of a rate-based versus mass-

[1] 79 Fed. Reg. 34,830 (proposed June 18, 2014) .
[2] Advanced Energy Economy, *Recommendations on EPA's Forthcoming Proposal To Reduce Carbon Emissions from Existing Power Plants*, (May 5, 2014).
[3] Comment submitted by Malcolm Woolf, Senior Vice President Policy and Government Affairs, Advanced Energy Economy (AEE) (November 5, 2014), *available at* http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2013-0602-22276 [hereinafter "AEE Comments"]
[4] Comment submitted by Malcolm Woolf, Senior Vice President, Policy and Government Affair, Advanced Energy Economy (AEE) (December 1, 2014), *available at* http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2013-0602-22924 [hereinafter "AEE Supplemental Comments"].

based Federal Plan, and would support a mass-based plan designed to provide a level playing field to all electric sector participants contributing to emissions reduction at power plants. However, because rate-based plan design presents a number of complicated questions, the answers to which will have a significant impact on the ability of advanced energy to contribute to emissions reductions, this white paper focuses on design principles for a rate-based Federal Plan.

II. Importance of the Federal Plan

The Federal Plan is a vital component of the Clean Power Plan in at least three respects:

- Federal Plan as guidance. For states that are developing their own plan, the Federal Plan can provide a model – including by demonstrating how to integrate and promote advanced energy solutions for maximum benefit in achieving state targets at low cost. The Federal Plan will send a strong signal to states about what policy designs EPA considers approvable.

- Federal Plan as a temporary plan, or as a partial state plan. Some states could conclude that it is most efficient and effective simply to use the Federal Plan as their state plan, either temporarily or permanently. There is precedent for this approach In past rulemakings, the Agency has offered a section 110(c) Federal Implementation Plan (FIP)[5] as a kind of "stand-by" state plan, allowing a state to adopt the FIP until such time as the state can replace the FIP in whole or in part (e.g., with state-specific allowance allocations or opt-in provisions). EPA adopted this approach in various forms in prior proceedings on the Clean Air Interstate Rule (CAIR),[6] the Cross State Air Pollution Rule (CSAPR),[7] and the Tailoring Rule.[8]

- Federal Plan as assurance of full implementation and a level playing field. The Clean Power Plan will only meet its objectives if it is implemented on a nation-wide basis, and only if each state has confidence that its policy-making efforts will be matched by efforts in other states. The Federal Plan is therefore a key component of the Clean Power Plan in that it prevents a "race to the bottom." For this reason, it is important—and, as discussed below, legally required—that the Federal Plan for any state be no less stringent and no less comprehensive than the state's underlying obligations under the Clean Power Plan rule guideline.

III. EPA's Authority and Obligations

EPA's authority to issue a Federal Plan is directly tied to its authority to issue a FIP through a cross reference to the provision in the Clean Air Act establishing EPA's FIP authority.[9] That section reads:

[5] Section 111(d)(2) of the Clean Air Act directs EPA to issue a "plan for a state" when a state fails to submit a satisfactory plan of its own. CAA § 111(d)(2), 42 U.S.C. § 7411(d)(2). These comments refer to such a plan as a "Federal Plan" to avoid confusion with the "Federal implementation plan" (or "FIP") that EPA must issue when a state fails to submit a satisfactory State implementation plan in the context of regulating criteria pollutants under the National Ambient Air Quality Standards.
[6] Federal Implementation Plans To Reduce Interstate Transport of Fine Particulate Matter and Ozone; Revisions to the Clean Air Interstate Rule, 71 Fed. Reg. 25,328 (2006) [hereinafter "CAIR FIP"].
[7] Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48208 (Aug. 8, 2011) [hereinafter "CSAPR"].
[8] Action To Ensure Authority To Issue Permits Under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions: Federal Implementation Plan, 75 Fed. Reg. 82246 (Dec. 30, 2010).
[9] CAA § 111(d)(2), 42 U.S.C. § 7411(d)(2).

> (1) The Administrator shall promulgate a Federal implementation plan at any time within 2 years after the Administrator—
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> (A) finds that a State has failed to make a required submission or finds that the plan or plan revision submitted by the State does not satisfy the minimum criteria established under subsection (k)(1)(A) of this section, or
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> (B) disapproves a State implementation plan submission in whole or in part, unless the State corrects the deficiency, and the Administrator approves the plan or plan revision, before the Administrator promulgates such Federal implementation plan.[10]

In 1990, Congress amended the Clean Air Act to more clearly establish the scope of EPA's FIP authority.[11] In particular, Congress added a new definition of "federal implementation plan" to the Act:

> 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.[12]

A comprehensive legal analysis of EPA's authority and obligations to issue a Federal Plan under section 111(d)(2)(A) is beyond the scope of this white paper. However, AEE urges EPA to take into account the following points that arise from a review of the relevant statutory provisions, regulatory provisions, and case law on Federal Plans and FIPs:

- *The Federal Plan must be timely.* If EPA finds that a state has failed to submit a satisfactory plan under the Clean Power Plan rule by the relevant deadline, then EPA is obligated to issue a Federal Plan for that state. Section 111(d) does not directly specify a timeline for this; however, based on the reference to EPA's FIP authority, the Clean Air Act requires EPA to issue the plan within two years. In addition, EPA's own section 111(d) implementing regulations provide that EPA will finalize a Federal Plan within six months of the state plan submission deadline.[13]

- *The Federal Plan must require full compliance with the state target, and on the same compliance timetable.* The Federal Plan must correct the inadequacy of the state plan, and provide for attainment of the relevant standard. Accordingly, the Federal Plan for a state under the Clean Power Plan rule must achieve the same requirements applicable to the state – and must require such compliance by the same deadlines set forth in the Clean Power Plan rule.[14]

- *The Federal Plan can impose emission rate limitations on affected EGUs.* As outlined above, EPA's authority to issue a Federal Plan under section 111(d) is linked to its authority to issue a FIP under

