

V&E Climate Change Report



Special Issue: EPA's Proposed Greenhouse Gas ESPS

On June 18, 2014, the EPA published a proposal in the Federal Register to create greenhouse gas (“GHG”) emission standards for existing power plants under section 111(d) of the Clean Air Act (the existing source performance standards or “ESPS”).¹ In setting the performance standards under the proposed rule, the EPA has for the first time required “beyond-the-fenceline” reductions, meaning that the GHG emission rate targets set in the rule cannot be met through installation of additional controls at affected power plants alone. This first-of-its-kind proposal will no doubt generate a significant volume of comments and subsequent litigation to determine whether the broad view of utility regulation EPA seems to adopt in its proposal reaches beyond the scope of the Agency’s legal authority under the Clean Air Act (“CAA”). This special issue of the Climate Change Report is devoted to EPA’s proposed ESPS and its potential consequences for the energy industry. In this issue, we will not only explore the legal issues associated with EPA’s proposal but also evaluate preferential dispatch of natural gas-fired power plants and related transmission issues, impacts on the valuation of power assets, opportunities for renewables, and international implications.

EPA’s proposal calls upon states to create implementation plans to meet new GHG performance targets for power plants. Because of the way the proposed rule is structured, these emissions reductions cannot be achieved through emissions reductions at power plants alone. Instead, if finalized, the proposed rule’s GHG reductions will require states to choose between a range of GHG emissions reductions measures that may include changing the order in which power plants are dispatched, adopting aggressive renewable energy standards, and imposing energy efficiency requirements on both residential and industrial consumers. As a result, EPA’s proposal goes well beyond the regulation of existing coal-fired power plants and instead asks states to use the Clean Air Act to create a new form of energy regulation with far-reaching economic implications. The purpose of this special issue of the *Climate Change Report* is to explain EPA’s proposal, the potential challenges it may face, and the far reaching implications for the energy sector if a rule that is similar to EPA’s proposal is ultimately finalized.

¹ 79 Fed. Reg. 34,830 (June 18, 2014).

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Summary

Why Is EPA Proposing to Regulate Existing Power Plants?

As part of his Climate Action Plan, released in June 2013, President Obama issued a Presidential Memorandum that directed EPA to reduce GHG emissions from power plants.² This memorandum directed EPA to propose New Source Performance Standards (“NSPS”) for power plants by September 30, 2013, and finalize these standards as expeditiously as practicable.³ The Presidential Memorandum further directed EPA to propose standards of performance for existing power plants by June 1, 2014.⁴ EPA proposed the ESPS on June 2, 2014.⁵

Under section 111(d) of the Clean Air Act, EPA is required to promulgate performance standards for those sources that have been subject to regulation under the NSPS and are not otherwise controlled under the provisions of the CAA that regulate hazardous air pollutants or criteria pollutants for which the EPA has set national ambient air quality standards (“NAAQS”).⁶ States are then required to develop implementation plans using these emission guidelines.⁷ Because the EPA has declined to set NAAQS for GHGs, the finalization of new source performance standards for greenhouse gas emissions from power plants arguably triggers a requirement that EPA promulgate similar standards for existing power plants. EPA currently has two pending NSPS proposals that would serve as the trigger for the ESPS: the standards for new power plants proposed in late 2013, and the standards for modified and reconstructed sources that were proposed alongside the ESPS.⁸

What Sources Is EPA Proposing to Regulate?

In its proposal, EPA adopts the same definition of “affected electricity generation unit” that is proposed in the GHG NSPS.⁹ Under this proposed definition, power plants are only subject to regulation if they have a capacity of 73MW or greater, sell at least one-third of their power output to the grid, and sell at least 219,000MWh of power to the grid on an annual average basis.¹⁰ EPA relies upon the sources falling in the category of affected electricity generation units (“affected EGUs”) to determine the best system of emission reductions under section 111.¹¹

Once EPA has determined the emission rate that reflects the application of the best system of emission reduction, the CAA turns power over to the states, who determine how to apply the ESPS within their jurisdictions.¹² In a departure from past rulemaking activities under section 111, EPA has proposed CO₂ emission limitations on a state-wide basis rather than at the facility level. In so doing, EPA’s preamble states that it intends to grant states the maximum level of flexibility to determine how the required reductions in CO₂ emissions will be achieved.¹³ To ensure this flexibility, EPA proposes two definitions of sources that states may choose to regulate under implementation plans to implement the ESPS. First, EPA incorporates the definition of affected EGU described above. Second, EPA’s proposed rule includes a definition of “affected entity,” which is defined to include “[a]n affected EGU, or another entity with obligations under Subpart UUUU for the purpose of meeting the emissions performance goal requirements in these emission guidelines.”¹⁴

Thus, while states are required to establish CO₂ emission limitations for affected EGUs,¹⁵ they are also given wide latitude to regulate other sources of GHG emissions within their jurisdiction to meet the state-level CO₂ emission rate.¹⁶ As a result, it will not be possible to determine the full range of sources that will be subject to CO₂ emission regulations as a result of the proposed ESPS in a particular state until that state proposes its implementation plan.

How Did EPA Determine the Best System of Emission Reductions?

Section 111 requires that EPA base an emission guideline on the “best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy

² Memorandum from President Barack Obama to Environmental Protection Agency, June 25, 2013, available at <http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards> [hereinafter Presidential Memorandum]

³ *Id.*

⁴ *Id.*

⁵ 79 Fed. Reg. at 34,950 (reflecting signature date of June 2, 2014).

⁶ 42 U.S.C. § 7411(d)(1)(A).

⁷ Note that the implementation plans are governed by the requirements of section 111 and NOT the section 110 SIP process.

⁸ 79 Fed. Reg. 34,960 (June 18, 2014) (proposing standards for modified and reconstructed power plants); 79 Fed. Reg. 1430 (Jan. 8, 2014) (proposing NSPS for new electricity generating units).

⁹ *Cf.* 79 Fed. Reg. at 34,954, 79 Fed. Reg. at 1502, 1506.

¹⁰ 79 Fed. Reg. at 34,954.

¹¹ 79 Fed. Reg. at 34,854.

¹² 42 U.S.C. § 7411(d).

¹³ 79 Fed. Reg. at 34,893.

¹⁴ 79 Fed. Reg. at 34,956 (proposed 40 C.F.R. § 60.5820).

¹⁵ *Id.* at 34,853.

¹⁶ *Id.*

requirements) the Administrator determines has been adequately demonstrated.¹⁷ EPA's proposal concludes that the best system of emission reductions ("BSER") for affected electric generation units is based on a combination of the following four building blocks:

1. Heat rate improvements at coal-fired power plants;
2. Substituting generation from less carbon-intensive sources (Natural Gas Combined Cycle plants);
3. Substituting low- and zero-carbon generation (renewables and nuclear); and
4. Demand-side energy efficiency improvements.

EPA proposes that the application of all four building blocks together constitutes BSER. As a result, EPA derived the proposed state-specific limits by applying each of the four building blocks to come up with a GHG emission reduction that it believes to be feasible in each state.¹⁸ However, EPA's proposal would not mandate that each state use all four building blocks to achieve the target GHG emission rate.¹⁹ Rather, EPA grants states broad discretion in the creation of implementation plans to meet these emissions rate goals, which includes the ability to impose GHG reductions on sources other than affected EGUs.

EPA's first building block is heat rate improvements at coal-fired EGUs.²⁰ The preamble explains that heat rate improvements are changes to an EGU that increase its efficiency in converting fuel energy to electric energy.²¹ EPA assumes that each affected EGU can achieve a 6% improvement in its heat rate through adoption of best practices and potential equipment upgrades.²² It is important to note that heat rate improvements are the only emission reduction measures included in EPA's proposal that take place solely at affected EGUs. However, EPA rejected an ESPS based solely on heat rate improvements because it concluded that increasing the efficiency of coal-fired plants alone could lead to more frequent dispatch of these plants, which would reduce the potential GHG emission reductions (e.g., focus just on heat rate improvements could encourage use of coal burning EGUs preferentially over natural gas units).²³

EPA's second building block involves dispatching natural gas instead of coal. Under this building block, EPA assumes that the capacity factor of each existing natural gas plant will be increased to 70%, and that this increased use of natural gas will offset coal-fired generation.²⁴ In calculating the state specific targets, EPA simply conducts calculations that increase natural gas plant usage to 70% of capacity and decreases projected MWh of coal-fired generation by corresponding amounts.²⁵ In the preamble, EPA suggests that states can achieve this higher utilization of natural gas by either imposing a cap on the total number of hours that coal-fired plants can run or by changing the relative costs of generation by imposing a price on carbon emissions.²⁶ EPA cites the example of the acid rain trading program and suggests that pricing carbon emissions will cause the costs of more carbon-intensive (coal-fired) generation to increase relative to natural-gas fired generation, which will lead to the preferential dispatch of natural gas-fired power plants.

