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When Less is More: An Energy Efficiency Set-Aside as a Leakage Mitigation Strategy Under the Clean Power Plan

A White Paper of the University of Oregon School of Law

Environmental and Natural Resources Law Center

Prepared by ENR Bowerman Fellow Ariel Stavitsky

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1515 Agate Street

Eugene, Oregon 97403

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About this Paper

This white paper was created through the University of Oregon Environmental and Natural Resources Law (ENR) Center's Energy Law and Policy Project, an interdisciplinary research project focused on exploring innovative law and policy that promote a green energy future.

About the Author

The author of this white paper is ENR Bowerman Fellow Ariel Stavitsky. At the time this paper was published, Ariel was a rising 3L at the University of Oregon School of Law.

ENR Directors and Staff

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The Energy Law and Policy Project is one of seven theme-based, interdisciplinary research projects administered by the University of Oregon ENR Center. The Project is led by faculty

leaders Adell Amos and Roberta Mann. The mission of the Energy Law and Policy Project is to explore innovative law and policy to promote a green energy future. Important issues the Project has recently explored include the following: obstacles and solutions for energy storage; the scope of the Oregon Public Utilities Commission's enabling authority as related to clean energy modes of production; and opportunities, limitations, and the latest trends regarding the Environmental Protection Agency and the states' use of its authority under Section 111(d) of the Clean Air Act to regulate sources of greenhouse gas emissions.

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For media inquiries contact Emily Knobbe at eknobbe@uoregon.edu

I. Introduction

On August 3, 2015, President Obama and the United States Environmental Protection Agency (EPA) Administrator Gina McCarthy unveiled the final Clean Power Plan (CPP or the Plan), the Obama administration's "historic step" toward combatting anthropogenic climate change.[1] The Plan sets the first national carbon pollution standards for existing power plants across the U.S.,[2] which account for approximately 40% of U.S. carbon dioxide (CO_2) emissions.[3] With these standards, the EPA aims to reduce U.S. carbon dioxide emissions from 2005 levels by 32% by 2030.[4] The power sector is the largest contributor to U.S. carbon emissions[5] and is the specific target of the CPP.

Recently, however, a closely divided U.S. Supreme Court halted this progress when it granted an unprecedented emergency stay of the CPP on February 9, 2016.[6] Speculation abounds as to the Plan's future: how the Court's stay bodes for the ultimate ruling on the Plan's merits; how the Court seat left vacant by Justice Scalia may affect the Plan's prospects[7]; and, relevant here, whether and how in the meantime states should move forward with CPP compliance.

While the legal battle over the CPP continues in the courts, the uncertainty raised by the stay may offer a silver lining. With oral arguments addressing the merits of the CPP before an en banc D.C. Circuit now scheduled for late September,[8] the challenge is unlikely to

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[1] Press release, The White House, Office of the Press Secretary Fact Sheet: President Obama to Announce Historic Carbon Pollution Standards for Power Plants (Aug. 3, 2015), https://www.whitehouse.gov/the-press-office/2015/08/03/fact-sheet-president-obama-announce-historic-carbon-pollution-standards.

[2] President Obama's Plan to Fight Climate Change, The White House (June 25, 2013), https://www.whitehouse.gov/share/climate-action-plan.

[3] Union of Concerned Scientists, The Clean Power Plan: A Climate Game Changer, http://www.ucsusa.org/our-work/global-warming/reduce-emissions/what-is-the-clean-power-plan#.Vw6iZEaaI1p (last visited Apr. 13, 2016).

[4] President Obama's Plan to Fight Climate Change, *supra* note 2.

[5] *Id.*; U.S. Department of State, 2016 Second Biennial Report of the United States of America Under the United Nations Framework Convention on Climate Change (2016), http://unfccc.int/national_reports/biennial_reports_and_iar/submitted_biennial_reports/items/7550.php.

[6] Order in Pending Case, *West Virginia v. EPA*, 577 U.S. ___ (Feb. 9, 2016), http://www.supremecourt.gov/orders/courtorders/020916zr_21p3.pdf; *see also* Adam Liptak & Coral Davenport, *Supreme Court Deals Blow to Obama's Efforts to Regulate Coal Emissions*, N.Y. TIMES, Feb. 10, 2016, at A1. For more on the stay, see Jonathan H. Adler, *Placing the Clean Power Plan in Context*, WASH. POST (Feb. 10, 2016), https://www.washingtonpost.com/news/volokh-conspiracy/wp/2016/02/10/placing-the-clean-power-plan-in-context/.

[7] Robinson Meyer, *Will a Reconfigured Supreme Court Help Obama's Clean-Power Plan Survive?*, THE ATLANTIC, February 14, 2016, http://www.theatlantic.com/politics/archive/2016/02/antonin-scalia-clean-power-plan-obama-climate-change/462807/

[8] Ellen M. Gilmer, *Clean Power Plan: Court Decides to Bypass Panel, Delays Arguments Until*

make its way back to the Supreme Court until 2018 at the very earliest.[9] Still, at the time of publication, approximately half of the forty seven states affected by the CPP had issued statements suggesting intent to continue with the CPP compliance planning process.[10] These states now have an extended timeline under which to comply with the Plan, a result of which is that states can now more thoroughly research, model, and formulate their state compliance plans.

With the authority endowed by § 111(d) of the Clean Air Act (CAA),[11] the EPA, through the CPP, aims to reduce carbon pollution from existing fossil fuel-fired power plants, or electric generating units (EGUs).[12] To do so, the Plan sets CO_2 emissions performance rates for existing EGUs, establishes state-specific rate- and mass-based emission reduction goals, and requires states with affected plants to develop and submit compliance implementation plans setting emissions standards for affected EGUs.[13] States have many options by which to achieve compliance with the Plan.[14]

One such option, a state mass-based CO_2 emission cap that is applied only to existing EGUs, requires an additional showing to the EPA—that the state's compliance plan somehow account for the potential for emission leakage.[15] Emission leakage occurs when energy generation and subsequent CO_2 emissions are shifted away from existing, regulated sources to new, unregulated sources.[16]

Under the CPP final rule, one way mass-based states can mitigate leakage is by reserving, or setting aside, a percentage of CO_2 allowances for verified delivery of demand-side energy efficiency (EE).[17] Energy efficiency, the act of using less energy to produce an equivalent result, provides extensive benefits: additional marginal emission reductions, lower

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Fall, E&E PUBLISHING, LLC (May 16, 2016), http://www.eenews.net/stories/1060037342.

[9] Inara Scott, Comments at The Clean Power Plan in Flux: The current status of state implementation and strategies for moving forward Panel, 2016 University of Oregon Public Interest Environmental Law Conference (Mar. 4, 2016).

[10] For an up-to-date summary of state positions on CPP compliance, see *Supreme Court Stay Response*, E&E's Power Plan Hub, E&E PUBLISHING, LLC, http://www.eenews.net/interactive/clean_power_plan#planning_status_chart (last visited Mar. 10, 2016).

[11] 42 U.S.C. § 7401 et seq. (1970).

[12] *Fact Sheet: Overview of the Clean Power Plan*, US EPA (Aug. 6, 2015), *available at* http://www2.epa.gov/cleanpowerplan/fact-sheet-overview-clean-power-plan. Note, however, that new emission sources are regulated, under § 111(b) of the CAA. CAA, *supra* note 11.

[13] Clean Power Plan, 80 Fed. Reg. 64661, 64664 (Oct. 23, 2015) (to be codified at 40 C.F.R. pt. 60) [hereinafter CPP].