[10] CAA § 110(c)(1), 42 U.S.C. § 7410(c)(1).
[11] 1990 Clean Air Act Amendments, P.L. 101-549 § 108(j), 104 Stat. 2399, 2468.
[12] CAA § 302(y), 42 U.S.C. § 7602(y).
[13] 40 C.F.R. § 60.27(d).
[14] EPA has long interpreted section 111(d)(2) to require the same level of emission reductions as required of states in an emission guideline. *See, e.g.*, 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. 60689, 60697 (Nov. 8, 1999) [hereinafter "MSWL Federal Plan"]. EPA's regulations for section 111(d) similarly provide that the Federal Plan shall require the same level of stringency and same compliance timetable as the guideline, with some limited exceptions. 40 C.F.R. § 60.27(e)(1).

section 110(c).[15] EPA's FIP authority—and therefore its Federal Plan authority—explicitly includes the option to impose "enforceable emission limitations or other control measures, means or techniques."[16] An "emission limitation" can include "a requirement . . . which limits the . . . rate . . . of emissions of air pollutants."[17] EPA has imposed emission rate limitations on regulated entities in many section 111(d) Federal Plans.[18]

- *The Federal Plan may allow EGUs to rely on a broad range of market-based measures for compliance.* EPA's FIP authority—and therefore its Federal Plan authority—specifically "includes . . . economic incentives, such as marketable permits or auctions of emission allowances."[19] More generally, courts have interpreted EPA's authority to include "all of the rights and duties that would otherwise accrue to the state" to develop a Clean Air Act plan.[20] In effect, when issuing a Federal Plan, EPA "stands in the shoes of the defaulting state."[21] In the CPP and in previous rules, EPA has interpreted section 111(d) to allow state compliance plans to utilize rate-based trading.[22] To the extent that the Clean Power Plan authorizes a state to incorporate tradable rate credits into its compliance plan, EPA may do the same. In fact, EPA has proposed and utilized market-based measures to implement federal requirements under both section 111(d) and section 110(c).[23] The use of rate-based trading and of tradable emission reduction credits to recognize the emission reduction contributions of zero- and low-emitting resources and demand-side resources are consistent with this authority.

- *The Federal Plan may authorize participation in a multi-state credit-trading program.* In past FIPs, EPA has established programs in which regulated sources in an affected state could participate in a market-based program that allowed multi-state trading.[24] EPA also adopted such a multi-state approach as a model rule for state compliance with the Clean Air Mercury Rule (CAMR),[25] as well as for the proposed Federal Plan for that rule.[26]

- *The Federal Plan may authorize EGUs to comply by utilizing credits from non-EGUs that provide advanced energy services.* To the extent that a state could include measures in its plan that allow EGUs to utilize advanced energy as a compliance tool—which EPA already allows in SIPs to address criteria

[15] CAA § 111(d)(2), 42 U.S.C. § 7411(d)(2).
[16] CAA § 302(y), 42 U.S.C. § 7602(y).
[17] CAA § 302(k), 42 U.S.C. § 7602(k).
[18] Federal Plan Requirements for Large Municipal Waste Combustors Constructed on or Before September 20, 1994, 63 Fed. Reg. 63191 (Nov. 12, 1998); 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. 60689 (Nov. 8, 1999); Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed On or Before June 20, 1996, 65 Fed. Reg. 49868 (Aug. 15, 2000); Federal Plan Requirements for Small Municipal Waste Combustion Units Constructed On or Before August 30, 1999, 68 Fed. Reg. 5144 (Jan. 31, 2003); Federal Plan Requirements for Commercial and Industrial Solid Waste Incinerators Constructed on or Before November 30, 1999, 68 Fed. Reg. 57518 (Oct. 3, 2003); Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed On or Before December 1, 2008, 78 Fed. Reg. 28052 (May 13, 2013); *see also* Federal Plan Requirements for Other Solid Waste Incineration Units Constructed on or Before December 9, 2004, 71 Fed. Reg. 75816 (proposed Dec. 18, 2006); Federal Plan Requirements for Sewage Sludge Incineration Units Constructed on or Before October 14, 2010, 80 Fed. Reg. 23,402 (proposed Apr. 27, 2015).
[19] CAA § 302(y), 42 U.S.C. § 7602(y).
[20] Cent. Ariz. Water Conservation Dist. v. EPA, 990 F.2d 1531, at 1541 (9th Cir. 1993) (citation omitted)).
[21] *Id.* (citation omitted).
[22] Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources; Municipal Waste Combustors, 60 Fed. Reg. 65387, 65402 (Dec. 19, 1995).
[23] CAIR FIP, 71 Fed. Reg. 25,328 (2006); CSAPR, 76 Fed. Reg. 48208 (Aug. 8, 2011); *see also* Federal Implementation Plans To Reduce the Regional Transport of Ozone, 63 Fed. Reg. 56394 (*proposed* Oct. 21, 1998); Federal Plan Requirements for Clean Air Mercury Rule, 71 Fed. Reg. 77100 (*proposed* Dec. 22, 2006) [hereinafter "Proposed CAMR Federal Plan"].
[24] CAIR FIP, 71 Fed. Reg. 25,328 (2006); CSAPR, 76 Fed. Reg. 48208 (Aug. 8, 2011) (permitting multi-state trading with some geographic limitations in order to comply with the statutory requirements of the section for which the FIP was implemented); *see also* Federal Implementation Plans To Reduce the Regional Transport of Ozone, 63 Fed. Reg. 56394 (*proposed* Oct. 21, 1998).
[25] EPA, Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28606 (May 18, 2005) [hereinafter "Final CAMR Rule"].
[26] EPA, Federal Plan Requirements for Clean Air Mercury Rule, 71 Fed. Reg. 77100 (proposed Dec. 22, 2006) [hereinafter "Proposed CAMR Federal Plan"].