EPA's third building block involves substituting low or zero-carbon generation.²⁷ This building block includes two separate activities: preservation of existing nuclear capacity and promotion of the development of new renewable generation capacity.²⁸ EPA derives its proposed state renewable energy targets by dividing the states into six regions and developing a best practices scenario for each region.²⁹ For Texas, EPA establishes an interim target of 16% renewable energy use and a final target of 20% renewable energy use.³⁰

EPA's fourth building block calls for demand-side energy efficiency improvements.³¹ EPA determined state energy efficiency targets by developing a set of "best practices" for demand-side energy efficiency reduction.³² For Texas, EPA proposes an interim energy savings target of 1.8% by 2020 and a final energy savings target of 9.9% by 2029.³³

¹⁷ 42 U.S.C. § 7411(a)(1).

¹⁸ *Id.* at 34,836 (stating that EPA believes application of all four building blocks is BSER); EPA, Goal Computation Technical Support Document (2014), available at <http://www.gpo.gov/fdsys/pkg/FR-2014-06-18/pdf/2014-13726.pdf>.

¹⁹ 79 Fed. Reg. at 34,836.

²⁰ 79 Fed. Reg. at 34,859.

²¹ *Id.*

²² *Id.* at 34,861.

²³ *Id.* at 34,859.

²⁴ 79 Fed. Reg. at 34,863.

²⁵ *Id.*; Goal Computation Technical Support Document, *supra* note 26, at 10-13.

²⁶ 79 Fed. Reg. at 34,862.

²⁷ 79 Fed. Reg. at 34,866.

²⁸ *Id.*

²⁹ *Id.* at 34,867.

³⁰ *Id.* at 34,868.

³¹ *Id.* at 34,871.

³² *Id.* 34,872.

³³ *Id.* at 34,874.

While EPA's proposal maintains that a combination of all four building blocks constitutes BSER, EPA makes an alternative proposal under which BSER would consist of the heat rate improvements for coal-fired power plants from building block 1 "coupled with reduced utilization in specified amounts from, in general, higher emitting EGUs."³⁴ Under this approach, EPA says that building blocks 2, 3, and 4 would serve to support a determination that requiring reduced utilization of coal-fired plants is "adequately demonstrated."³⁵

How Does EPA Propose States Demonstrate Compliance with the ESPS in Their Implementation Plans?

Rather than imposing source-specific emission limitations based on the application of BSER, EPA has proposed GHG emission targets at the state level. EPA's proposal emphasizes that the imposition of state targets is intended to preserve the maximum flexibility for states in developing their implementation plans.³⁶ While states are required to establish GHG emission limitations for all affected electric generation units, EPA's proposal emphasizes that states can choose to reach their targets through any combination of measures from the building blocks and are not required to impose any set proportion of the needed GHG emission reductions from affected power plants.³⁷

EPA's proposal explains the criteria that the Agency intends to use to evaluate implementation plans submitted by the states. The four criteria proposed by EPA are: (1) the implementation plan contains enforceable measures to reduce CO₂ emissions from electricity generation units; (2) the implementation plan is projected to meet the emission performance goals specified by EPA; (3) the implementation plan contains quantifiable and verifiable emission reductions; and (4) the implementation plan includes a process for biennial reporting on implementation goals.³⁸

What Is the Timing for Implementation of the Proposed Rule?

Under the Presidential Memorandum, EPA is to finalize the ESPS proposed rule by June 2015, and states are to submit their implementation plans by 2016.³⁹ EPA's proposal would provide two possibilities for states to obtain an extension on the implementation plan deadline. First, states pursuing individual implementation plans can obtain a one-year extension to June 2017 if they submit an initial plan containing certain required elements by 2016.⁴⁰ States that elect to submit multi-state plans can receive an extension until June 2018 provided that they submit an initial plan by 2016.⁴¹

However, it is important to note that the timeline set forth in the Presidential Memorandum and EPA's proposal is unlikely to be realized. Under the Clean Air Act, EPA cannot finalize a section 111(d) standard for existing sources unless there is an applicable standard for similar new sources. EPA proposed to predicate the ESPS standards for power plants on the NSPS for new power plants proposed in September 2013 or the standards for modified and reconstructed sources proposed concurrently with the ESPS.⁴² Each of these standards may be subject to judicial challenge, and if a reviewing court were to stay the NSPS's effectiveness while judicial review is pending, EPA will be prevented from issuing a final ESPS rule.

³⁴ *Id.* at 34,878.

³⁵ *Id.*

³⁶ *Id.* at 34,837.

³⁷ *Id.* at 34,893.

³⁸ *Id.* at 34,838.

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.* at 34,933.

What Are EPA's Projected Impacts of the Proposed Rule?

EPA projects the following changes in energy generation either as a direct result of regulatory requirements or due to market responses to the rule employing EPA's preferred approach of adopting all four building blocks as BSER:

- 46 to 49 GW of coal-fired retirements and 16 GW of additional oil/gas fired steam EGU retirements by 2020.⁴³
 - 25-27% decrease in coal production and a 16 to 18% decrease in coal prices by 2020.⁴⁴
 - 12-14% increase in natural gas production and a 9-12% increase in natural gas prices by 2020.⁴⁵
 - Construction of 20-22GW of new NGCC capacity.⁴⁶
 - 12GW of new renewable energy capacity.⁴⁷
- Annual incremental compliance costs are projected to be \$5.4 to \$7.4 billion by 2020 and \$7.3 to \$8.8 billion by 2030.⁴⁸ ■

⁴³ *Id.* at 34,932.

⁴⁴ *Id.* at 94,933.

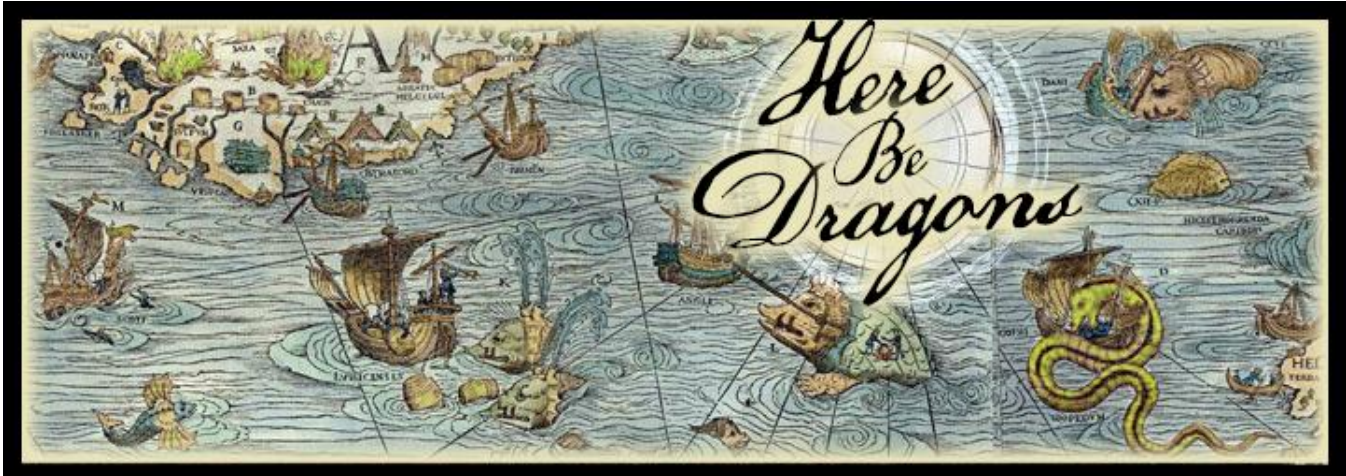
⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.*

Here Be Dragons: Legal Threats to the ESPS Proposal



By Eric Groten⁴⁹

A 104-page “Legal Memorandum” accompanying EPA’s proposal of the section 111(d) Existing Source Performance Standards (“ESPS”) maps the legal ground that EPA will have to defend if it adopts rules anything like it proposed. See [“Legal Memorandum for Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units”](#) (“Legal Memo”). The need for so comprehensive a map arises because EPA proposes a voyage in untraveled territory, far away from what section 111(d) has known and into treacherous legal waters.⁵⁰ But unlike the 16th Century explorers who ignored the dragon warnings at the edges of their maps, here EPA actually will encounter the identified dangers, which are so great as to reduce to near zero EPA’s prospects for safe crossing to its intended destination.

Where Has Section 111(d) Been?

As the Legal Memo acknowledges, section 111(d) has a long but tellingly undistinguished history:

Over the last forty years, under CAA section 111(d), the agency has regulated four pollutants from five source categories (i.e., phosphate fertilizer plants (fluorides) [in 1977], sulfuric acid plants (acid mist) [also in 1977], primary aluminum plants (fluorides) [in 1980], Kraft pulp plants (total reduced sulfur) [in 1979], and municipal solid waste landfills (landfill gases) [in 1996]).⁵¹

This limited history—consisting of EPA guidelines recommending technology-based limits for a few specific emission points within narrow industry categories that emit an otherwise unregulated pollutant significantly emitted only by one or two industries—this limited history is consistent with EPA’s long-expressed understanding of the limited role that section 111(d) is to play in Clean Air Act (CAA or Act) regulation.