[14] *Id.* at 64665-66.

[15] *Id.* at 64887.

[16] Proposed Federal Plan for the Clean Power Plan, 80 Fed. Reg. 64966, 64977 (Oct. 23, 2015) (to be codified at 40 C.F.R. Pts. 60, 62, 78) [hereinafter Federal Plan]; *see infra* Part I.

[17] CPP, *supra* note 13, at 64889; *Energy Efficiency and Evaluation, Measurement and Verification in State Plans*, EPA Webinar (Jan. 14, 2016), https://www.epa.gov/cleanpowerplantoolbox/epa-webinar-energy-efficiency-and-emv. The CPP refers specifically to "demand-side EE." This paper will use "EE" generally to refer to demand-side EE.

energy costs and rates, higher consumer satisfaction, economic development, job creation, and a more reliable energy grid.[18] Further, an EE set-aside would be relatively straightforward to structure, as many of its eligibility and documentation requirements could borrow from analogous EE provisions elsewhere in the CPP.[19]

Section 111(d) of the CAA tasks each state with developing a State Implementation Plan (SIP) demonstrating to the EPA how the state will achieve its EPA-assigned emission goals.[20] Along with the CPP final rule, the EPA released a Proposed Federal Plan (Federal Plan) for the CPP.[21] This plan serves as a model rule that states can either adopt in its entirety or tailor to their own needs in developing their SIPs.[22] If a state chooses to adopt the rule provisions as outlined in the Federal Plan, the approach is presumptively approvable by the EPA.[23] Presumptively approvable SIPs are of great value for states, as they provide increased administrative and technical simplicity and certainty moving forward,[24] thereby affording the state better interstate trading prospects and more time to focus on enforcement. Additionally, in any state that fails to submit an approvable SIP, the EPA would implement its Federal Plan.[25]

Given the EE set-aside's myriad benefits, it comes as no surprise the CPP final rule allows for such an approach. However, the EE set-aside is not included as a presumptively approvable option in the proposed Federal Plan. The Federal Plan is structured such that only set-asides based on historical generation, or "output," and/or for renewable energy (RE) resources are presumptively approvable.[26] The EPA has not provided insight as to why the EE set-aside was omitted from the Federal Plan. Further, there is little consistency in the treatment of EE elsewhere in the Federal Plan—in some provisions, EE is kept in; in others it is omitted.[27] Stranger still, in another respect, the Federal Plan goes even farther than the final rule by providing positive examples of other EE set-asides it deems have been "successful."[28]

The omission of the EE set-aside in the Federal Plan is inconsistent with the broader goals of the CPP. Energy efficiency not only has the potential to

[18] *See infra* Part II.A.
[19] *See infra* Part II.C.
[20] CPP, *supra* note 13, at 64820.
[21] *See* Federal Plan, *supra* note 16.
[22] *Id.* at 64966.
[23] *Id.* at 64969.
[24] CPP, *supra* note 13, at 64833.
[25] Federal Plan, *supra* note 16, at 64968. Note the dual function of the Proposed Federal Plan. It serves as both a presumptively approvable model for states to use in implementing their own SIPs and a federally-enforceable compliance plan for states to either voluntarily adopt in its entirety or become subject to if a state fail to submit an approvable SIP. Because this paper concerns primarily the inclusion of EE set-aside within the document itself, it will simply refer to the Federal Plan generally, without reference to its application.
[26] CPP, *supra* note 13, at 65022.
[27] *See infra* Part III.
[28] *See infra* Part III.

reduce more emissions than an RE set-aside alone, but also offers additional energy and non-energy benefits unique to EE. This paper aims to highlight and better understand the inconsistencies in the treatment of EE between the CPP final rule and the proposed Federal Plan. Section II will outline the regulatory framework of the CPP and the Federal Plan's requirement that state compliance plans account for emission leakage. Section III will discuss the EE set-aside: its potential to mitigate leakage and additional benefits provided. Lastly, section IV highlights and attempts to reconcile the inconsistencies in the treatment of EE, and specifically the EE set-aside, between the CPP final rule and Federal Plan with the hope of addressing the EPA's concerns to allow for the adoption of a presumptively approvable EE set-aside in the future, final Federal Plan.

II. The Anatomy of the Clean Power Plan

The CPP is structured to provide states "substantial flexibility and latitude" to achieve compliance with the plan.[29] In addition to the choice between implementing either the Federal Plan or its own SIP, each state affected by the CPP must elect to operate under either a rate- or mass-based emissions goal.[30]

Myriad factors will inform a state's decision regarding which compliance pathway to pursue, including political climates, energy resource mixes, differing demographic populations, etc. As multi-state trading is a significant aspect of the plan, neighboring states' compliance commitments also become important: rate-based states can trade only with rate-based states and vice versa.[31]

In a rate-based system, generally, compliance is demonstrated based on the average CO_2 emission rate for affected EGUs.[32] This rate can be offset by emission rate credits (ERCs) held by the generator.[33] ERCs can be credited in a number of ways, including for RE generation, nuclear energy, and, at least as stated in the final CPP rule, EE.[34]

Under a mass-based system, a state's total allowed emissions are capped.[35] A state then issues a correlative amount of CO_2 allowances and distributes these allowances to affected EGUs through a distribution, or allocation, system of its own choosing.[36] To demonstrate compliance, each affected EGU surrenders to the state a number of CO_2 allowances equal to their reported

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[29] CPP, *supra* note 13, at 64663.
[30] *Id.* at 64835. This conjecture assumes the final Federal Plan will include both mass- and rate-based compliance schemes. *See* Federal Plan, *supra* note 16, at 64968 ("Under this proposed rule, a federal plan promulgated for a particular state would take the form of either the mass-based model trading rule or the rate-based model trading rule.").
[31] CPP, *supra* note 13, at 64841.
[32] *Id.* at 64833-34.
[33] *Id.* at 64894.
[34] *Id.* at 64895. Whether EE is eligible for ERC issuance is discussed further in Part III of this paper.
[35] *Id.* at 64834.
[36] *Id.*

emissions.[37] States embracing a mass-based system can also choose to take a business-as-usual, or what the CPP terms "state measures," approach to compliance, which allows a state to meet its emissions goal not through a federally prescribed regime, but by whichever strategy or strategies it sees fit or may already have been pursuing.[38]

A mass-based compliance approach is arguably more intuitive and straightforward. There, the emissions cap is enforced through the matching of allowances to unit stack emissions directly at the affected EGUs.[39] Compliance is simply measured and recorded at the stack. This ease of compliance documentation is reflected in lower projected administrative costs. The EPA estimates that by 2030, nationwide, a mass-based approach will be significantly less expensive than a rate-based approach — $5.1 billion compared to $8.4 billion.[40]

States choosing to adopt a mass-based approach must then decide whether to operate under either a cap that applies only to emissions from existing EGUs or a higher cap intended to include both existing and new EGUs.[41] In the latter scheme, a state's total mass budget comprises its mass-based goal for existing sources *and* its "new source complement," which accounts for emissions from new sources.[42] In other words, states can attempt to achieve their CPP emission reduction goal by covering only existing EGUs or both existing and new EGUs.[43]

A drawback of adopting a new source complement, however, is its potential to stifle future energy development and economic growth. Because all future generation must fit under the expanded new source compliment mass cap. Additionally, from a regulatory policy standpoint, it may be redundant to cover new EGUs under the CPP, as they are already regulated under § 111(b) of the CAA.[44]