pollutants,[27] and has proposed to allow under the Clean Power Plan[28]—so too could EPA include such measures in a Federal Plan.[29] The courts have construed Congressional delegation under section 110(c)—and therefore under section 111(d)—broadly.[30] This authority is also supported by the definition of "federal implementation plan", which explicitly "includes . . . other control measures, means or techniques [that] provide for attainment of the relevant . . . standard."[31] EPA's authority to issue "other control measures" could include measures that limit emissions from EGUs indirectly, such as by encouraging energy efficiency and renewable energy.[32] Accordingly, while it is our assumption that the Federal Plan will impose primary obligations on affected EGUs, the Federal Plan may also authorize affected EGUs to utilize credits issued to advanced energy resources as a compliance mechanism.[33]

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- *Promulgation of a Federal Plan for a state does not preclude later state involvement*. The finalization of a Federal Plan need not preclude the Agency from later approving a satisfactory state plan submission that would replace the Federal Plan. Such state plans would not have to replace a Federal Plan in its entirety and could, instead, substitute the state's policy preferences for particular choices made by EPA in its Federal Plan, provided the plan would still meet the state's underlying emissions target.[34] Finally, in past Federal Plan rulemakings, EPA has given states the opportunity to implement Federal Plan requirements within the state on a delegated authority basis.[35]

IV. Key Rate-Based Federal Plan Design Principles for Advanced Energy

As noted above, AEE applauds the Clean Power Plan's proposed approach of allowing states to choose between designing a rate-based and mass-based compliance plan, and recognizes that EPA may propose both rate-based and mass-based Federal Plan options. At this time, AEE takes no position on the relative merits of a rate-based versus mass-based Federal Plan, and would support a mass-based plan designed to provide a level playing field to all electric sector participants contributing to emission reductions at power plants. Because a Federal Plan using rate-based state goals and EGU compliance obligations would present a number of

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[27] Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans, EPA-456/D-12-001a (July 2012), *available at* http://epa.gov/airquality/eere/pdfs/EEREmanual.pdf.

[28] Clean Power Plan, 79 Fed. Reg. at 34919. In addition, past EPA rulemakings have explicitly allowed states to incorporate additional facilities into their market-based trading programs. *See, e.g.*, CAIR FIP, 71 Fed. Reg. at 25,339.

[29] Of course the Federal Plan may not exceed constitutional limits on federal power. *See* New York v. United States, 505 U.S. 144 (1992); *but see id.* at 167 ("where Congress has the authority to regulate private activity under the Commerce Clause, we have recognized Congress' power to offer States the choice of regulating that activity according to federal standards or having state law pre-empted by federal regulation"). The mere fact that states have traditionally regulated electric sector entities does not itself preclude EPA from regulating those same entities. *South Terminal Corp.*, 504 F.2d at 677-678 (holding that EPA's authority to use certain regulatory tools under section 110 does not usurp state police powers in violation of the Tenth Amendment and is not limited merely because states have historically had power over a particular means of regulation (e.g., parking regulation through zoning)).

[30] In *South Terminal Corp. v. EPA*, 504 F.2d 646, 669, 677-78 (1st Cir. 1974), the First Circuit held:

> "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 are inclined to construe Congress' broad grant of power to the EPA as including all enforcement devices reasonably necessary to the achievement and maintenance of the goals established by the legislation."

See also Cent. Ariz. Water Conservation Dist. v. EPA, 990 F.2d 1531, at 1541 (9th Cir. 1993) (when issuing a FIP, 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." (citation omitted)).

[31] CAA § 302(y).

[32] This interpretation would be consistent with the First Circuit's interpretation of EPA's FIP authority to include the regulation of "indirect sources" of pollution. *South Terminal Corp. v. EPA*, 504 F.2d 668 (1st Cir. 1974). Congress explicitly removed the ability to issue a Federal Plan containing regulation of a limited set of "indirect sources"—those related to mobile source emissions. However, this does not limit the ability to regulate indirect sources of stationary source emissions.

[33] In the context of the Title IV acid rain trading program, EPA explicitly allows advanced energy to participate by providing energy efficiency and renewable energy the opportunity to receive emission allowances. 42 U.S.C. § 7651c(f)(2)(A); *see* David R. Wooley, The Clean Air Act Amendments of 1990: Opportunities for Promoting Renewable Energy (Technical Report NREL/SR-620-29448, Dec. 11, 2000), available at http://www.nrel.gov/docs/fy01osti/29448.pdf.

[34] *See, e.g.*, CSAPR, 76 Fed. Reg. at 48326 ("a state may submit an abbreviated SIP that modifies a final Transport Rule FIP trading program in only a limited way (i.e., by replacing the allowance allocation provisions. . . ."); Proposed CAMR Federal Plan, 71 Fed. Reg. at 77110.

[35] *See, e.g.*, MSWL Federal Plan, 64 Fed. Reg. at 60698 ("for those States that are unable to submit approvable State plans, EPA is strongly encouraging them to request delegation of the Federal plan so that they can have the primary responsibility in their State, consistent with Congress' overarching intent").

complicated design questions, the answers to which will have a significant impact on the ability of advanced energy to contribute to emissions reductions, this paper, and specifically this section, focuses on policy design principles relevant to a rate-based Federal Plan. The discussion does not address every design element, but rather highlights elements of particular importance for advanced energy.

A. Rate-based Trading

EPA has proposed to provide states the option of placing the primary compliance obligations on fossil fuel-fired EGUs, or of designing a plan that relies on obligations on units other than fossil fuel-fired EGUs (a "portfolio approach"). AEE appreciates that EPA has provided states such flexibility and believes that the language of the Clean Air Act and judicial precedent could reasonably be read to allow EPA to similarly implement a portfolio Federal Plan. However, based on EPA's past regulatory actions, this white paper starts from the presumption that EPA's Federal Plan will impose emission reduction obligations solely on affected EGUs, rather than utilize such a portfolio approach.