Congress Intended Very Limited Use of Section 111(d). In the overall CAA architecture, the ubiquitous pollutants emitted by “numerous or diverse mobile or stationary sources”—a description never more applicable than to greenhouse gases (GHG)—are to be regulated as “criteria pollutants” through development of national ambient air quality standards (NAAQS) under sections 108 and 109, the designation of nonattainment areas under section 107, and the state implementation plan (SIP) process generally described in section 110 (as elaborated in other parts of Title I of the Act). Congress directed the control of hazardous air pollutants (HAPs) by their listing and subsequent regulation under section 112, which—as it existed from 1970 to 1990—required EPA to adopt standards for new *and* existing sources of each listed pollutant, “at a level which in [the Administrator’s] judgment provides an ample margin of safety to protect public health”

⁴⁹ Who gratefully acknowledges the collaboration and editorial support of his colleagues Larry Nettles, John Elwood, Mike Wigmore, and Maggie Peloso, who contributed much of the wisdom but none of the errors or outrageous opinions that may appear in the pages that follow.

⁵⁰ Although unexplored, the territory is not uncharted: EPA is navigating from a map handed to it by the Natural Resource Defense Council in 2012. See Lashof, et al., *Closing the Power Plant Carbon Pollution Loophole: Smart Ways the Clean Air Act Can Clean Up America’s Biggest Climate Polluters*, NRDC Report No.12-11-A (Mar. 2013) available at <http://www.nrdc.org/air/pollution-standards/files/pollution-standards-report.pdf>; see also Coral Davenport, *Taking Oil Industry Cue, Environmentalists Drew Emissions Blueprint*, *THE NEW YORK TIMES* (July 6, 2014) http://www.nytimes.com/2014/07/07/us/how-environmentalists-drew-blueprint-for-obama-emissions-rule.html?_r=2. Most of what later appeared as an EPA proposal in the *Federal Register* may be found within the pages of NRDC’s policy paper, especially including its legal rationale.

⁵¹ Legal Memo at 9-10.

Congress codified in section 111 the technology-forcing elements of the Act—that is, the provisions that require control for control’s sake, as opposed to controls to meet a desired environmental endpoint. Here, Congress required EPA to list a source category if “it causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.”⁵² Once listed, EPA must adopt “standards of performance” for newly constructed or modified sources within that category that “reflects the degree of emission limitation achievable through the application of the best system of emission reduction [(BSER)] which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.”⁵³

But it is one thing to prescribe national standards of performance for sources that have not yet been built and so whose construction can accommodate the constraints imposed by the NSPS. It is quite another to impose uniform technology-forcing measures on existing sources. And so, for existing sources, section 111(d) requires EPA to establish a SIP-like process for setting standards of performance for existing sources in the categories regulated by new source performance standards (NSPS), under which states would submit source-specific plans that varied from EPA guidelines as dictated by “other factors.”⁵⁴

As EPA recognized from its beginning, this statutory architecture left for section 111(d) a very limited role: technology-forcing of controls on existing sources of pollutants neither ubiquitous enough to warrant NAAQS attention nor hazardous enough to warrant section 112 attention.⁵⁵ EPA understood Congress to be directing EPA to pass along as “guidelines” to the states the knowledge accumulated from EPA’s development of NSPS—in terms of the capabilities of control technologies for these orphan pollutants—for the states’ use in developing their own rules for analogous existing sources.⁵⁶ At the same time, though, they would be just guidelines, from which variation could be had if the state could show as to any given source that the national “standard of performance” didn’t fit.

Emission Guidelines under Section 111(d) Have Always Been Based on the Control Technologies Potentially Applicable to “Designated Facilities.” In the rules EPA adopted in 1975 to fulfill its duties under section 111(d), EPA established a general framework under which the adoption of an NSPS for “designated facilities” would be followed by the proposal of “emission guidelines” for “designated pollutants” (defined as any pollutant regulated under the NSPS that are not also covered by either a NAAQS or by section 112 regulation).⁵⁷ The emission guidelines would be mostly informational, documenting for the states’ benefit EPA’s understanding of the health and welfare effects of the “designated pollutants,” a description of the emission controls available, their capabilities, the times frames potentially required for their installation, etc.⁵⁸

After final promulgation of these guidelines, each state would then have nine months to either certify that no designated facilities exist within their jurisdiction, or to submit to EPA a SIP revision either imposing the emission guideline standards on each of their designated facilities, or “provide for the application of less stringent emissions standards or longer compliance schedules ... provided that the State demonstrates with respect to each such facility (or class of facilities): (1) Unreasonable costs of control resulting from plant age, location or basic process design; (2) physical impossibility of installing necessary control equipment; or (3) other factors specific to that facility”⁵⁹

⁵² 42 U.S.C. § 7411(b)(1).

⁵³ 42 U.S.C. § 7411(a)(1).

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

- (1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 7410 of this title under which each State shall submit to the Administrator a plan which establishes standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section [108(a)] or emitted from a source category which is regulated under section [112] but (ii) to which a standard of performance under this section would apply if such existing source were a new source Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to *take into consideration, among other factors, the remaining useful life of the existing source* to which such standard applies.

⁵⁵ See 40 Fed. Reg. 53,340 (Nov. 17, 1975):

[S]ection 111(d) requires control of existing sources of a pollutant if a standard of performance is established for new sources under section 111(b) and the pollutant is not controlled under sections 108-110 or 112. In general this means that control under section 111(d) is appropriate when the pollutant may cause or contribute to endangerment of public health or welfare but is not known to be ‘hazardous’ within the meaning of section 112 and is not controlled under sections 108-110 because, for example, it is not emitted by ‘numerous or diverse’ sources as required by section 108.

⁵⁶ See 40 Fed. Reg. at 53,343 (“Requiring a technology-based approach [in section 111(d)] would also take advantage of the information and expertise available to EPA from its assessment of techniques for control of the same pollutants from the same types of sources under section 111(b)...”).

⁵⁷ See 40 Fed. Reg. at 53,340 (still codified, largely unchanged, at 40 C.F.R. § 60.21).

⁵⁸ *Id.* at 53,346 (then and still codified at 40 C.F.R. § 60.22).

⁵⁹ *Id.* at 53,347 (then and still codified at 40 C.F.R. § 60.24(f)).

EPA has once before tried to use section 111(d) to establish a cap-and-trade program instead of allowing each state to set source-specific limits based on circumstance-adjusted BSER: In the Clean Air Mercury Rule (CAMR), EPA set presumptive mercury emission limits on all coal-fired power plants based on BSER, which it then totaled up to create a national emissions budget.⁶⁰ EPA then distributed that budget as credits among the states to assign to their existing source populations, which could then trade these credits to allow for optimization of control efforts.

But several things are notable about this use of section 111(d). First, it was vacated in *New Jersey v. EPA*,⁶¹ and so it remains true that EPA has never (validly) strayed “over the fenceline” when setting section 111(d) requirements. Second, even had that approach been validated, still it would have compelled no more than source-by-source compliance with adjusted BSER: The rule, in effect, amalgamated the BSER performance of the designated facilities only. Finally, the “other grounds” on which the D.C. Circuit vacated CAMR was its holding that mercury (a pervasive HAP) should have been regulated under section 112, not section 111(d). Perhaps a reviewing court will conclude that EPA’s detour into section 111 for GHGs misreads the statutory map, which directs EPA instead to use sections 108-110 as appropriate to deal with pervasive air pollutants emitted from “numerous and diverse mobile and stationary sources.”⁶²

Where Does EPA Propose to Go with Section 111(d)?

The pending proposal looks nothing like any of the few section 111(d) actions previously taken. As summarized elsewhere in this publication, the ESPS proposal does not establish model emission limits for the variety of source types it purports to regulate (e.g., some variation on the lbs CO₂/MWh limits established for electric generating units (EGUs) in the pending NSPS proposal, customized to the capabilities of the individual source type). Instead, EPA has undertaken to review the present generation mix in each of the fifty states, and to establish for each state the CO₂ intensity of generation that it believes to be achievable by effecting changes not only in the heat rate of existing designated facilities, but also in displacing existing generation with less GHG-intensive generation and reducing demand. In short, EPA proposes that the “best system of emission reduction” is to use fuel-burning generation less, or not at all.

The administrative record includes EPA’s analysis of what it believes to be the optimized mix of generation assets for each state. The end result of EPA’s analysis is to assign each state an interim (2020) and a final (2030) “emission performance goal,” which reflects what EPA expects to be the state-wide average emissions (on a pounds of CO₂ per megawatt-hour (lbs CO₂/MWh) basis) from the universe of existing EGUs within each state. By June of 2016, each state must submit a plan showing to EPA’s satisfaction that it has in place a mixture of control requirements, incentives, etc. demonstrated to ensure that the CO₂ emission rate for all existing EGUs within its jurisdiction will not exceed the CO₂ intensity prescribed for that state by EPA.