III. Accounting for Leakage Under the Clean Power Plan

The CPP requires states adopting mass-based plans that cover only existing

[37] *Id.* at 64834-35.
[38] *Id.* at 64827, 64835-37. A state measures approach also requires a "backstop" of federally enforceable standards, contained in the Federal Plan, which would be triggered if the state measures employed fail to achieve the required emission reductions.
[39] *Id.* at 64971.
[40] *State Plans: More State Options, Lower Costs*, EPA (Aug. 5, 2015), https://www.epa.gov/sites/production/files/2015-08/documents/flow_chart_v6_aug5.pdf.
[41] CPP, *supra* note 13, at 64888.
[42] *Id.* at 64834-35, 64888. Each state's respective CO_2 emissions goal and new source complement is provided in Table 14, at 64888.
[43] For a discussion on the potential *benefits* of adopting the new source complement, see Sarah Adair & David Hoppock, *New Sources and the Clean Power Plan: Considerations for Mass-Based Plans,* Duke Nicholas Institute for Environmental Policy Solutions 11 (Dec. 2015) ("Some states or stakeholders may perceive that covering new sources imposes risk by limiting total future emissions, but doing so will likely increase electricity markets' efficiency, states' flexibility in allowance allocation, and emissions integrity, and it may increase the supply of allowances for existing sources.").
[44] CAA, *supra* note 13.

EGUs to somehow account for the potential for emission leakage.[45] Emission leakage refers to increases in production and associated emissions among unregulated producers that occur as a direct consequence of incomplete regulation.[46] Where regulation is imposed on some entities, but not on other comparable entities, the misaligned incentive can lead unaffected entities to pick up the slack of those affected entities.[47] This effect in turn threatens to jeopardize the overall efficacy of the regulatory regime.

Leakage can manifest within the CPP framework in two ways.[48] First, a potential exists for leakage generation shifts to occur across state lines.[49] This geographic leakage could occur where incentive differentials emerge when neighboring states implement different plans but share one electric grid.[50] The EPA is less concerned with geographic leakage, largely because the rule has been structured to prevent or minimize this effect.[51] Examples of these safeguards include restrictions on interstate trading, the differing nature of the respective emission performance rates for each state, and the megawatt hour-accounting method for adjusting the emission rates of affected EGUs under rate-based plans.[52]

The second and more worrisome form of emission leakage is anticipated specifically within mass-based plans covering only existing sources.[53] This type of leakage occurs intrastate and arises if generation is shifted from regulated, existing EGUs to unregulated, new EGUs.[54] Because new sources could operate freely outside of the mass cap (when no new source complement is adopted), the mass-based limit would no longer be accurately reflected or necessarily met via the CO_2 allowance system.[55] In such a situation, a perverse incentive will emerge for energy generation to be shifted to the unregulated sources which could simply avoid the restrictions of the CPP and render the entire cap meaningless. Moreover, affected EGUs in states that allocate allowances based on historical generation are even further incentivized

[45] CPP, *supra* note 13, at 64845, 64887-90.
[46] Meredith Fowlie, *Incomplete Environmental Regulation, Imperfect Competition, and Emissions Leakage,* 1 AMERICAN ECONOMIC JOURNAL: ECONOMIC POLICY 72, 1-2 (2009).
[47] *Id.* at 2.
[48] CPP, *supra* note 13, at 64890.
[49] *Id.*
[50] *Id.*
[51] *Id.* at 64890, 64911; Conference Call, Clean Power Plan Technical Call, Co-sponsored by the National Association of Clean Air Agencies (NACAA) (Oct. 15, 2015).
[52] CPP, *supra* note 13, at 64890.
[53] A business-as-usual state measures plan operating under an existing source only mass cap will likewise have to mitigate the potential for leakage. CPP, *supra* note 13, at 64836; *see also* State Plans: More State Options, Lower Costs, *supra* note 40 (illustrating that state measures plans require "[d]emonstration to [a]ddress [p]otential [l]eakage.").
[54] CPP, *supra* note 13, at 64823; David Doniger, *Understanding the EPA's Clean Power Plan*, NATIONAL RESOURCES DEFENSE COUNSEL STAFF ATTORNEY BLOG (Aug. 11, 2015), http://switchboard.nrdc.org/blogs/ddoniger/understanding_the_epas_clean_p.html.
55 Memorandum from the EPA to Docket EPA-HQ-OAR-2015-0199, Allowance Allocation Proposed Rule Technical Support Document 8 (Aug. 2015), http://www.epa.gov/sites/production/files/2015-11/documents/tsd-fp-allowance-allocations.pdf.

to ramp down operations, since reduced generation would result, at least during the first compliance period, in a windfall of allowances which could then be banked or sold. The EPA anticipates the potential for generation to shift to newly constructed natural gas combined cycle power plants (NGCCs) as they represent the most competitive CO_2-emitting electricity generation technology available today.[56] Thus, a mass-based compliance scheme covering only existing NGCCs will be inherently flawed if it fails to mitigate leakage.

Rate-based compliance systems pose little to no risk of leakage.[57] States operating under a rate-based system have little incentive to shift generation from existing to new EGUs, since generation from new units does not produce ERCs to help existing fleet units comply with rate-based targets. Conversely, generation from existing NGCCs does create emission rate credits, which serves to disincentivize the leakage shift.

In its final CPP rule, the EPA identified three ways mass-based states can minimize the risk of leakage to new sources.[58] First, a state can simply adopt a mass cap that covers both existing and new EGUs, either by adopting the new source complement (in which case leakage mitigation is presumptively approved) or by regulating new EGUs under state law.[59] Second, a state can address leakage through its CO_2 allowance allocation scheme, either by adopting the allowance allocation methods recommended by the EPA in the Federal Plan (again, presumptively approved) or by proposing its own allocation approach so long as the approach "provide[s] sufficient incentive to counteract potential emission leakage."[60] Third, a state can devise its own, non-presumptively approvable methodology to mitigate leakage, provided it can demonstrate leakage is unlikely to occur "as a result of unique factors, such as the presence of existing state policies addressing emission leakage or unique characteristics of the state and its power sector," supported by "credible analysis."[61]

The EPA has not provided a hard and fast standard or any specific criteria by which to gauge the sufficiency of a non-presumptively approvable leakage mitigation showing. Instead, the EPA has suggested that the standard for what constitutes a sufficient mitigation strategy will be judged on a case-by-case basis and may vary from state to state.[62] The EPA has stressed that leakage mitigation in state compliance plans should focus on policy measures intended to realign the

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[56] *Id.*
[57] Federal Plan, *supra* note 16, at 64978.
[58] CPP, *supra* note 13, at 64888.
[59] *Id.* Because regulating new EGUs would in many ways be functionally equivalent to adopting the new source complement, this approach shares the policy implications discussed *supra* in Part I.A, arguably with even more regulatory redundancy and potential for political pushback.
[60] *Id*. at 64889-90.
[61] *Id*. EPA has not provided instruction as to what constitutes "credible analysis."
[62] Clean Power Plan Technical Call, *supra* note 51.

disparate incentives that drive leakage shifts in generation. That is, the leakage showing is a "plan design requirement."[63] Ongoing monitoring or post-implementation submissions to the EPA demonstrating that leakage is not occurring are not required; however, the agency noted dispatch modeling may be useful in the planning stage for states to evaluate and compare different mitigation strategies.[64]

Still, the uncertainty brought about by the lack of a discrete sufficiency standard may steer states toward choosing a presumptively approvable leakage mitigation option. If a state declines to adopt the new source complement, option one above is unavailable. Thus, the best approach for many mass-based states is likely the adoption of an allocation approach.