Because state targets are based on the achievability of significant additions of renewable generation and energy efficiency, a Federal Plan that imposes emission reduction obligations solely on affected EGUs must be written to ensure that the appropriate economic signals are in place to unlock the advanced energy potential contemplated. Fortunately, as we explained in our December 1, 2014 supplemental comments, current electric sector practices demonstrate that owners of EGUs have ample ability to directly invest in zero- and low-emission generation, energy efficiency, and other advanced energy technologies and services. They can also readily procure credits associated with advanced energy investments made by others, in order to offset their units' output and associated emissions. To that end, a Federal Plan that relies on direct regulation of EGUs as its primary compliance mechanism must establish appropriate economic incentives for advanced energy deployment, such as by providing those EGUs the flexibility to use credits from advanced energy production to aid in their compliance. Therefore, to the extent that EPA issues a Federal Plan based on the rate-based state goals proposed in the Clean Power Plan rule, AEE supports a market-based, credit trading approach with the opportunity for EGUs to procure emission reduction credits from advanced energy providers.

B. Quantifying Affected EGU Compliance Obligations and Providing for Trading Among Affected EGUs

Under this approach, EPA first would translate the state's emission rate targets into a set of increasingly stringent compliance milestones (as discussed below in section IV.E.1), and then impose those milestones as prescribed rates for each existing affected EGU.

The second step would be to award credits to any affected EGU that has an emission rate below the prescribed rate for the relevant compliance period.[36] The amount of credits in a given period would equal the difference between the prescribed rate and the emission rate of the affected EGU rate multiplied by the MWh output of the EGU in that period. The resulting credits would be measured in pounds (lbs) of CO_2.

Credit/Deficit = (State Target Rate – Actual EGU Emission Rate) × EGU MWh Output

NOTE: Negative credits constitute a deficit and therefore a need to procure requisite credits.

Figure 1. Credit or Deficit Formula for Affected EGUs

[36] Generation of emission rate credits by affected EGUs *located in non-Federal Plan states* and used for compliance in Federal Plan states will require EPA to develop a clear methodology for determining the appropriate estimated avoided emissions rate to use *for the particular compliance period.*

Conversely, the same formula would determine a credit *deficit* for an affected EGU with an emission rate higher than the prescribed rate. In order to achieve compliance, an affected EGU with a credit deficit could take any of several steps. It could run less frequently, reducing its MWh output. It could reduce its actual emissions rate through a variety of techniques, including heat rate improvements, biomass or natural gas co-firing, or carbon capture and storage. It could obtain credits from another affected EGU that has surplus credits. Or, as discussed in greater detail below, it could obtain credits from zero- or low-emitting generation or energy efficiency and other demand-side resources.

State A in Year X	**NGCC Facility**	**Coal Facility**
State Target: 1300 lbs/MWh	Prescribed Rate: 1300 lbs/MWh Unit Emission Rate: 900 lbs/MWh Credits for Each MWh: Prescribed Rate - Unit Emission Rate = (1300 - 900) lbs = 400 credits generated per MWh of Output	Prescribed Rate: 1300 lbs/MWh Unit Emissions Rate: 2100 lbs/MWh Credits for Each MWh: Prescribed Rate - Unit Emission Rate = (1300 - 2100) lbs = 800 credit deficit per MWh of Output

Figure 2. Illustrative Example of Credit or Deficit Formula for Affected EGUs

In order to minimize the costs of the program, EPA should allow trading to the greatest extent allowed by the Clean Air Act. Averaging or "bubbling" of unit emission rates should be permitted among all units under common ownership within Federal Plan states or between EGUs in states with a state compliance plan with appropriate links to Federal Plan states. For EGUs not under common ownership, the trading of credits should be permitted among EGUs within a single Federal Plan state; among EGUs in different Federal Plan states; and among EGUs in a Federal Plan state and EGUs in a state with a state compliance plan with appropriate links to Federal Plan states.[37] There is substantial regulatory precedent for regulatory trading programs—including those established in the CAIR and CSAPR FIPs and proposed in the CAMR Federal Plan—permitting trading among units in different states. EPA has an even stronger rationale for interstate trading in this instance, given the global pollutant nature of CO_2: a ton of CO_2 emitted from one state will have the same total and distributional environmental impact as a ton emitted from any other state.

C. Issuance of Credits for Zero- and Low-Emitting Generation

AEE has the following recommendations regarding the issuance of credits for renewable energy and other zero- and low-emitting generation resources (other than affected EGUs) under the Federal Plan:

- *Eligible generation resources.* The Federal Plan must specify what types of generation resources are eligible to generate credits that may be used by EGUs in Federal Plan states. AEE understands that the eligibility of *existing zero- and low-emitting generation* will be based on whether EPA considered the contribution from those existing units as part of its BSER formula when setting state-by-state targets. Beyond that, AEE urges EPA to consider a wide range of *new zero- and low-emission generation*, including at least those described in AEE's *Advanced Energy Technologies for Greenhouse Gas*

[37] *See* Jonas Monast et al., Duke Nicholas Institute for Environmental Policy Solutions, *Enhancing Compliance Flexibility under the Clean Power Plan: A Common Elements Approach to Capturing Low-Cost Emissions Reductions,* Policy Brief NI PB 15-01 (March 2015), available at http://nicholasinstitute.duke.edu/sites/default/files/publications/ni_pb_15-01.pdf.

Reduction report, as eligible credit generating options under the Federal Plan.[38] The generation sources in the report include geothermal power, new and uprated hydroelectric power, biomass power, solar power, wind power, natural gas turbines, fuel cells, waste-to-energy, marine power, anaerobic digestion, and nuclear power. The report was designed to demonstrate the breadth of options that states have at their disposal today, so EPA should use the report as a starting point rather as a comprehensive list.

- For these eligible generation resources, EPA should provide individual energy sources a clear and low cost method of certification as "low-emitting" or "zero-emitting" and, therefore, eligible to generate credits. EPA should permit zero- and low-emitting generation resources to obtain certification even if located in non-Federal Plan states, so long as the electric generation from those units is not used to create credits that are used for compliance in other states. While the Tenth Amendment may limit EPA's authority to require certification to be done by a state entity, EPA can recognize existing state certification programs—such as those developed for RPS compliance—as well as private voluntary credit certification programs.