EPA now proposes to travel under section 111(d) flag far from its home port:

- Never before has EPA used section 111(d) for a ubiquitous pollutant. Its scant previous uses over the last forty years have been directed at pollutants emitted by a few specialized industries (such as fluorides and landfill gases). Recall that section 111(d)’s design is to pick up unique, industry-specific pollution problems: As EPA noted in 1975, “[q]uite often health and welfare problems caused by [designated pollutants of the type intended to be covered by section 111(d)] are highly localized and thus an extensive procedure, such as the SIPs require, is not justified.”⁶³ EPA has made CO₂ an orphan solely by its decision to decline to regulate CO₂ under the NAAQS program. Had CO₂ been treated (as it arguably should) as a criteria pollutant, emitted as it unquestionably is by “numerous or diverse mobile or stationary sources,” it would not be an orphan, waiting to be adopted by section 111(d) as a “designated pollutant.”⁶⁴
- Never before has EPA successfully used section 111(d) to regulate so broad and well-populated a source category. Again, because section 111(d) was intended to pick up isolated, industry-specific pollution issues (e.g., fluorides from phosphate fertilizer plants, of which there are fewer than 35 scattered around the U.S.), EPA long ago understood that “the number of designated facilities per state should be few.”⁶⁵

⁶⁰ See 70 Fed. Reg. 28,606 (May 18, 2005).

⁶¹ 517 F.3d 574 (D.C. Cir. 2008), *cert denied sub nom. Util. Air Reg. Grp. v. New Jersey*, 555 U.S. 1169 (2009).

⁶² The unsuitability of that process for a global pollutant is the subject of another paper. See C. Dinkins & E. Groten, TREATMENT OF GREENHOUSE CASES UNDER THE CLEAN AIR ACT (LexisNexis July 2010).

⁶³ 40 Fed. Reg. at 53,342.

⁶⁴ A petition seeking to compel EPA to treat GHG as a criteria pollutant has been pending at EPA since 2009. See CENTER FOR BIOLOGICAL DIVERSITY, *Petition to Establish National Pollution Limits for Greenhouse Gases Pursuant to the Clean Air Act* (Dec. 2, 2009), http://www.biologicaldiversity.org/programs/climate_law_institute/global_warming_litigation/clean_air_act/pdfs/Petition_GHG_pollution_cap_12-2-2009.pdf. EPA has taken no action on this petition, and there is no evidence that its proponent(s) have pursued it. No doubt both sides of that transaction fear reaping the whirlwind, and perhaps even the overruling of *Massachusetts v. EPA*, 494 U.S. 497 (2007), as embarking on a GHG NAAQS no doubt would expose the error in Justice Stevens’ assumption that “EPA jurisdiction [over GHG] would lead to no such extreme measures” as had precipitated earlier Supreme Court rulings rejecting grand agency claims of authority absent clear Congressional delegation. Yet it is EPA’s failure to undertake one duty (to use sections 108-110 to regulate ubiquitous air contaminants) that leaves it (arguably) free to regulate under section 111(d).

⁶⁵ 40 Fed. Reg. at 53,345.

- Never before has EPA set performance standards for a state, as opposed to a source of emissions. Instead, emission guidelines, unsurprisingly, have been issued for actual sources, and usually prescribing specific standards for specific operations within the designated facilities. (e.g., 5 ppm of total reduced sulfur from digester systems used at Kraft pulp mills).
- Never before has EPA required so complex and multi-disciplinary an exercise, commanding the consideration and participation not only of each state's air quality regulators, but its utility regulators, its local governments, its appropriators, and even its individual citizens. In fact, EPA has long proclaimed its understanding that "[s]ection 111(d) plans will be *much less complex than the SIPs* [submitted under section 110]."⁶⁶
- Most notably, never before has EPA set any technology-based standard that relies on constraining or even prohibiting production from the entire industry as a "system of emission reduction."

In considering a far less ambitious departure from CAA precedent, the Supreme Court already expressed its unwillingness "to stand on the dock and wave goodbye as EPA embarks on [a] multiyear voyage of discovery."⁶⁷

What Dragons Await?

And so for forty years having used section 111(d) for isolated air pollution issues, EPA now proposes to use it to direct the Nation's means of producing electricity. Actually, it goes a step further: It directs the states to try and do so first. Truly, that is a lot to ask of one obscure sub-section in a law comprehensively dedicated to air pollution, in which Congress otherwise has adopted entire titles (e.g., Title IV for sulfur dioxide controls) when intending Nation-scale regulation of electric utility air emissions. And the intrusiveness and scope of what EPA wrings out of section 111(d) is far greater than directed by Title IV.

As only partially elaborated below, a number of textual and precedential dragons threaten EPA's enterprise. All will be animated by the Supreme Court's most recent cautions about EPA's bold use of the CAA to take on greenhouse gas emissions. In rejecting EPA's conclusion that the Act compels GHG to be treated as a trigger to its stationary source permitting programs, Justice Scalia's majority opinion warned against finding big programs in small, nondescript packages:

EPA's interpretation is also unreasonable because it would bring about an enormous and transformative expansion in EPA's regulatory authority without clear congressional authorization. When an agency claims to discover in a long-extant statute an unheralded power to regulate "a significant portion of the American economy," ... we typically greet its announcement with a measure of skepticism. We expect Congress to speak clearly if it wishes to assign to an agency decisions of vast "economic and political significance." ... The power to require permits for the construction and modification of tens of thousands, and the operation of millions, of small sources nationwide falls comfortably within the class of authorizations that we have been reluctant to read into ambiguous statutory text.⁶⁸

The power to require emission permits, though intrusive, pales relative to the power to establish energy policy for the Nation. As EPA Administrator McCarthy frankly acknowledged, the proposal *is* energy policy not even well disguised in air quality costume:

And the great thing about this proposal is it really is an investment opportunity. **This is not about pollution control.** It's about increased efficiency at our plants It's about investments in renewables and clean energy. It's about investments in people's ability to lower their electricity bills by getting good, clean, efficient appliances, homes, rental units.⁶⁹

Accordingly, we see EPA as unlikely to find it easy to slay all of the following dragons—and more—in its inevitable judicial defense of the recent discovery of so great a power in humble section 111(d).

⁶⁶ *Id.* (emphasis added).

⁶⁷ *UARG v. EPA*, No. 12-1146, slip op. at 23 (U.S. June 23, 2014).

⁶⁸ *UARG v. EPA*, slip op. at 19-20 (citations omitted). This was not Justice Scalia's first warning against finding significant powers in ambiguous Clean Air Act language. He did so as well in *Whitman v. American Trucking*, 531 U.S. 457, 468 (2001), where—writing for all of his colleagues save Justice Breyer, and citing the same precedent as he did in *UARG*—Justice Scalia noted that the absence of clear authority for EPA to consider costs in setting NAAQS was fatal to a claim that EPA was obligated to do so: "Congress, we have held, does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions—it does not, one might say, hide elephants in mouse holes. See *MCI Telecommunications Corp. v. American Telephone & Telegraph Co.*, 512 U.S. 218, 231 (1994); *FDA v. Brown & Williamson Tobacco Corp.*, *supra*, at 159-160. Respondents' textual arguments ultimately founder upon this principle."

⁶⁹ July 23, 2014, Testimony to the Senate Environment and Public Works Committee. See <http://cnsnews.com/news/article/susan-jones/epa-chief-not-about-pollution-controls-investment-strategy>



Regulation of EGUs Under Section 112 Preempts any Regulation Under Section 111(d).

At least one dragon didn't even wait for the ship to cast off: On the day the ESPS proposal hit the *Federal Register*, one company filed in the D.C. Circuit a "Petition for Extraordinary Writ" seeking to prohibit EPA from proceeding with the rulemaking.⁷⁰ Less than two weeks later, nine states, led by West Virginia, filed an amicus brief in support of that petition. Those same states, joined by four more, followed with a D.C. Circuit petition of their own, seeking judicial review not of EPA's act of proposing the rule, but of EPA's final action in 2010 approving a consent decree by which EPA had committed to adopting performance standards for EGUs under section 111(d).⁷¹

Both Murray Energy and the West Virginia petitioners base the substance of their petitions on a phrase in section 111(d)(1)(A) that certainly does appear to prohibit any use of it to regulate electric generating units (EGUs). Extracted in relevant part, the statute extends EPA's authority to "establish[] standards of performance for any existing source for any air pollutant . . . which is not . . . emitted from a source category which is regulated under section [112]" Unquestionably, EGUs are a source category regulated under section 112,⁷² and so it would seem beyond question that the highlighted language would foreclose the use of section 111(d).⁷³ Indeed, in passing on statutory displacement arguments in *AEP v. Connecticut*,⁷⁴ the Supreme Court noted that section 111(d) authority is constrained by actions taken under section 112: "EPA may not employ § [111](d) if existing stationary sources of the pollutant in question are regulated under the national ambient air quality standard program, §§ [108-110], or the "hazardous air pollutants" program, § [112]. See § [111](d)(1)."⁷⁵