Under the second option outlined above, a state adopts the EPA's presumptively approvable proposed allowance allocation scheme as provided in the proposed Federal Plan.[65] This approach, as prescribed by the CPP final rule, would employ CO_2 allowance set-asides.[66]

A set-aside is a pool of allowances not distributed through a primary allocation approach but instead allocated to incentivize a defined activity or set of activities.[67] The CPP final rule explains that the Federal Plan provides for two set-asides: updating output-based allocations and an allowance set-aside for RE.[68] Most importantly, in the final rule's discussion of the RE set-aside, the EPA expressly states: "[a] set-aside can *also* be allocated to providers of *demand-side EE, or to both RE and demand-side EE*."[69]

Any discussion of the EE set-aside thus first requires an understanding of the RE set-aside, since the two are largely linked in the CPP final rule[70] and could function in much the same way. With an RE set-aside, as provided in the Federal Plan, 5% of a state's total CO_2 allowances would be distributed to developers of RE projects based on their projected generation from eligible RE capacity.[71] The allowances would then be distributed based on the projection of RE to be provided.[72] The RE set-side serves to mitigate leakage by reducing the marginal cost of production of clean energy technologies within the state, thereby aligning the incentives to generate with those of new, unaffected EGUs.[73]

As mentioned above, in rate-based systems, ERCs can be generated by eligible RE projects, [74] and specific

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[63] CPP, *supra* note 13, at 64889-90.
[64] *Id.*
[65] *Id.* at 64889.
[66] *Id.*
[67] Julie DeMeester & Sarah Adair, *EPA's Clean Power Plan: Understanding and Evaluating the Proposed Federal Plan and Model Rules* 45 ENVTL. L. REPORTER 11155, 11158 (Dec. 2015).
[68] *Id.*
[69] CPP, *supra* note 13, at 64890 (emphasis added).
[70] Federal Plan, *supra* note 16, at 65022.
[71] *Id.*
[72] *Id.*
[73] *Id.*
[74] CPP, *supra* note 13, at 64895; Federal Plan, *supra* note 16, at 64999.

eligibility requirements for such projects are outlined in the final rule.[75]

The same RE measures are eligible to receive RE set-aside allowances under a mass-based plan as would be eligible for ERC issuance under a rate-based plan.[76] However, evaluation, measurement, and verification (EM&V) requirements for the RE set-aside would differ from those prescribed for rate-based ERC issuance, primarily because the set-aside relies on projections *prior* to generation rather than the post-generation metered data.[77] As such, the Federal Plan outlines specific EM&V requirements for the RE set-aside, distinct from those required for ERC issuance.[78]

IV. The Energy Efficiency Set-Aside

A. Energy Efficiency, Generally

Energy efficiency is distinct from energy conservation. Whereas conservation entails changing consumer behavior to use less energy, EE accomplishes a consumptive objective—e.g., heating a room to a certain temperature—while using less energy.[79] Hence, EE is not only theoretically attractive but also realistically feasible, as consumers need not go without.

EE can be procured through residential, commercial, and industrial energy use.[80] A comprehensive EE strategy would target all three sectors, as well as promote the use of energy efficient end-use technologies like appliances and electronics.[81] An array of strategies can be used to implement EE programs, including financial incentives like rebates and loans, technical services such as audits and retrofits, and educational campaigns that highlight the benefits of EE improvements.[82]

This wide breadth of EE measures supports an almost boundless supply of technologically accessible EE. The only limit to EE's vast potential is the economic viability, referred to as the cost-effectiveness, of the resource. As defined by the EPA, cost-effectiveness in its simplest form is the measure of whether an EE investment's benefits exceed its costs.[83] There exist multiple tests with numerous variations for evaluating cost-effectiveness, and a comprehensive cost-effectiveness analysis typically requires the utilization of an amalgam of multiple tests.[84] Each

[75] CPP, *supra* note 13, at 64896-99.
[76] Federal Plan, *supra* note 16*,* at 65023.
[77] *Id.* Energy Efficiency EM&V methodology for ERC issuance is discussed further below, in Part II.C.ii.
[78] *Id.* at 65024.
[79] NATIONAL ACADEMY OF SCIENCES, REAL PROSPECTS FOR ENERGY EFFICIENCY IN THE UNITED STATES ix, 21 n.1 (2010).
[80] Lincoln Davies et al., ENERGY LAW AND POLICY161 (1st ed. 2014).
[81] *Id.*
[82] *Demand-Side Energy Efficiency Technical Support Document*, EPA 2 (Aug. 2015), https://www.epa.gov/sites/production/files/2015-11/documents/tsd-cpp-demand-side-ee.pdf.
[83] *Understanding Cost-Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers*, National Action Plan for Energy Efficiency, Regulatory Assistance Project, EPA 15 (2008), https://www.epa.gov/sites/production/files/2015-08/documents/cost-effectiveness.pdf.
[84] *Id.* at 21, 23.

state's EE program typically employs related but unique cost-effectiveness analyses and standards.[85] Though exact quantification methods vary, cost-effectiveness analysis remains the principal method of evaluating the prudency of EE investments across the country.[86] Cost-effectiveness serves both as a ceiling and a floor, dictating which, if any, EE measures a state should invest in and how much of the resource to procure.[87]

B. Leakage Mitigation and Other Benefits of Energy Efficiency

EE's potential to combat leakage is intuitive. EE reduces the need for new energy generation.[88] In doing so, EE does not so much increase the incentive for existing generation, but rather reduces the pressure on existing resources while also deferring, and perhaps negating, the need for new generation resources.[89] By reducing this need, EE can delay or altogether avoid the construction of new generation and transmission resources.[90]

Its potential to combat leakage aside, an EE set-aside would offer numerous additional benefits, many of which an RE set-aside alone would not provide. EE produces zero emissions, consistent with the overarching goal of the CPP.[91] Although several RE resources likewise are zero-emitting, RE's heavy reliance on wind can in fact *increase* emissions, as the inherent variability of wind generation often requires balancing from natural gas EGUs.[92]

Further, EE offers both buy- and sell-side economic benefits: EE lowers transmission congestion and local constraints, generates only negligible air and water pollution impacts, asserts downward pressure on wholesale energy markets, lowers power bills, and increases consumer satisfaction. Not only is EE the lowest cost generation resource,[93] EE can also reduce energy

[85] *Id.* at 20-21. For case study detailing the Southern California Edison Residential Energy Efficiency Program's use of cost-effectiveness, see *id.* at 23.
[86] *Id.* at 20.
[87] *See, e.g.*, *Determining When Efficiency Is The Best Energy Buy For All Utility Customers*, ENERGY TRUST OF OREGON 1, 2 (2015), https://energytrust.org/library/GetDocument/3814 (discussing the Oregonian EE Program's use of cost-effectiveness in EE procurement planning).
[88] Davies, *supra* note 74.
[89] *Sixth Power Plan Energy Efficiency Two-Pager*, NORTHWEST POWER AND CONSERVATION COUNCIL (May 20, 2015), https://www.nwcouncil.org/energy/powerplan/6/2010-08/.
[90] *Id.* To combat leakage, the EE procured under the set-aside must, however, be additional to that which would have occurred ordinarily, absent the set-aside. *See infra* Part II.C.i., p.17
[91] *Unlocking Energy Efficiency in the U.S. Economy: Executive Summary*, MCKINSEY GLOBAL ENERGY AND MATERIALS 3 (July 2009), http://www.mckinsey.com/client_service/electric_power_and_natural_gas/latest_thinking/unlocking_energy_efficiency_in_the_us_economy.
[92] Leo Hickman, *Are Wind Turbines Increasing Carbon Emissions?*, THE GUARDIAN (AUG. 4, 2015), http://www.theguardian.com/environment/blog/2012/jan/09/wind-turbines-increasing-carbon-emissions.
[93] *Demand-side Energy Efficiency Technical Support Document*, *supra* note 82, at 7.