- *Calculation of credit for zero- and low-emitting generation.* Zero- and low-emission generation resources contribute to emission reductions at affected EGUs by displacing generation, and therefore emissions, from those EGUs. The credits generated by zero- and low-emission generation should, therefore, be based on the emissions impact of displacing that generation. There are several methodologies available for calculating and crediting the avoided emissions as discussed in Step 1, below. Credits for this emission reduction should be awarded based on avoided emissions (or, in the case of low-emission generation resources, *net* avoided emissions) and the MWh of generation, as discussed in Step 2.

  Step 1: Calculating Estimated Avoided Emissions. The proposed Clean Power Plan rule identified a number of ways a state could estimate the avoided emission rate,[39] and provided further detail as to these methodologies in its State Plan Considerations technical support document.[40] The most straightforward and predictable estimate of avoided emissions would be based on the prescribed rate for EGUs in the state in which the resource was located for the relevant compliance period (see Section IV.E.1).[41] This approach would be identical to the methodology for calculating emission credits (and obligations) for affected EGUs, as described above. However, it is not the only viable option available to EPA when designing a Federal Plan. Alternate methodologies can account for the fact that advanced energy resources may displace emissions at a higher rate than would be suggested by the prescribed state rate for a given year by using a more precise estimate of avoided emissions. Especially in the short term, these resources may displace higher-than-average-emitting generation resources dispatched at the margin, while over the longer term, they may eliminate new construction of higher-than-average-emitting generation. Moreover, for a state with emissions-intensive generation not included in the calculation of the state's target rate, using the target rate will underestimate the extent

[38] Advanced Energy Economy, *Advanced Energy Technologies for Greenhouse Gas Reduction: 40 Solutions for Cutting Carbon Emissions from Electricity Generation* (May 2014), *available at* http://info.aee.net/epa-advanced-energy-tech-report.
[39] Proposed Rule at 34919-20.
[40] *See* State Plan Considerations TSD at 20-34.
[41] Generation of emission rate credits by zero- and low-emitting resources *located in non-Federal Plan states* and used for compliance in Federal Plan states will require EPA to develop a clear methodology for determining the appropriate estimated avoided emissions rate to use *for the particular compliance period.*

of emissions reductions attributable to advanced energy. Methodologies such as using the average emission rate of the state/region's electric sector, the emission rate of the typical marginal generation resource in a state/region, or a modeled estimate of the marginal emissions rate, are all feasible options with different tradeoffs.

EPA should take into consideration the following principles when designing its crediting methodology:

(1) *Reflect emission reduction benefits.* The methodology should reflect the emission reduction benefits of zero- and low-emitting generation. However, as compared to other pollutants such as hazardous air pollutants, the nature of the climate impacts from CO_2 emissions suggests that it is more important to establish a long-term economic signal for emissions reductions than to precisely estimate every pound of avoided emissions in a given hour, month, or year.
(2) *Align compliance incentives.* The crediting methodology should reflect the emission reduction impact of advanced energy resources over both the short and long terms in order to encourage the development and financing of those resources.
(3) *Maximize predictability.* Providing greater certainty regarding the number of credits that a project will generate can help developers secure financing and allow deployment in areas where resources will be most beneficial, thereby lowering the long-term costs of emission reduction.
(4) *Ensure administrability.* Any system must be relatively easy to administer at low cost to EPA, advanced energy developers, and EGUs so that it is easy and inexpensive to take advantage of the emission reduction potential of zero- and low-emission resources. In addition, it must easily allow trading of credits between states that have different actual and target emission rates.

For any estimate of avoided emissions other than an approach using the state target rate, AEE encourages EPA to use an *a priori* estimate of the emissions displaced (such as using the average emission rate of the system over the previous calendar year) rather than an after-the-fact analysis. While the *a priori* approach would sacrifice some precision as to the exact level of affected EGU emission reductions resulting from any particular MWh of low- or zero-emission generation, it would avoid the delay and uncertainty that would result from an after-the-fact analysis. This would allow zero- and low-emission resources to generate credits as they generate electricity, rather than having to wait until the end of the period for which EPA would calculate the emission rate of the electric system. Doing so would provide more certainty for resources, thereby lowering costs and unlocking additional zero- and low-emission generation.

In addition, some stakeholders argue that the avoided emission rate should be the rate of the state in which the credit is retired rather than the state where the low- or zero-emission resource is located. These stakeholders argue that this approach is necessary to avoid a scenario in which there is an incentive to buy credits from resources in states that have high emission rates because one MWh of zero or low-emission generation from a high emission rate state would generate more credits than one MWh of the same generation type from a state with a low emission rate. Yet, this is an entirely appropriate incentive structure; zero- and low-emission generation from a state with a high emission rate *avoids more emissions.* Accordingly, in a multi-state trading context, it is more reasonable to use

the emission rate of the state where the resource is located as the benchmark for determining the amount of credits than to use the rate of the state where the credit is retired for compliance.

AEE has been analyzing which approach to calculating avoided emissions would reach the optimal balance between precision, aligned compliance incentives, certainty, and administrability. We expect to follow up on this issue after EPA issues a Federal Plan proposal.

Step 2: Calculating Credits. The Federal Plan would then determine the difference between the emissions that would result from generation at the calculated avoided lbs/MWh rate and generation from the zero- or low-emission resource.[42] For zero-emission resources, this would simply be the avoided emission rate (calculated by whatever methodology EPA selects in the final Federal Plan) multiplied by the number of MWhs of generation from that resource. For low-emitting resources—such as new natural gas combined cycle facilities, biomass power, fuel cells powered by natural gas, waste-to-energy, and anaerobic digestion—the emission credit amount would be calculated as the difference between the same calculated avoided emission rate and that compliance entity's actual emission rate, multiplied by the entity's output.