EPA, however, describes section 111(d)(1)(A) as "ambiguous," not because the U.S. Code is ambiguous on its face, but because EPA thinks it's ambiguous whether the U.S. Code actually is the law.⁷⁶ According to EPA, the U.S. Code, as quoted above, published an incomplete version of what President G.H.W. Bush signed into law in 1990. EPA elaborates on the legislative history to argue that two different versions of the law were enacted (one by each House of Congress), creating an "ambiguity", the resolution of which is deferred to the implementing agency under *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). But, as Murray Energy notes in its petition, it may not be up to EPA to look behind the codified statute to find codification errors: "The 'Code of Laws of the United States current at any time shall . . . establish prima facie the laws of the United States.' 1 U.S.C. § 204(a). That prima facie evidence is displaced only where the U.S. Code is 'inconsistent' with the Statutes at Large. See *Stephan v. United States*, 319 U.S. 423, 426 (1943)."⁷⁷

EPA has a strong case that two separate sections of the Statutes at Large both effectuate amendments to section 111(d), but it has no case at all that they are inconsistent. Section 108(g) of Public Law 101-549, the 1990 CAA Amendments, as published in the Statutes at Large, contains the following provision in the section of the bill directed to amendments to Title I (in which section 111 is codified):

(g) REGULATION OF EXISTING SOURCES- section 111(d)(1)(A)(i) of the Clean Air Act . . . is amended by striking 'or 112(b)(1)(A)' and inserting 'or emitted from a source category which is regulated under section 112'.⁷⁸

And section 302(a) of P.L. 101-549, which just lists conforming amendments related to the adoption of Title III (the overhaul of section 112), contains the following:

⁷⁰ See *Murray Energy Corp. v. EPA*, No. 14-1112 (D.C. Cir. filed June 13, 2014).

⁷¹ See *West Virginia, et al. v. EPA*, No. 14-1146 (D.C. Cir. filed July 31, 2014).

⁷² See 77 Fed. Reg. 9304 (Feb. 16, 2012) (Mercury and Air Toxics (MATS) rule). Those rules have been upheld on judicial review, see *White Stallion Energy Center, LLC, et al. v. EPA*, 748 F.3d 1222 (D.C. Cir. 2014), although petitions for certiorari are pending. Conceivably, Supreme Court reversal and subsequent vacatur of these rules would remove arguments based on section 112 displacement.

⁷³ EPA's Legal Memo appears intended more to advocate than inform (an observation, to be fair, rightly made of this writing, as well). As one example, in response to this codified language, EPA writes that it "can be read to provide the provision would not cover GHGs because GHGs are emitted from EGUs and EGUs are a source category regulated under section 112." "Can be read" seems at best understated, as there is no other possible reading offered, or even reasonably possible.

⁷⁴ 131 S.Ct. 2527 (2011).

⁷⁵ 131 S.Ct. at n.7.

⁷⁶ See Legal Memo at 21-27.

⁷⁷ *Murray Pet.* at 20.

⁷⁸ 104 Stat. 2399, 2467 (1990).

(a) Section 111(d)(1) of the Clean Air Act is amended by striking ‘112(b)(1)(A)’ and inserting in lieu thereof ‘112(b)’.⁷⁹

Both sections of P.L. 101-549 can be fully incorporated into the Act as amended without any conflict at all. Codifying everything in it, leaving out no change effected by any provision of it, section 111(d)(1)(A)(i) would read as follows [paraphrasing the unaffected pre- and postlude]:

[EPA shall issue emission guidelines requiring states to adopt] standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 108(a) or section 112(b) or emitted from a source category which is regulated under section 112, but (ii) [for which there is a corresponding NSPS].

The underlined phrase is what would be added to the U.S. Code if all of the changes were fully incorporated (updating the cross-reference to the subsection of section 112 where the HAPS list is to be found, post-1990). This creates no conflict at all: Congress simply expanded the list of independent regulatory actions that would displace regulation under section 111(d).

The ultimate question here is whether section 111(a)(1)(D) precludes regulation based on section 112 displacement by pollutant or by source category. EPA opines that the law should favor only pollutant-specific preemption (ignoring section 108(g) of the Statutes at Large), because that would preserve a more robust role for section 111(d).⁸⁰ EPA argues that “the text as presented in the U.S. Code could be read to exclude virtually every pollutant from regulation under section 111(d), because it would be difficult to identify any pollutant that is not emitted from at least one source category that is regulated under 112. We do not need to address this ridiculous result.”⁸¹

But that result is not at all ridiculous. Recall that by 1990, EPA had spent 20 years of regulatory authority under section 111(d) to issue around five technology-based emission guidelines. This would not have evidenced to Congress the importance of retaining ESPS authority, at least in that form.

More importantly, at the same time as Congress was revising section 111(d), it also was transferring to section 112 the technology-forcing function previously lodged in section 111. In fact, Congress dedicated an entire title of the 1990 Amendments (Title III) to this effort. The genesis of Title III is well-known: Overwhelmed by the inability to make the risk-based findings needed to support standards for new and existing sources of HAPs under section 112 as that section had been framed since 1970, EPA had by 1990 developed only about the same number of “national emission standards for hazardous air pollutants” (eight) as it had issued guidelines under section 111(d) (five). Accordingly, Congress wholly rewrote section 112, transforming it into a technology-forcing (“maximum achievable control technology”) model for regulating HAPs, and itself listing (in section 112(b)) 188 HAPs for EPA to go regulate. Having identified the pollutants of interest and directed their maximum control (from a technology-forcing perspective), it is quite conceivable that Congress was perfectly content to strip section 111, and especially section 111(d), of much scope.⁸² But regardless of how one reads the tea leaves of intention, reading the actual words of P.L. 101-549 leaves little doubt that’s what Congress did.

Whether the U.S. Code stands as written (in accordance with 1 U.S.C. § 204(a)) or whether a court looks behind it to the Statutes at Large and gives effect to all of its provisions, EPA loses the ability to issue ESPS for EGUs. EPA “wins” only if a court is willing to find a conflict between two sections of the Statutes at Large where there is none. And even then, given recent Supreme Court squints at *Chevron*, EPA might not get the deference it needs to win.⁸³

⁷⁹ *Id.* at 2574.

⁸⁰ See Legal Memo at 22-27.

⁸¹ *Id.* at 22-23, n.22.

⁸² Perhaps it was an easier legislative compromise for this change to be made than to repeal Section 111(d) altogether. Or perhaps it was left in the event some future source-pollutant combination might fall into gaps left by new Section 112, without speculating on the future existence of such a gap.

⁸³ In *Scialabba v. Cuellar de Osorio*, No. 12-930 (U.S. June 9, 2014), a bare plurality of a fractured Court relied on *Chevron* to suggest deference to the implementing agency in resolving conflicts within the immigration statute. But a concurring opinion written by the Chief Justice, joined by Justice Scalia, saw this not as a matter of interpretation appropriately left to the implementing agency, but as a direct conflict the resolution of which is left to the court:

To the extent the plurality’s opinion could be read to suggest that deference is warranted because of a direct conflict between these clauses, that is wrong. Courts defer to an agency’s reasonable construction of an ambiguous statute because we presume that Congress intended to assign responsibility to resolve the ambiguity to the agency. *Chevron* ... at 843–844. But when Congress assigns to an agency the responsibility for deciding whether a particular group should get relief, it does not do so by simultaneously saying that the group should and that it should not. Direct conflict is not ambiguity, and the resolution of such a conflict is not statutory construction but legislative choice. *Chevron* is not a license for an agency to repair a statute that does not make sense.

Scialabba, slip op. at 1-2 (Roberts, C.J., concurring opinion). Notably, Justice Alito agreed with this principle, even though he dissented in the result. *Scialabba* slip op. at 1 (Alito, J. dissenting opinion) (disagreeing with the plurality opinion that “when two halves of a statute ‘do not easily cohere with each other,’ an agency administering the statute is free to decide which half it will obey.”). Accordingly, the Court seems perfectly split on whether *Chevron* applies when an agency alleges a facially irreconcilable conflict within a statute. Regardless, though, here there is none.

Section 112 displacement is the first and fiercest dragon EPA will face, but EPA will have the early upper hand fending it off. Although section 112 displacement is the substantive centerpiece of both the Murray Energy and West Virginia petitions filed in response to the ESPS proposal, both petitions face substantial procedural headwinds. Murray Energy's petition is a direct challenge to EPA's proposal, yet section 307 of the Act allows for judicial review only of final EPA actions.⁸⁴

The West Virginia petitioners, evidently recognizing this barrier, do identify a "final action" that arguably passes muster under section 307: They seek review of a 2010 consent decree by which EPA agreed to propose and adopt NSPS for coal-fired power plants, and by averring that the subsequent adoption of EGU standards under section 112 (in 2012) and issuance of the ESPS proposal (in 2014) present "grounds-arising-after" sufficient to overcome the normal statutory obligation to have sought review within 60 days of that 2010 final action.⁸⁵ It is not clear, though, how judicial review or even eventual vacatur of that consent decree would necessarily preclude EPA from proceeding with the ESPS rulemaking.

And so while we rate as high EPA's ability to set sail under section 111(d), we rate much lower its prospects of a safe return. One day, it will have to fight off not just the section 112 preemption dragon, but many more besides.