demand during peak hours.[94] By reducing load at peak, when generation costs are at their highest, EE can provide financial savings for both energy suppliers and rate-paying customers. Reductions in peak load may also help to better integrate variable RE into the existing energy grid. Energy efficiency also offers benefits for lower-income households, as end-use energy reductions like improved weatherization ease the regressive financial burden of energy costs.[95] Additionally, EE investments and policies targeting industry have been found to spur productivity, technology learning, and innovation.[96] Further, EE improves the overall operational health of the energy grid by providing increased energy security and reliability,[97] avoiding the need for new generation, transmission, and distribution systems.[98]

Lastly, EE stimulates local economic development and job creation by redirecting funds away from less labor-intensive economic sectors, leading to overall employment gains.[99] This point may be particularly attractive to states facing the shutdown of existing EGUs and the subsequent job loss and community disruption that can follow. Not only does EE offer numerous net benefits, it specifically targets and combats one of the most significant potential negative consequences of the CPP as a whole.

In its "Demand-Side Energy Efficiency Technical Support Document," issued along with the CPP final rule and proposed Federal Plan, the EPA recognized "impactful EE policies in most states include those that drive development and funding of EE programs."[100] An EE set-aside is one such policy that would drive both the development and funding of EE programs within a state. CO_2 allowances have monetary value.[101] By allocating allowances to EE providers, thereby conferring wealth upon them, those providers would likely be able to procure EE that might otherwise be cost prohibited due to the cost-effectiveness ceiling.

[94] Dan York, Martin Kushler, & Patti White, *Examining the Peak Demand Impacts of Energy Efficiency: A review of Program Experience and Industry Practices* AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY (ACEEE) vi (Report No. U072 Feb. 2007), http://aceee.org/research-report/u072; *see also* Frank Stern, *Peak Demand and Time-Differentiated Energy Savings Cross Cutting Protocols*, NATIONAL RENEWABLE ENERGY LABORATORY (Apr. 2013), http://energy.gov/sites/prod/files/2013/11/f5/53827-10.pdf.

[95] *Demand-side Energy Efficiency Technical Support Document, supra* note 82, at 7, 15.

[96] *Id.*

[97] *Id.*

[98] Stern, *supra* note 94, at 4.

[99] *Fact sheet: How Does Energy Efficiency Create Jobs?,* ACEEE (Nov. 14, 2011), https://www.*aceee.org/files/pdf/fact-sheet/ee-job-creation.pdf.*

[100] *Demand-side Energy Efficiency Technical Support Document, supra* note 82, at 7.

[101] Brian Palmer, *More for Less*, ON EARTH, Natural Resources Defense Council (Aug. 2015), http://www.onearth.org/earthwire/clean-power-plan-energy-efficiency.

C. The Energy Efficiency Set-Aside: A Proposed Framework

Under an EE set-side, a certain percentage of a state's CO_2 allowances could be directly allocated to EE providers for delivered EE.[102] Allowances would be allocated to the providers (utilities or generators)[103] eligible under the CPP guidelines for each delivered megawatt of EE, i.e., each megawatt avoided. Depending on the state and its standing EE policy, a smart approach could be for a state to distribute these reserved allowances to a state-approved third-party EE administrator, which would then grant the allowances to eligible EE providers.[104] This approach has been heralded by the State of Wisconsin, which, in its comments to the EPA on the proposed Federal Plan, recommended that the EPA "permit allowances under th[e EE] set-aside to be allocated to the utilities rather than to a specific EGU," as "the state's utility-funded EE program, Focus on Energy, credits avoided generation based on the customers' utility. It would not be appropriate to credit these allocations to an individual EGU."[105] Doing so would not only ignore and arguably squander the existing progress made by states with already successful EE programs but also reduce the efficiency of both the EE set-aside and the EE market itself.

1. Proving Additionality

To effectively mitigate the potential for leakage, the EE delivered in conjunction with the set-aside must be *additional* to the EE which would ordinarily be procured under normal operating conditions. In other words, the EE achieved through the set-aside must go beyond that which would have occurred anyway at baseline, absent the EE set-aside intervention.[106] In the CPP final rule, EPA notes that "*increased* demand-side EE will reduce the demand that sources need to meet . . . ,"[107] suggesting that additionality above baseline would indeed be required.[108] Additionality implicates causation: "A proposed activity is additional if the recognized policy interventions are deemed to be causing the activity to take place."[109] A specific increment of procured EE is

[102] CPP, *supra* note 13, at 64890.
[103] For a discussion EE provider eligibility, see *infra* Part II.C.ii.
[104] *Comments on EPA's Proposed Clean Power Plan Federal Plan Requirements, Model Trading Rules, and Amendments to Framework Regulations, Docket ID No. EPA-HQ-OAR-2015-0199,* Public Service Commission of Wisconsin, (Jan. 21, 2016), at 27 (on file with author.)
[105] *Id.*

[106] For a detailed discussion of additionality with respect to greenhouse gas reduction policy generally, see Michael Gillenwater, *What is Additionality?, Parts 1 and 2*, GHG Management Institute (Jan. 2012), http://ghginstitute.org/wp-content/uploads/2015/04/.
[107] CPP, *supra* note 13, at 64890 (emphasis added).
[108] *See also Incorporating RE and Demand-Side EE Impacts into State Plan Demonstrations*, EPA, (Aug. 2015), https://www.epa.gov/sites/production/files/2015-11/documents/tsd-cpp-incorporating-re-ee.pdf (discussing general demonstration requirements regarding projected EE).
[109] Michael Gillenwater, *What is Additionality, Part 2: A framework for more precise definitions and standardized approaches*, GHG MANAGEMENT INSTITUTE 10-11 (Jan. 2012), http://ghginstitute.org/wp-content/uploads/2015/04/AdditionalityPaper_Part-2ver3FINAL.pdf.

additional where it can be directly traced back to a specific EE measure. Thus, a sufficient leakage mitigation showing will likely require a demonstration that a specific EE policy measure employed is in fact what is responsible for a specific EE outcome.