Credits should be available for both metered and non-metered generation resources. Credits generated by metered generation should be based on the number of metered MWhs generated. For distributed generation that is not separately metered, such as for net-metering program participants, additional measurement & verification (M&V) protocols (similar to those in use for demand-side resources, as described below) should be used to determine the amount of energy displaced.[43]

Credits = ([Estimated Avoided Emission Rate] – Actual Generator Emission Rate) × MWh Output

Figure 3. Zero- and Low-Emission Generator Credit Formula

Low-Emission Resource	**Zero-Emission Resource**
[Estimated Avoided Emission Rate]: 1500 lbs/MWh Unit Emission Rate: 200 lbs/MWh Credits for Each MWh: [Estimated Avoided Emission Rate - Unit Emission Rate = (1500 - 200) = 1300 credits generated per MWh of Output	[Estimated Avoided Emission Rate]: 1500 lbs/MWh Unit Emission Rate: 0 lbs/MWh Credits for Each MWh: [Estimated Avoided Emission Rate] - Unit Emission Rate = (1500 - 0) = 1500 credits generated per MWh of Output

Figure 4. Illustrative Example of Zero- and Low-Emissions Generator Credit Formula

[42] Emission credits for at-risk nuclear would be allocated to an existing nuclear unit for each MWh generated by that unit, consistent with the number of MWhs of generation from that unit used to calculate BSER. *See* EPA, GHG Abatement Measures Technical Support Document 4-32 to 4-35.
[43] Widely accepted tools to measure and verify this generation are publicly and commercially available, including the NREL PVWatts model, Sandia National Labs flat plate model, PVSyst, SolarAnywhere® FleetView®, and Homer.

- *Claiming emission reduction credit.* The continuation of existing interstate renewable energy credit (REC) markets and public sector advanced energy financing mechanisms is important to advanced energy financing. Upending those markets risks significant commercial disruption, and may jeopardize the financing and development of the new renewable energy capacity that will be critical for meeting the CPP goals. A key principle of the Federal Plan should be to provide a means of accounting for the contribution of advanced energy to emission reduction benefits without disrupting existing markets. To that end and consistent with prior AEE comments, the Federal Plan should provide that CPP-specific emission reduction credits be issued for any verified generation in an amount consistent with the methodology described above. Credits should be issued directly to any certified zero- or low-emission generator that meets necessary qualification criteria established by the Federal Plan. Those generators should be free to sell their credits to other entities, including but not limited to EGUs in the state that the generator is located in or in other states. In fact, some may have already done so through contract terms selling "all environmental attributes" to third parties. It should be up to the contract parties to ensure that credit is transferred appropriately (supported by a credit tracking registry, as discussed below) after such credits are allocated to the zero- and low-emission generators. In addition, emission reduction credits under the Federal Plan must be a separate commodity from other credits such as RECs.[44] A policy of relying on a new form of credit while honoring existing contracts and state law will ensure that both buyers and sellers have the opportunity to maximize the value of zero- and low-emission generation investments without disturbing existing contracts, and is consistent with the expanding interstate markets for renewable energy attributes. Note that EPA need not be responsible for certification, verification of generation, credit issuance, or tracking of credits. These functions may, instead, be performed by a third party or other entity, such as an independent registry (discussed below).

- *Tracking credit in a registry.* In order to facilitate multi-state credit trading and avoid double-counting, the Federal Plan should recognize one or more registries in which certified zero- and low-emission generators participating in the program submit verified generation data, and for low-emitting generators, emission data. Registries lower transaction costs and prevent double counting by calculating emission credits, placing those credits in a generator's account, and tracking the trading and retirement of those credits. The use of a recognized fee-for-service registry can reduce the administrative burden on both state and Federal governments, and ensure that market participants have access to necessary services on a timely basis. There are currently efforts underway to develop such a registry or to adapt existing registries used for RPS compliance for this purpose.[45] In recognizing the need for a registry, EPA should express a preference for a unified registry that incorporates zero- and low-emission generation credits, as well as demand-side resource credits.

D. Issuance of Credits for Energy Efficiency and Other Demand-Side Resources

Many of the same design principles that apply to crediting zero- and low-emission generation under a rate-based system also apply for crediting energy efficiency and other demand-side resource measures that result in reduced

[44] To the extent that state law links RECs and CPP compliance credits in a way that limits the efficient trading of each type of credit, it will be up to the state to change its law.
[45] See APX Inc. Press Release, The North American Renewables Registry adds functionality to support Clean Power Plan implementation (May 13, 2015), http://www.narecs.com/2015/05/13/the-north-american-renewables-registry-adds-functionality-to-support-clean-power-plan-implementation/.

electricity demand and thus reduced emissions.[46] Below, we highlight some important additional design issues unique to demand-side resources:

- *Eligible types of demand-side resource measures.* The Federal Plan should provide an initial list of eligible demand-side resource measures that may generate credit and a methodology for doing so. AEE urges EPA to consider a wide range of measures, including at least those measures identified by AEE in its *Advanced Energy Technologies for Greenhouse Gas Reduction* report, as eligible credit generating options under the Federal Plan. The solutions in the report include behavioral and operational energy efficiency, demand response, energy service company (ESCO) services, energy storage, and transmission & distribution (T&D) efficiency technologies. The report was designed to demonstrate the breadth of options that states have at their disposal today, so EPA should use the report as a starting point rather as a comprehensive list.

- In its comments in the CPP rulemaking, AEE discussed the important distinction between energy efficiency *projects*—actions taken with a single customer, typically a large building or industrial site—and energy efficiency *programs*—which are typically administered by utilities or state offices and target entire portfolios of buildings (e.g. 4,000 air conditioner replacements in a utility service territory).[47] Both types of measures are important and should be eligible to generate emission reduction credits.

- As with zero- and low-emission generation, EPA should provide individual demand side projects and programs a clear and low cost method of certification as an "energy efficiency measure" or "other demand side measure" and, therefore, eligible to generate credits. EPA should permit projects and programs to obtain certification even if they are located in non-Federal Plan states, so long as the demand reduction from those projects and programs is not used to create credits that are used for compliance in other states. EPA need not perform the certification itself as it can recognize existing state certification programs as well as private voluntary credit certification programs.