EPA Needs a Valid New Source Performance Standard Before It Can Adopt a Valid Existing Source Performance Standard.

Unquestionably, EPA must have in place an NSPS before adopting any ESPS.⁸⁶ In fact, EPA historically understood that an NSPS rule should be made final before proceeding to propose existing source guidelines.⁸⁷ Arguably, that is even what the statute compels, for it is not possible at the time of proposing an ESPS to know what sources will be subject to it unless one already knows the sources subject to the NSPS. And the opportunity to have the ESPS informed by what is learned through development of the NSPS—a *raison d'être* of the ESPS program—is effectively lost.

EPA has to date only *proposed* an NSPS setting a standard of 1,000-1,100 lbs CO₂/MWh for all covered EGUs (which includes almost any fuel-fired, utility-scale electric generating unit built after January 2014).⁸⁸ Because of a number of legal risks associated with that rulemaking,⁸⁹ EPA undoubtedly understands that the NSPS might well not survive judicial review. If

⁸⁴ See, e.g., *Las Brisas, et. al. v. EPA*, No. 12-1248 (D.C. Cir. order dated Dec. 13, 2012) (dismissing as premature a challenge to EPA's proposal of MACT standards for new EGUs). The *Las Brisas* case, as with virtually all CAA rule challenges, involved complaints about the content of the rule itself (e.g., the record did not suffice to support the level of the standard), and not about whether EPA could promulgate at least some rule on the subject. This may be a useful distinction here, where the argument is that the very issuance of a proposal is itself the action for which judicial review is sought. Section 307(b) can be literally read to support this outcome: Proposal necessarily is "an action of the Administrator in promulgating a rule," and that is what Section 307(b) makes judicially reviewable. The action is final in the sense that it doesn't matter what record EPA develops in response to the proposal or how the rule may change in response to comments. The sole issue that these present petitioners bring is that EPA wholly lacks authority to adopt *any* rule on the subject (due to Section 112 displacement), which is ripe at the moment of proposal. We are not aware of any case, however, in which it has been determined that this distinction makes a difference. While the notion is appealing that a massive rulemaking effort (diverting substantial resources and immediately imposing planning costs on the states and power sector) can be avoided if demonstrably *ultra vires*, still it seems unlikely that the D.C. Circuit would open itself to two-bite litigation. As this article goes to press, however, Murray Energy again obliges us with the opportunity to learn the answer, as it has filed a separate lawsuit in the D.C. Circuit, testing this very concept of finality under Section 307(b). See *Murray Energy Corp. v. EPA*, No. 14-1151 (D.C. Cir. filed Aug. 15, 2014).

⁸⁵ Although Section 307(b)(1) requires petitions for judicial review to be filed within 60 days after the action for which review is sought, it includes an exception if the grounds for review arise after that deadline. In such cases, review must be sought within 60 days of those "grounds-arising-after."

⁸⁶ See 42 U.S.C. § 7411(d)(1)(A)(ii) ("The Administrator shall prescribe regulations which...establishes standards of performance for any existing source for any air pollutant... to which a standard of performance under this section would apply if such existing source were a new source...").

⁸⁷ See 40 Fed. Reg. at 53,345 (Section 111(d) implementing rules to require proposal of emission guidelines after promulgation of corresponding NSPS, so that guidelines would be informed by NSPS rulemaking).

⁸⁸ See 79 Fed. Reg. 1430 (Jan. 8, 2014).

⁸⁹ Among the major issues are (1) the sufficiency of EPA's basis for concluding that carbon capture and sequestration (CCS) is sufficiently proven, especially but not exclusively because the slight evidence it has for that conclusion is drawn from government research projects funded through laws which expressly preclude their use in standard-setting, (2) selection of a BSER (CCS) that can't be used throughout the U.S., (3) EPA's decision to set one standard for incomparable means of generating electricity, and (4) the lack of any finding of the dangers attributable to EGU contributions to global GHG levels, such that the costs of the rules can be weighed against some measure of

the NSPS fails, the necessary predicate for section 111(d) regulation of existing sources fails with it. And so EPA has separately proposed a “modified source” NSPS,⁹⁰ which EPA believes would suffice as predicate for the existing source program even if the “new source” NSPS were vacated.⁹¹ The modified source “NSPS” avoids some of the major errors in the new source rule by declining to treat CCS as the best system of emission reduction, instead allowing for case-by-case evaluation of the modified source’s emissions, with a GHG limit then set based on the ability of the source owner to undertake marginal heat rate improvements at the time of modification. But this is itself a legally questionable approach to section 111(b) standard-setting, which is supposed to be, well, standard.⁹²

This through-the-looking-glass outcome may cause a reviewing court to question the whole enterprise. If the NSPS rules come tumbling down, they will take the ESPS with them.



EPA Can't Require Reductions “Outside the Fenceline”

EPA’s obligation under section 111(d)(1)(A) is to “establish a standard of performance for any existing source,” with “standard of performance” defined to mean “a standard for emissions of air pollutants which reflects the best system of emission reduction”⁹³ EPA’s entire proposal rests on the assumption that the best system of emissions reduction consists of four different building blocks of energy policy, which EPA has applied to the generation mix of each state. The “standard of performance” resulting from this application of BSER is reduced to a single “rate-based emission performance goal” unique to each state to be achieved by 2020, and another (slightly lower) single goal for 2030. The achievement of that goal, however, depends on events and actions “beyond the fenceline” of the “designated facility” (the EGU).

EPA offers two conceptual constructs to justify its decision to assign each state its own “standard of performance.” The first is that all “affected entities”⁹⁴ within a state compose the “source,” such that, for example, the 853 lbs CO₂/MWh assigned to Texas for 2020, represents the application of the BSER to all affected entities within Texas.⁹⁵ The second alternative construct is that EPA can be seen as just regulating the covered EGUs, with the amount of emissions allowed from each state’s population of covered EGUs influenced by the availability of alternatives to dispatching them; in other words, the “BSER” is not to use them as much or even at all.⁹⁶ Both of these constructs struggle not only against statutory language, but against likely incredulity that Congress, in enacting section 111(d), intended to deputize EPA as the Energy Policy Agency.

their benefits (in fact, EPA concedes that “the proposed rule will result in negligible CO₂ emission changes.” 79 Fed. Reg. 1430, 1433 (Jan. 8, 2014)).

⁹⁰ 79 Fed. Reg. 34,960 (June 18, 2014).

⁹¹ See Legal Memo at 13 (“either of those section 111(b) rulemakings will provide the requisite predicate for this rulemaking”).

⁹² The D.C. Circuit has upheld variable standards for EGUs based on the sulfur content of coal burned, *Sierra Club v. Costle*, 657 F.2d 298 (1981), but it is a far leap from bifurcated standards to a completely individualized post-facto determination of applicable emission limitations.

⁹³ 42 U.S.C. § 7411(a)(1).

⁹⁴ “Affected entities” include not just the fuel-fired EGU population of each state, but any other enterprise whose actions wind up included as part of any state’s plan to achieve the assigned emission performance goal. See 79 Fed. Reg. 34,830, 34,956 (proposed definition of “affected entity”).

⁹⁵ See, e.g., Legal Memo at 13-14:

The EPA is proposing two alternative approaches for the “best system of emission reduction . . . adequately demonstrated” for fossil fuel-fired EGUs, each of which is based on methods that have [been] employed for reducing emissions of air pollutants, including, in some cases, CO₂, from these sources. The first identifies the combination of the four building blocks as the BSER. These include operational improvements and equipment upgrades that the coal-fired steam-generating EGUs in the state may undertake to improve their heat rate (building block 1) and increases in, or retention of, zero- or low-emitting generation, as well as measures to reduce demand for generation, all of which, taken together, displace, or avoid the need for, generation from the affected EGUs (building blocks 2, 3, and 4). All of these measures are components of a “system of emission reduction” for the affected EGUs because they either improve the carbon intensity of the affected EGUs in generating electricity or, because of the integrated nature of the electricity grid and the fungibility of electricity and electricity services, they displace or avoid the need for generation from those sources and thereby reduce the emissions from those sources. Moreover, those measures may be undertaken by the affected EGUs themselves and, in the case of building blocks 2, 3, and 4, they may be required by the states.

⁹⁶ See, e.g., Legal Memo at 15-16 (emphasis added):

For the alternative approach for the BSER, the EPA is identifying the “system of emission reduction” as including, in addition to building block 1, the reduction of affected fossil fuel-fired EGUs’ mass emissions achievable through reductions

EPA Can't Treat an Entire State or Even Region as a "Source"

Under section 111(d), EPA's obligation is to establish "standards of performance for any existing source," and so by definition the "standard of performance" must be applicable to ("for") "the existing source." An "existing source" means any stationary source other than a new source.⁹⁷ And so any proposed standard of performance necessarily identifies the "stationary source" to which it applies. The "standard of performance" that EPA proposes (e.g., 853 lbs CO₂/MWh for Texas) is applicable to the State, and is based on what EPA has determined is achievable by application of BSER (the four building blocks) to the generation mix of that state. Accordingly, and so—in this first construct—the State must be the "stationary source."