Proving additionality will therefore require defining, isolating, and identifying both baseline EE and additional EE through approved EM&V methods. At least for states aiming to deviate from the Federal Plan by adopting their own brand of EE set-aside in an SIP, the simplest way to do so is to define baseline EE by referencing the state's own existing EE cost-effectiveness policies. Because a state's cost-effectiveness guidelines dictate how much EE investment would typically occur absent that which is attributed to the set-aside, they could provide an accurate reflection of that state's baseline EE. To satisfy a showing of additionality, a state could demonstrate that through the EE set-aside, the state is inducing investment in EE above its typical cost-effectiveness threshold.[110] Alternatively, the EPA has provided guidance on how to quantify "incremental direct effects" of EE measures in its technical support document, "Incorporating RE and Demand-Side EE Impacts into State Plan Demonstrations."[111]

Once additionality has been verified, the question arises how much additional EE is necessary to sufficiently counteract the potential incentive for leakage. With respect to the RE set-aside, EPA has proposed that 5% of the total allowances be allocated to RE resources.[112] Thus, a 5% RE set-aside allocation is sufficient. If RE and EE are strictly analogous—a megawatt supplied by RE is arguably equal in force to a megawatt avoided by EE—then a 5% allocation to EE should also be presumptively sufficient to combat leakage. Even if a 5% allocation is inadequate, given the vast amount of EE still available to be procured,[113] a state might propose another allocation scheme. Or, a state could simply choose to implement an EE set-aside *in addition to* a 5% RE set-aside. Again, the optimal mix of allowance allocation make-ups and percentages will differ from state to state and likely depend on the unique resource mix of each respective state.

[110] States that lack pre-existing EE programs need not define baseline EE, as there, any EE procured post-administration of an EE set-aside will necessarily be additional.

[111] *Incorporating RE and Demand-Side EE Impacts into State Plan Demonstrations*, *supra* note 108, at 7.

[112] Federal Plan, *supra* note 16, at 65022; *see also Memorandum on Renewable Energy Set-Aside Technical Support Document, Docket No. EPA-HQ-OAR--2015-0199*, EPA 1 (Aug. 2015), https://www.epa.gov/sites/production/files/2015-11/documents/tsd-fp-re-setaside.pdf (requesting comment on a range of reservation percentages, from 1 to 10%.)

[113] *See Sixth Power Plan, supra* note 89.

2. Eligibility and Evaluation, Measurement, and Verification Requirements

The EE set-aside could be structured much like the RE set-aside. The RE set-side's requirements are analogous to many of the same requirements for RE ERC issuance. For example, the proposed Federal Plan provides that an RE project is considered eligible for the RE set-aside if it meets the eligibility requirements for rate-based ERC issuance.[114] Here too, many of the administrative requirements for the EE set-aside could parallel the requirements for EE ERC issuance provided in the CPP final rule.

As outlined in the CPP final rule, EE measures eligible for ERC issuance include, but are not limited to those that reduce electricity use in residential and commercial buildings, industrial facilities, and other grid-connected equipment; appliance replacement and recycling programs; behavioral programs; building energy code requirements; state appliance and equipment standards; and even water efficiency programs that improve EE at water and wastewater treatment facilities.[115] ERC-eligible EE measures can be installed as a result of individual EE projects or multiple EE measures installed through an EE deployment program administered by utilities or state, private, or non-profit entities.[116] Providers eligible include investor-owned utilities, public utilities, private organizations such as energy services companies, owners and operators of large commercial and industrial end users,[117] and probably also third-party administrators. Ultimately, the state will most likely retain control over which entities may provide the EE eligible for set-aside allocations. Thus, the administrative procedure for awarding a set-aside allocation could be substantially similar if not fully analogous to the issuance of an ERC.

Additionally, the EE set-aside could borrow presumptively approvable EM&V methods directly from the EE ERC issuance EM&V guidelines outlined in the CPP final rule and technical support documents.[118] Recall that the EM&V requirements for the RE set-aside differ from those prescribed for RE ERC issuance, due to the set-aside's reliance on generation projections rather than post-generation data.[119] Yet, because the EE set-aside would allocate allowances based on actual delivered EE, rather than projections, it follows that the Federal Plan should include the same EM&V protocols for both the EE set-aside and EE ERC issuance. This approach has been endorsed by both Wisconsin and Washington in each state's respective

[114] Federal Plan, *supra* note 16, at 65023.
[115] CPP, *supra* note 13, at 64901.
[116] *Id.*
[117] *EM&V Guidance for Demand-Side EE*, EPA 11 (Aug. 3, 2015), https://www.epa.gov/cleanpowerplantoolbox/evaluation-measurement-and-verification-emv-guidance-demand-side-energy.
[118] *See, e.g.*, *id.; Demand-side Energy Efficiency Technical Support Document, supra* note 82.
[119] Federal Plan, *supra* note 16, at 65023; *see supra* Part I.A.

comments to the EPA on the Federal Plan.[120]

However, the EPA should also permit a state adopting the Federal Plan, either in whole or in part, to devise its own EM&V methods for the EE set-aside without rendering the entire approach non-presumptively approvable. The Federal Plan already provides:

> states may submit partial state plans in order to take over the implementation of a portion of [the Federal Plan]. For instance, in a mass-based trading program, the agency proposes to allow states to submit partial state plans to replace the [F]ederal [P]lan allowance-distribution provisions with their own allowance-distribution provisions, similar to the approach we have taken in prior trading programs. Finally, even in states in which the affected EGUs are operating under [the Federal Plan, the EPA] recognizes that states may adopt complementary measures outside of CAA programming to facilitate compliance and lower costs that could benefit power generators and consumers, directly or indirectly.[121]

Conversely, "[t]here are stand-alone portions of the model trading rules, such as the evaluation, measurement and verification procedures for [ERCs] that would be approvable even if a state adopted an approach that differs in other respects from the [Federal Plan]."[122] Many states, including Oregon with its Energy Trust and Wisconsin with its Focus on Energy, have existing EE programs with sophisticated and established EM&V methods.[123] The EPA has already recognized this fact, as it states in its EE EM&V guidance for ERC issuance, "many state PUCs, and other regulatory bodies and program implementation authorities, already have significant EM&V infrastructure in place, and some have been applying, refining, and enhancing their approaches for over 30 years."[124] Given the EPA's apparent acceptance of a piecemeal approach to state CPP compliance, it should allow a state choosing to adopt the EE set-aside as set forth by the Federal Plan to employ its own EM&V methods. Doing so would facilitate seamless compliance and lower costs, which would in turn benefit power generators and consumers alike. As Wisconsin puts it, at least with respect to

[120] See *WI Comments*, *supra* note 104, at 27, 29 ("EPA should require the same kinds of EM&V measures under th[e EE] set-aside as they do for measures that generate ERCs under a rate-based plan."); *State of Washington Comments on the Environmental Protection Agency's Proposed Federal Plan, Model Trading Rules, and Clean Energy Incentive Program*, STATE OF WASHINGTON DEPARTMENT OF ECOLOGY, at 2-3, 7-9 (Jan. 21, 2016) (supporting the use of "real-time quantification" of EE, generally) (on file with author).

[121] Federal Plan, *supra* note 12, at 64969.

[122] *Id.*

[123] *Sixth Power Plan Energy Efficiency, supra* note 89; *Unlocking Energy Efficiency in the U.S. Economy, supra* note 91, at 14; *see, e.g.*, Energy Trust of Oregon Timeline, ENERGY TRUST OF OREGON, http://energytrust.org /timeline/ (last visited Dec. 14, 2015).

[124] *EM&V Guidance for Demand-Side EE, supra* note 117, at 10.