- *Calculating and Verifying Energy Savings.* Only verified energy savings should be eligible to generate credits for use by EGUs. EPA need not itself conduct such verification, but must establish guidelines for use in quantifying energy savings, which can in turn be used to ascribe credits. The Federal Plan should provide an initial, non-exclusive list of acceptable protocols to evaluate, measure and verify energy savings from demand-side resources, including energy efficiency projects and programs. As AEE laid out in its comments in the CPP rulemaking, the protocols that apply to energy efficiency programs (EM&V) and the protocols that apply to energy efficiency projects (M&V) may differ.[48] However, rigorous and accepted protocols exist for both, and EPA should draw from international standards, existing state-developed protocols, and industry best practices when developing a non-exclusive list of acceptable protocols. AEE has provided recommendations on which protocols should be eligible, and criteria for inclusion of alternative or additional protocols over time.[49] EPA has committed to publishing

[46] By demand-side resources, AEE means a broad range of measures that reduce emissions at existing power plants by reducing the need for electric generation. These include transmission and distribution measures that reduce line losses, combined heat-and-power projects not located at EGUs, demand response, and others.
[47] For a comparison of energy efficiency projects and energy efficiency programs, *see* Greenhouse Gas Reductions Through Performance Contracting Under EPA's Clean Power Plan 5-6 (Nov. 26, 2014), *available at* http://ajw-inc.com/wp-content/uploads/2014/11/PC-111d-technical-paper-with-appendices.pdf [hereinafter "Performance Contracting Comments"].
[48] Other demand-side resources—such as demand response, energy storage, or transmission & distribution—may require a different set of protocols.
[49] *See* AEE Comments at 58-61 (identifying the Department of Energy Uniform Methods Project; random control-trial based EM&V for behavioral energy efficiency; the International Performance Measurement and Verification Protocol; the Department of Energy's Superior Energy Performance protocol as part of the Energy Management Systems (EnMS) under the ISO 50001 standard; Model Energy Efficiency Program Impact Evaluation Guide issued by the State and Local Energy Efficiency (SEE) Action Network;

EM&V guidance. This guidance should inform EPA's approach to EM&V and M&V in its Federal Plan, and should establish rules to ensure that there is not double counting. As a general principle, EM&V should provide reasonable confidence in energy savings, but should not be so onerous as to become a disincentive to deploying energy efficiency as a resource. States and advanced energy businesses alike need to know that the types of protocols that are widely used and respected today within the industry and across the states can be incorporated into state implementation plans. EPA's guidance, and its approach in the Federal Plan, should be written to allow and encourage innovation in analytical tools, such as recent advances that are already helping reduce the reporting burden, increasing the precision, and assisting with cost-effectiveness and scalability of EM&V.

- *Calculation of credit.* For any certified resource, all verified savings should be eligible for submission to a national registry. Those energy savings can then be converted into emission reduction credits, which can be transferred and used by individual EGUs for compliance. As with zero- and low-emission generation, AEE supports the use of simple approaches that can be easily administered by both EPA and the demand-side resource providers. The calculation methodology for emission reduction credits from energy savings should be identical to the calculation of emission reduction credits from zero- and low-emission energy. To that end, the principles that EPA should use when selecting a calculation methodology discussed above apply equally for the calculation and use of emission reduction credits from energy efficiency. In the Clean Power Plan, EPA has proposed to provide only partial credit to demand-side resource measures that occur in states that are net-energy exporters. As AEE indicated in its December 1, 2014 comments, such a policy will undervalue the emission reduction contribution of demand-side resources and result in underinvestment in such resources. To the extent the final rule permits, the Federal Plan should fully credit the avoided emissions due to demand-side resources in both net-exporting and net-importing states.

Credits = [Estimated Avoided Emission Rate] × MWh Energy Savings

Figure 5. Demand-side Resource Credit Formula

Estimated Avoided Emission Rate: 1500 lbs/MWh

Credits for Each MWh of Savings:
1500 lbs credit generated per MWh of Energy Savings

Figure 6. Illustrative Example of Demand-side Resource Credit Formula

- *Claiming emission reduction credit.* For energy efficiency and other demand-side resources, determining which entity should be responsible for submission of energy savings into a registry and eligible to receive any associated emission reduction credit may depend on the type of energy savings program or project. EPA need not establish a uniform rule for all energy savings and demand-side

ASHRAE Guideline 14-2002 Measurement of Energy and Demand Savings; and, Technical Reference Manuals (TRMs) developed and/or adopted by states, utilities and regional bodies. *See also* Performance Contracting Comments at 31-33; National Association of Clean Air Agencies, National Association of Regulatory Utility Commissions & National Association of State Energy Officials, *Principles for Including Energy Efficiency in 111(d) of the Clean Air Act* (May 12, 2014), https://www.naseo.org/Data/Sites/1/principles_3n_2014.pdf.

resources. However, when making a determination on the appropriate entity to receive credits for a given project type, EPA should ensure that the program is administrable; that it minimizes transaction costs, such as by minimizing the number of entities responsible for submission; and that it aligns incentives such that the credits flow to the entity that can make the decision to implement or purchase the energy savings. In any case, EPA should allow the free trade of those credits, including across state lines.

- *Tracking in a registry*. EPA should develop or endorse one or more registries that track emission reduction credits generated from eligible demand-side resources. Efforts are currently underway to establish registries covering demand-side resource and generation projects.[50,51] Certified efficiency projects and programs can submit verified generation into the registry, which can then calculate emission credits and place those credits in the appropriate program or project account. To the extent feasible, any registry that tracks credits generated by demand-side resources should either be unified with or interconnected with registries tracking credits for zero- and low-emission generation resources. A national, unified registry will help lower transaction costs and prevent double counting.