This seems rather impossible, given that "states" are wholly distinguished from "stationary sources" in section 111: The former is regulator, the latter the subject of regulation.

And this state-as-stationary-source construct grinds other statutory gears, as well.

"The term 'stationary source' means any building, structure, facility, or installation which emits or may emit any air pollutant"⁹⁸ Yes, in the case that serves as the very fount of EPA discretion to interpret an ambiguous statute, the Supreme Court upheld EPA's decision to adopt a *plant-wide* meaning to the section 302(j) definition of stationary source, but not even in EPA's wildest *Chevron* dreams could this definition be read to comprise an entire *state*. Besides, the section 302(j) definition construed in *Chevron* is *broader* than the one that governs here, as the Supreme Court then noted: "The definition of the term 'stationary source' in §111(a)(3) refers to 'any building, structure, facility, or installation' which emits air pollution. . . . This definition is applicable only to the NSPS program by the express terms of the statute; the text of the statute does not make this definition applicable to the permit program." *Chevron*, 467 U.S. at 858-59.

As for the definition that does govern, in section 111(a)(3), EPA has long been deprived of the ability to set plant-wide NSPS, much less state-wide ones. It had tried to do so early in the development of the NSPS program, adopting for the nonferrous smelting industry an NSPS rule that would not be triggered except by plant-wide emission increases. Sierra Club challenged that rule as inconsistent with the section 111(a)(3).⁹⁹ In that case, *ASARCO Inc. v. EPA*, "Sierra argue[d] that the Act defines a 'source' as an individual facility, as distinguished from a combination of facilities such as a plant, and that the bubble concept must therefore be rejected in toto."¹⁰⁰ And "EPA respond[ed] that the 'broad' statutory definition of stationary source gives it 'discretion' to define a stationary source as either a single facility or a combination of facilities."¹⁰¹ EPA lost: "We find this response unpersuasive. The regulations plainly indicate that EPA has attempted to change the basic unit to which the NSPSs apply from a single building, structure, facility, or installation (the unit prescribed in the statute) to a combination of such units. The agency has no authority to rewrite the statute in this fashion."¹⁰² And so EPA may not even define the "stationary source" for section 111 purposes as an entire plant, much less as an entire state.

In its 104-page Legal Memo, EPA says not one word about how its decision to treat states as "stationary sources" can be squared with the statute's definition of "stationary source." In fact, there is not one mention of section 111(a)(3), or of *ASARCO v. EPA*, anywhere in that memorandum.

"Don't Use It" Cannot Rightly Be Called the "Best System of Emission Reduction"

Perhaps the foregoing textual problem is why EPA's Legal Memo also attempts another justification for its national energy plan. In this alternative, it is "only" each state's population of fuel-fired EGUs that comprise the regulated "stationary source," and the BSER is not to run them. According to EPA, the availability of alternative sources of generation or reduced demand allows the designated facilities to be run less. By how much depends on the state's existing generation mix, and so the BSER (i.e., how little the EGU can be run) varies from state to state.

BSER is not statutorily defined, but we know several aspects of its meaning from text. First, it calls for emission reduction, not production reduction. Second, we know that it must take into account the costs of achieving the reduction. Accordingly,

in generation of specified amounts from those EGUs. Under this approach, the measures in **building blocks 2, 3, and 4 would not be components of the system of emission reduction, but instead would serve as bases for quantifying the reduction in emissions resulting from the reduction in generation at affected EGUs.** In light of the available sources of replacement generation through the measures in the building blocks, this approach also meets the criteria for being the "best" system because of, among other things, the emission reductions it would achieve, its reasonable cost, its promotion of technological development, as well as the fact that under this approach, the reliability of the electricity system would be maintained. The approach of reduced generation is also "adequately demonstrated" because of the ability of affected EGUs to adjust their own generation, the authority of the state to impose requirements, and the fact that other entities that operate in the various types of markets in the states can be expected to respond to the reduction in generation from the fossil-fuel fired EGUs by undertaking the measures in the building blocks or other actions that would assure reliability.

⁹⁷ 42 U.S.C. § 7411(a)(6).

⁹⁸ 42 U.S.C. § 7411(a)(3).

⁹⁹ See *ASARCO Inc. v. EPA*, 578 F.2d 319 (D.C. Cir. 1978).

¹⁰⁰ *Id.* at 325

¹⁰¹ *Id.* at 326

¹⁰² *Id.* at 327 (parentheses added for clarity).

BSER necessarily carries with it production neutrality. And, as discussed earlier, it must be applicable to an existing stationary source.

We get other indicators from section 111 that Congress intends a “standard of performance” to reflect only the capability of control technologies that may be applied to emission points at the specific facility under consideration. This is because section 111(h)(1) provides the following exception to setting section 111 “standards of performance” (with emphasis added):

(1) For purposes of this section, if in the judgment of the Administrator, it is not feasible to prescribe or enforce a standard of performance, he may instead promulgate a design, equipment, work practice, or operational standard, or combination thereof, which reflects the best *technological* system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

And so we know that “operational standards” (which might include “use it less” if such a command were otherwise legal) are not “standards of performance” and thus not the “best system of emission reduction” as that term is used in the definition. Further, the only time “the best *technological* system of emissions reduction” can be commanded in lieu of “standards of performance” (based on BSER) is for addressing sources of fugitive emissions.¹⁰³ Section 111, in short, contemplates—consistent with typical air quality control practice—that NSPS and ESPS shall be point-source specific emission limitations, except for sources of fugitive emissions.¹⁰⁴

EPA identifies no relevant precedent for treating “don’t run that” as the BSER under section 111.¹⁰⁵ Yet no matter the source category, it always has been and forever will be true that not running a source of air pollution will reduce its emissions. Wouldn’t running it less or not at all then be the BSER for a phosphate fertilizer plant? Or a Kraft pulp mill? Or any of the other categories for which EPA has developed ESPS? In fact, given that BSER is the objective of NSPS, as well, shouldn’t EPA explore “you don’t need to build that” as the BSER for all of these categories? Unless EPA is willing to claim that the CAA authorizes or perhaps even compels it—in the guise of BSER—to prepare Five-Year Plans for all U.S. industries, it cannot defend the notion that the statute authorizes it to do so here.

Although not presented directly in response to concerns that its claim of authority to direct each state’s generation mix is the slipperiest of slopes, EPA’s Legal Memo does go on at length about how commanding reductions in generation at higher-emitting plants is justified by the “interconnected nature” of the nation’s electricity grid:

Central to our BSER determination is the fact that the nation’s electricity needs are being met, and have for many decades been met, through a grid formed by a network connecting groups of EGUs with each other and, ultimately, with the end-users of electricity.¹⁰⁶

Elsewhere, EPA opines that it can regulate anywhere in this “system”:

Based on these interpretations, for existing sources in the electric utility industry, we propose that the term “system of emission reduction” is sufficiently broad to include the measures in building blocks 2, 3, and 4 because they are part of the interconnected electricity sector and result in reduced utilization, and therefore reduced emissions, from the higher emitting fossil fuel-fired power plants.¹⁰⁷

¹⁰³ As noted above, Section 111(h) allows for design, equipment, work practice, or operational standards only when “it is not feasible to prescribe or enforce a standard of performance,” a circumstance narrowly drawn to address fugitive emission sources:

(2) For the purpose of this subsection, the phrase “not feasible to prescribe or enforce a standard of performance” means any situation in which the Administrator determines that

(A) a pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or

(B) the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations.

42 U.S.C. § 7411(h)(2).

¹⁰⁴ EPA’s Legal Memo includes a remarkable analysis purporting to show that the distinction between “best system of emission reduction” and “best technological system of continuous emission reduction” means that BSER doesn’t contemplate use of technology. See Legal Memo at 55-57. This is absurd: If “BSER” was broad enough to allow for consideration of end-of-pipe control technology and anything else besides, there would have been no need to create the exception. EPA knows perfectly well that the point of these provisions (as amended in 1990) was to allow EPA to describe the technology (design, equipment, work practice, or operational standard) to be used to minimize fugitive emissions when it is not possible (due to lack of capture or measurement) to prescribe a point-source specific numeric emission limitation (“standard of performance”).

¹⁰⁵ The closest EPA comes is a mention of the CAMR, and of its municipal waste combustor (MWC) rules. See Legal Memo at 63-64. The irrelevance of the CAMR we address *supra*, at 3. And the MWC rule example could not more clearly confirm that the stationary source stops at the fence-line. The only averaging that the cited MWC rule allows is for NOx emissions among individual regulated emission points *within the plant*. See 40 C.F.R. § 60.33b(d)(1).

¹⁰⁶ Legal Memo at 43.

¹⁰⁷ Legal Memo at 53-54.

Somewhat shockingly, the next sentence avers that “[t]his proposed reading is clear as a matter of Chevron step 1 because of the breadth of the term, ‘system,’ in the context in which it is found.” Were that correct, EPA not only can but must be in the business of deciding how much power is needed, how it should be generated, and how much cost increase can be borne. And were that correct, EPA must undertake the same economic planning for all NSPS development, for section 111(b), too, is based on the “best system of emission reduction.”