EE ERC generation, "EPA should allow [EE] providers to use these existing systems' EM&V plans to meet CPP EM&V requirements" because "requiring separate EM&V plans would be redundant and could lead to confusion and conflict if the EM&V plan used for CPP compliance is not worded exactly like other tracking system[s'] existing EM&V rules."[125] Finally, honoring a state's own established EE EM&V methods is consistent with the CPP's continual goal of affording states broad latitude in implementation.[126]

V. Energy Efficiency in the CPP Final Rule and Proposed Federal Plan

Despite its unexplained absence from the Federal Plan, the EE set-aside is expressly included in the CPP final rule.[127] The final rule affirms the EE set-aside's potential to combat leakage, noting "increased demand-side EE will reduce the demand that sources need to meet," which "can serve to reduce the incentive that new sources have to generate, and therefore align their incentives with affected EGUs."[128] Thus, "increased RE and demand-side EE, supported by a dedicated set-aside, can [] serve to address potential leakage."[129]

The EPA has further demonstrated its acceptance of EE as good policy generally by adopting EE in several other provisions of the CPP final rule as well. First, for rate-based state plans, EE can be procured to achieve ERCs.[130] There, the EPA acknowledged, "commenters [to the proposed rule] touted the value of demand-side EE as a resource that delivers energy savings, lowers bills, creates jobs and reduces CO_2 emissions."[131] Second, the EPA has created the optional Clean Energy Incentive Program ("CEIP,") which provides additional allowances or ERCs to states that make early investments in RE generation and EE measures.[132] Moreover, between the proposed and final rule, the EPA extended the eligibility time frame for EE projects (now including projects implemented post-2012 rather than only post-2014) and changed the approach to interstate EE crediting (no longer requiring complex air modeling or adjustment for EE impacts across state lines, making it easier for states to generate ERCs via EE.)[133] These provisions and adjustments suggest the EPA is already cognizant of EE's vast potential.

[125] *WI Comments*, *supra* note 104, at 19.
[126] Federal Plan, *supra* note 16, at 64968.
[127] CPP, *supra* note 13, at 64890.
[128] *Id.*
[129] *Id.*

[130] *Id.* at 64901; *see also Fact Sheet: Energy Efficiency in the Clean Power Plan*, EPA 1 (Aug. 20, 2015), http://www.epa.gov/cleanpowerplan/fact-sheet-energy-efficiency-clean-power-plan.
[131] CPP, *supra* note 13, at 64901.
[132] *Fact Sheet: Clean Energy Incentive Program*, EPA 1 (Oct. 21, 2015), http://www.epa.gov/cleanpowerplan/fact-sheet-clean-energy-incentive-program.
[133] *Fact Sheet: EE in the CPP*, *supra* note 130, at 1-3.

Yet despite EE's many advantages and acceptance in other areas of the CPP final rule, the proposed Federal Plan does not include an EE set-aside, at least to the extent one is presumptively approvable.[134] Instead, only historical output-based set-asides and a set-aside for RE (but not EE) are currently accepted within the Federal Plan.[135] The proposed Federal Plan contains no mention or explanation for the EE set-aside's absence. In fact, the only reference therein to the EE set-aside is the Federal Plan's solicitation for "comment on other set-aside options that could address leakage, including a set-aside that provides an incentive for demand-side EE."[136]

The Federal Plan similarly fails to include EE as an accepted means to generate ERCs in the rate-based compliance system, [137] despite its inclusion in the final rule.[138] Even more perplexing, with rollout of the final rule and proposed Federal Plan, the EPA also issued draft EM&V guidance for EE measures used to generate ERCs in a rate-based system.[139] At the same time, the EPA published a Fact Sheet entitled "Energy Efficiency in the Clean Power Plan," explaining, "[t]he [proposed Federal Plan] includes presumptively approvable provisions for . . . ERCs to be issued for [EE] under a rate-based trading program."[140] Thus, the EPA accepted EE as means to generate ERCs in the final rule but rejected such means in the proposed Federal Plan, while at the same time, the EPA published technical EM&V guidance intended to help states better utilize EE in generating ERCs.[141] That the EPA would issue complex technical support for a measure that is not even presumptively approvable under the Federal Plan makes little sense. Reconciling the contradictory messages in the EPA's publications is difficult.

Further, though strictly speaking, the draft EE EM&V methods provided by the EPA apply only to rate-based plans or those states taking advantage of the CEIP, the EPA noted that "[f]or mass-based state plans . . . the guidance . . . may be of use in the design of allowance set-aside programs."[142] If the EPA's EE EM&V guidance may be used in the design of allowance set-aside programs in mass-based state plans, logic dictates that EE is indeed permitted as part of a set-aside program.

There also exist internal inconsistencies regarding the consideration of an EE set-aside within the Federal Plan itself. In support of its set-aside approach, the Federal Plan offers examples of other "successful" set-aside programs that have been used in other federal air quality

[134] Federal Plan, *supra* note 16, at 65016, 65019-25; NACAA Technical Call, *supra* note 51.
[135] Federal Plan, *supra* note 16, at 65022.
[136] *Id.* at 65020.
[137] *Id.* at 64994.
[138] CPP, *supra* note 13, at 64901.
[139] *See EM&V Guidance for Demand-Side EE, supra* note 117.
[140] *Fact Sheet: EE in the CPP, supra* note 130, at 2.
[141] *Id.*
[142] *EM&V Guidance for Demand-Side EE, supra* note 117.

rules.[143] One such program is the sulfur dioxide (SO_2) allowance program under the CAA § 404(f) that provides for a set-aside for both RE and "qualified energy conservation measures," later described by the Federal Plan as "EE savings."[144] The Federal Plan explains the program not only achieved "co-benefits" like reductions in other pollutants, but also "'created a culture change where utilities are looking for opportunities everywhere.'"[145]

Additionally, the Federal Plan recounts that in the EPA's NOx SIP Call Rule of 1998,[146] the Agency "encouraged states to 'consider including [EE] . . . as a strategy in meeting their [NOx emission] budgets.'"[147] One accepted option was the creation of a NOx allowance set-aside to "implementers" of both RE *and* EE.[148] Several states created such set-asides and reported their progress in a 2006 roundtable.[149] The EPA, in the CPP Federal Plan, explains that states "were generally having success with [the programs]," and as a result, believes "[EPA']s experience and those of the states with these set-aside programs support the view that they are an effective means to . . . help to reduce the risk of leakage in this instance."[150]

These positive examples support both the inclusion of a similar EE set-aside in the Federal Plan and the EPA's approval of a state's own EE set-aside program. If an EE set-aside can be successful in SO_2 and NOx allowance programs, why not too in a CO_2 allowance allocation scheme?

In this discussion of the SO_2 and NOx programs, however, the EPA also recognized the set-asides' potential drawbacks. The Federal Plan states the SO_2 program was "undersubscribed."[151] The 2006 NOx roundtable also brought to light other pitfalls that befell the SO_2 EE set-aside, including "over- and under-subscription, application issues, compliance and verification, the appropriate size of the set-aside account, how to garner public input on which projects are selected."[152]

Still, even these admitted shortcomings do not explain the EPA's hesitancy in providing for a presumptively approvable EE set-aside in the Federal Plan. The difficulties in design and administration outlined above have the potential to plague both an RE set-aside and an EE set-side equally. The RE set-aside may suffer the very same shortcomings to the same extent as the EE set-aside, yet has been included in the proposed Federal Plan nevertheless. These general

[143] Federal Plan, *supra* note 13, at 65019.
[144] *Id.* at 65019-20.
[145] *Id.* at 65020. (quoting State Clean Energy-Environment Technical Forum Roundtable on State NOx Allowance EE/RE Set-Aside Programs, Call Summary, EPA (June 6, 2006), http://www.epa.gov/statelocalclimate/documents/pdf/summary_paper_nox_allowance_6-6-2006.pdf).
[146] 40 C.F.R. §§ 51, 72, 75, 96 (1998).
[147] Federal Plan, *supra* note 16, at 65020.
[148] *Id.*
[149] *Id.* (discussing NOx EE set-aside programs in Indiana, Massachusetts, Missouri, New Jersey, New York, Georgia, Minnesota, and Pennsylvania)).
[150] Federal Plan, *supra* note 16, at 65020.
[151] *Id.*
[152] *Id.*

implementation obstacles alone do not support that an RE set-aside should be presumptively approvable where an EE set-aside is not.