E. Additional Plan Design Issues

1. Compliance Milestones

In its proposed Clean Power Plan, EPA established long-term emission rate targets for each state: an Interim Goal that must be met over the 10-year 2020-2029 period and a Final Goal that must be met on a three year average starting in 2030. EPA proposed to provide states significant flexibility as to the specific trajectory of unit-by-unit emission reduction obligations. For those states that do not submit a satisfactory plan, however, EPA cannot rely on state policy judgment and must itself establish specific emission reduction requirements for affected EGUs.

To provide some level of predictability and assure that units make progress toward the Interim and Final goals, AEE recommends that the Federal Plan establish increasingly stringent emission rate milestones for affected EGUs in each state. In determining the most appropriate pathway for these emission rate milestones, EPA should strive to balance predictability and flexibility.

An effective pathway for these emission rate milestones would ensure predictable and continual emissions reductions over time such that a clear long-term economic signal is established to stimulate compliance investments. At the same time, the pathway should provide EGU owners and operators the flexibility to plan emission reduction activity that is most effective for their particular circumstances (e.g., some EGUs may need to make multiyear investments to implement optimal emission reduction efforts).

It is important to note that a defined set of milestones does not necessitate annual EGU compliance targets. In fact, one way to ensure planning flexibility without sacrificing the certainty and predictability of the targets or diluting the economic signal would be to authorize short multi-year compliance periods (i.e., demonstrations that a unit has met its goal on average over a certain number of prior years). EPA should also authorize banking

[50] See APX Inc. Press Release, The North American Renewables Registry adds functionality to support Clean Power Plan implementation (May 13, 2015), http://www.narecs.com/2015/05/13/the-north-american-renewables-registry-adds-functionality-to-support-clean-power-plan-implementation/.
[51] *See* The Climate Registry, Establishing an energy efficiency registry as a tool for state compliance under U.S. EPA's Clean Power Plan (Sept. 22, 2014), http://www.theclimateregistry.org/wp-content/uploads/2014/12/TCR_An-EE-Registry.pdf.

of credits by affected EGUs during the interim and final compliance periods to encourage earlier emission reductions and give advanced energy technologies a jump-start through near-term deployment.

2. Early Action

Under the Clean Power Plan as proposed, state plans would not be permitted to take into account emission reductions generated prior to 2020 by measures implemented between 2014 and 2019. As AEE identified in its December 1, 2014 comments, this policy risks actively discouraging investment in advanced energy technologies prior to 2020. To the extent EPA provides states flexibility to address this in their compliance plans, EPA's Federal Plan should also include policies that counteract any incentives to delay action created by a 2020 compliance start date.

Consistent with our December 1 comments, AEE encourages the Federal Plan to incorporate a policy that allows advanced energy providers to generate and bank emission reduction credits for new, additional actions that result in emission reductions achieved from June 2014 through 2019.

EPA has created banking programs in past rulemakings. For example, in its NO_X SIP Call, EPA clearly provided states with a mechanism to allow a source that reduced emissions before the May 1, 2003 compliance start date to generate early reduction credits (ERCs).[52] ERCs were then usable to offset emissions during the compliance period. EPA also included banking provisions in its proposed FIP to serve as a backstop for the NO_X SIP call.[53] While the details of an emission reduction credit banking option may vary from these examples, some form of early action credits for *additional* emission reductions, including those achieved through new advanced energy projects, is an important design principle to guide any Federal Plan.

3. Abbreviated State Plans

Even if a state is unable or unwilling to tackle all the core issues of a compliance plan, it may nonetheless have the capability or will to address specific policy design issues in a way that best fits the needs of the state. In addition, states may have the flexibility to address policy design issues that the Federal Plan does not specifically address. Consistent with past practice,[54] EPA should allow states to submit an abbreviated state plan that contains targeted modifications of the Federal Plan rather than a wholesale replacement of it. Abbreviated state plans could include:

- revision to unit-by-unit emission reduction obligations;
- revision to unit emission reduction milestones, consistent with meeting the state's interim and final goals;
- provisions for the inclusion of otherwise unaffected units;
- additional eligible types of advanced energy measures and associated emission reduction calculation methodologies and verification protocols; and
- complementary policies, such as renewable portfolio standards or energy efficiency resource standards.

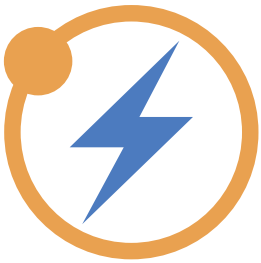
Any such abbreviated plan submission would need to be reviewed by EPA, and approved only if EPA finds that the abbreviated state plan, in conjunction with the remaining elements of the Federal Plan applicable in the state, will meet the state goals and otherwise satisfy the requirements for state plan approval.

[52] Robert A. Wyman Jr. & Janda D. R. Kuhnert, Regional SIP Issues, in The Clean Air Act Handbook 116 (Robert J. Martineau & David P. Novello eds., 2nd ed. 2004).
[53] *Id*. at 118.
[54] *See* CAIR FIP, 71 Fed. Reg. 25,328; CSAPR, 76 Fed. Reg. 48208; *see also* Proposed CAMR Federal Plan, 71 Fed. Reg. at 77104.

V. Conclusion

As a national organization of businesses making the energy we use secure, clean, and affordable, AEE believes that a properly designed Federal Plan can help those states that are not able to submit a compliance plan move toward a higher performing energy system for the 21st century. In addition to providing a backstop where a state does not submit a satisfactory plan, the Federal Plan can serve as guidance to states in developing their own plans, and as a temporary or partial plan where state plan development may be delayed or may not address all issues.

The Federal Plan, like any state plan, can best achieve the goals of the Clean Power Plan by harnessing the vast potential of advanced energy to improve reliability, increase flexibility, and produce energy savings, as well as reduce emissions. Certain plan designs would optimize use of advanced energy, while other designs might fail to take full advantage of advanced energy resources. Utilizing the design principles put forth in this paper will allow the Federal Plan to leverage advanced energy for maximum benefit.



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