Moreover, these shortcomings are common administrative problems, the very kind the Federal Plan was created to help solve.[153] The EPA acknowledges this point, at least with regard to the problem experienced in the SO_2 program, stating the Federal Plan "seeks to minimize the administrative burden associated with participation in this rule's proposed set-asides."[154] Not only is there no reason to single out an EE set-aside when recognized shortcomings apply just as much to the allowed RE set-aside, but the EPA itself has stated it intends to address these shortcoming in the Federal Plan.

The EPA's hesitancy to incorporate an EE set-aside into the Federal Plan is perhaps evidenced by the EPA's call for specific comments on the concept of an EE set-aside. The EPA requested comment on whether an EE set-aside should be included at all, "the method for allocation of allowances to set-asides, the size of the set-asides, the requirements for the process of distribution, eligibility requirements for receiving set-aside allowances, the proposed process for redistribution of undistributed allowances from each set-aside, and any other appropriate set-asides."[155] This laundry list of administrative and logistical unknowns may suggest that the agency simply needs more direction or more assurance in designing a universal, presumptively approvable EE set-aside. RE is arguably a better known and more widely accepted generation resource.[156] It is more tangible and more approachable, both physically and conceptually: one can easily see large, imposing wind turbines in much of the country and understand how the resource functions. RE has already enjoyed widespread public support, in both cultural and political spheres.[157] As a result, the EPA may have been quicker to accept an RE set-aside simply because it is a more traditional measure in relative terms, and therefore more legally defensible and less risk prone.

Ultimately, the Federal Plan serves as both a model rule and, in certain circumstances,[158] a federally enforceable toolkit for the EPA to use to ensure each state achieves the emission reductions required by the CPP. If a state fails to submit an approvable SIP, the EPA

[153] *Factsheet: Clean Power Plan Proposed Federal Plan*, EPA (Oct. 8, 2015), http://www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-proposed-federal-plan.
[154] *Id.*
[155] *Id.*
[156] *Growing Political Support Powers Renewable Energy into the Mainstream*, WORLDWATCH INSTITUTE (2015), http://www.worldwatch.org/growing-political-support-powers-renewable-energy-mainstream.
[157] *See id.*; Dennis Jacobe, *Americans Want More Emphasis on Solar, Wind, Natural Gas*, GALLUP (Mar. 27, 2015), http://www.gallup.com/poll/161519/americans-emphasis-solar-wind-natural-gas.aspx.
[158] That is, if a state adopts the Federal Plan in its entirety, fails to submit an approvable SIP, or fails to comply with its emission reduction obligations. See discussion *infra*, Introduction.

would step in to impose the Federal Plan upon the state.[159] The EPA would then have the authority[160] to enforce emission limitations against affected EGUs directly through orders, administrative penalties, and civil lawsuits.[161] If the EE set-aside is absent from the final Federal Plan, the EPA has effectively forestalled its own ability to impose the set-aside on those states required to comply with a Federal Plan. Again, the optimal CPP implementation plan for each state will differ depending on the unique energy resource mix and economy of the state in question. As such, it would be prudent for the EPA to arm the Federal Plan with as many compliance options as possible, to be best-equipped to arrive at a comprehensive CPP compliance plans for states falling under federal enforcement.

VI. Conclusion

The upshot of the confusion and inconsistencies in the proposed Federal Plan is that the EPA still appears receptive to the inclusion of an EE set-aside in the final Federal Plan.[162] Many of the projected pitfalls in the proposed CPP rule were remedied in the final version.[163] Accordingly, if the final rule itself is any indication, an EE set-aside could, and should, reappear in the final Federal Plan.

Despite lingering uncertainty over the legality of the CPP, the planning process is far from over, or even stayed. Even if the CPP is struck down, its policy framework will persist and inform other carbon reduction legislation in the future.[164] For now, the many proactive states choosing, likely wisely, to move forward with CPP compliance are tasked with formulating their respective state plans. Those states that adopt a mass-based compliance scheme must account for leakage, either by adopting the provisions set forth in the Federal Plan or

[159] Federal Plan, *supra* note 16, at 64968; *The Clean Power Plan: What Happens If States Fail to Comply?,* NEW YORK UNIVERSITY SCHOOL OF LAW INSTITUTE FOR POLICY INTEGRITY (July 31, 2015), http://policyintegrity.org/files/media/CPP_State_Compliance_Fact_Sheet.pdf.

[160] This, however, is an area of contention in the currently pending legal battle against the CPP in the courts.

[161] *The Clean Power Plan: What Happens If States Fail to Comply?, supra* note 159.

[162] *See* Federal Plan, *supra* note 16, at 65020; Comments from Beth Conlan, NACAA Technical Call, *supra* note 51.

[163] *See, e.g.*, *Comments, Docket ID-EPA-HQ-OAR-2013*-0602, OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY (Oct. 16, 2014), *www.deq.state.or.us/aq/climate/docs/epaLcomment.pdf (requesting that states "be able to credit the entire amount of emission reductions produced from energy efficiency investments" so that "the state that implements an energy efficiency measure will claim the resulting emission reductions in its state compliance plan."). This issue was subsequently addressed in the final CPP rule.*

[164] Greg Dotson, Vice President for Energy Policy at Ctr. for Am. Progress, Keynote Address at the University of Oregon Green Business Initiative Symposium: Flipping the Switch (Apr. 8, 2016); *see also* Bob Sussman, *The Supreme Court's Clean Power Plan Missteps*, BROOKINGS (Feb. 12, 2016) ("Even if the CPP is struck down, power plant GHG emissions will continue to decline as the electricity sector moves away from coal and renewables capture larger market share."), http://www.brookings.edu/blogs/planetpolicy/posts/2016/02/12-supreme-court-clean-power-plan-missteps-sussman.

by fashioning their own variants using the Federal Plan as a model.

The EE set-aside offers untapped potential, not only to mitigate leakage, but also to lower energy costs,[165] provide heightened state flexibility,[166] improve the health and reliability of the energy sector, spur economic development and job creation, increase consumer satisfaction, and, most important, greatly reduce carbon emissions. The EPA should continue to develop the EE set-aside framework in the CPP final rule, utilizing insights from states like Oregon and Wisconsin with established EE programs already in place, and accept the set-aside in the final Federal Plan and SIPs.

[165] President Obama's Plan to Fight Climate Change, *supra* note 2.
[166] CPP, *supra* note 13, at 64663.

Glossary of Acronyms

CAA	Clean Air Act
CEIP	Clean Energy Incentive Program
CO_2	Carbon Dioxide
CPP	Clean Power Plan
EE	Energy Efficiency
EGU	Electric Generating Units
EM&V	Evaluation, Measurement, and Verification
EPA	Environmental Protection Agency
ERC	Emission Rate Credit
NGCC	Natural Gas Combined Cycle power plants
NOx	Nitrogen Oxides
RE	Renewable Energy
SIP	State Implementation Plan
SO_2	Sulfur Dioxide