But all economic endeavors are in their ways as interconnected as electricity generation. Some are obvious, such as oil and gas production and petrochemicals, which are as interconnected by pipeline as power plants and their customers are by wire. Does this mean that EPA is authorized to determine how much natural gas or ethylene each state needs to produce? And it doesn’t take a pipe or wire to make “systems” out of any air emitting activity: Is EPA authorized to decide that maybe we could pave roads with asphalt so we don’t need so much concrete and cement, such that BSER for cement plants is “don’t produce so much.” Or maybe it prefers concrete to asphalt, and would direct the opposite? Is EPA authorized to direct crop rotation so that the Nation’s demand for phosphate fertilizer is reduced? Or, even more bold, to tell states they must do so, as it does for the power generation business in the ESPS? And what is EPA doing stopping at state lines? The generation system doesn’t stop at state lines, but is governed by regional dispatching authorities to one degree or another across the U.S.

Justice Scalia’s recent opinion on EPA’s authority to direct “best available control technology” (BACT) in case-by-case permitting confirms a judicial willingness to put limits on what EPA can do under cover of CAA technology-forcing mechanisms. Although *UARG v. EPA* addressed concerns about BACT and not BSER, the concepts are similar and the issues the same.¹⁰⁸ Responding to petitioners who expressed concern that “BACT” determinations would be used to unduly involve EPA in the Nation’s productive capacity, Justice Scalia responded as follows:

[A]ssuming without deciding that BACT may be used to force some improvements in energy efficiency, there are important limitations on BACT that may work to mitigate petitioners’ concerns about “unbounded” regulatory authority. For one, BACT is based on “control technology” for the applicant’s “proposed facility,” §7475(a)(4); therefore, it has long been held that BACT cannot be used to order a fundamental redesign of the facility. See, e.g., *Sierra Club v. EPA*, 499 F. 3d 653, 654–655 (CA7 2007); For another, EPA has long interpreted BACT as required only for pollutants that the source itself emits, see 44 Fed. Reg. 51947 (1979); accordingly, EPA acknowledges that BACT may not be used to require “reductions in a facility’s demand for energy from the electric grid.” Guidance 24.¹⁰⁹

Further,

applying BACT to greenhouse gases is not so disastrously unworkable, and need not result in such a dramatic expansion of agency authority, as to convince us that EPA’s interpretation is unreasonable. We are not talking about extending EPA jurisdiction over millions of previously unregulated entities, but about moderately increasing the demands EPA (or a state permitting authority) can make of entities already subject to its regulation. And it is not yet clear that EPA’s demands will be of a significantly different character from those traditionally associated with PSD review. In short, the record before us does not establish that the BACT provision as written is incapable of being sensibly applied to greenhouse gases.

We acknowledge the potential for greenhouse-gas BACT to lead to an unreasonable and unanticipated degree of regulation, and our decision should not be taken as an endorsement of all aspects of EPA’s current approach, nor as a free rein for any future regulatory application of BACT in this distinct context. Our narrow holding is that nothing in the statute categorically prohibits EPA from interpreting the BACT provision to apply to greenhouse gases emitted by “anyway” sources.¹¹⁰

Now EPA proposes as BSER all of the abuses foretold for BACT.

¹⁰⁸ EPA makes much of the use of the word “system” in the term “best system of emission reduction” to suggest that it may consider entire economic systems as the subject of regulation under the BSER rubric: “The CAA does not define the term, ‘system,’ and as a result, that term should be given its ordinary, everyday meaning: “a set of things working together as parts of a mechanism or interconnecting network; a complex whole.” Legal Memo at 36. But the word “system” also appears in the definition of BACT. See § CAA 169(3) (“The term ‘best available control technology’ means an emission . . . which the permitting authority . . . determines is achievable . . . through application of . . . systems . . .”). And so if the Act’s reference to “systems” reflects an obligation to consider in a technology-based emission limit determination the economic systems in which the subject source operates, then EPA would become obligated to do so not just in setting Section 111 standards but in making BACT determinations.

¹⁰⁹ Slip op at 26-27

¹¹⁰ *Id.* at 28.



The ESPS Can't Be More Stringent Than or Regulate a Different Source from the Corresponding NSPS.

Also through the looking glass is the issuance of ESPS more stringent than NSPS, targeting a different “source”: Existing EGUs will bear the burden of reducing emissions not only by an amount representative of supposed heat rate improvements available to the source itself, but also by whatever amounts its production could be further reduced based on EPA’s estimate of how much electricity should be generated from other sources. The net effect is that fully half of the “State rate-based emission performance goals” in the ESPS are *more* stringent than the applicable NSPS (of 1,000-1,100 lbs CO₂/MWh).

And the standards are not standards at all: Under section 111(d), EPA is to set national standards and states are supposed to justify departures from them based on individualized source considerations. Here EPA is setting different standards from the outset.



EPA Needs to Be Able to Do What It Asks of the States.

Under section 111(d)(2)(A), as with other SIP-based obligations, Congress obligated EPA to act if a state does not: “The Administrator shall have the same authority . . . to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan as he would have under section [110(c)] in the case of failure to submit an implementation plan” Necessarily, then, whatever EPA requires must be something that it can lawfully do if the state does not. That may be tested if the ESPS are adopted as proposed, given reports that at least several states already have expressed plans to leave EPA to execute its own rules.

While EPA certainly could adopt and impose emission limitations on “existing sources,” it has no authority whatsoever to prescribe state-wide energy policy, as it is directing the states to do for themselves. EPA cannot identify in the CAA any provision that authorizes it to establish and enforce renewable portfolio standards (RPS), to make dispatch decisions, to provide rebates for programmable thermostats, or to undertake any of the other notions that it has for Blocks 2-4 of its “best system of emission reduction.” And so those blocks must be outside of the options delegated to EPA by Congress under section 111.



EPA's Requirements Conflict with State and Federal Utility Regulation.

A related problem arises from EPA’s effort to force state and even federal (for regional systems) utility regulators to do its bidding. As further elaborated in [“EPA Proposal Effectively Directs States to Compel Reduced Operating Hours of Coal Fired Generators in Order to Lower CO₂ Emissions”](#), the statutes governing those regulatory processes typically require consideration only of cost and reliability when approving generation projects and rates, except as may be allowed under specific, legislatively authorized RPS standards. EPA’s assumptions about each state’s capabilities fail to account for the fact that slowing or shuttering perfectly good coal and gas plants and replacing them with windmills and solar arrays generally raise

costs and diminish reliability. The market, as monitored and managed by the utility regulatory system and system operators, takes care of optimizing the generation mix from these two standpoints. The ESPS can only disturb the intended operation of those regulatory systems.



EPA Lacks the Record Needed to Persuade a Court that EPA Needs to Win this to Provide Meaningful Environmental Protection.

The foregoing discussion identifies only some of the textual dragons that EPA will have to slay in order to save its ESPS. Its normal means of gaining the judicial audience's sympathy is to plead that what it is doing will save mankind, or at least is good for it. Although the proposed rule includes efforts in that regard,¹¹¹ nowhere does EPA actually show what good will come from its rules. Indeed, EPA disclaims the obligation to do so.

More specifically, EPA maintains that it need not find that greenhouse gas emissions from the sources it proposes to regulate endanger public health to such an extent that their regulation would mitigate a meaningful portion of the identified danger.¹¹² Instead, EPA maintains (1) that having found that power plants' emissions of criteria pollutants endanger public health and welfare, it can (or even must) then regulate any other pollutant from power plants without any attribution of danger from that other pollutant,¹¹³ and (2) in any event, its endangerment finding for GHG emissions from mobile sources suffices to establish endangerment from power plants' emissions of GHG, because the magnitude of GHG from power plants is the same magnitude as that emitted from cars.¹¹⁴ These views conflict with constraints imposed by Congress, which require EPA to show that the source category's emissions significantly contribute to an identified danger. Absent such a showing, EPA risks adopting a rule with costs disproportional to benefits, and without the rational basis that EPA acknowledges it must provide to support any rule. It also lacks a basis on which to convince a court that vacating its rules will yield meaningful, measurable environmental consequences.

EPA's Endangerment Finding for Cars Does Not Alleviate Its Obligation to Make a Finding of Endangerment from EGUs.

The Act should not be read as allowing EPA to use a finding made for one source-pollutant combination (in this case, GHG emissions from cars) to support regulatory action with respect to another source-pollutant combination (in this case, CO₂ emissions from power plants). The 2009 endangerment finding on which EPA would rest its actions for power plants was made under section 202. The Clean Air Act includes a variety of other provisions that authorize or even compel regulatory action based on a source-specific finding of endangerment. Section 202 compels regulation of tailpipe emissions whenever the Administrator finds that car emissions "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health and welfare." Some of the Clean Air Act's other endangerment provisions—such as those for non-road engines and fuel additives—require specific studies, and then prescribe quite carefully the rules to be adopted based on the dangers found. By way of another example, section 108 compels EPA to develop air quality criteria and ultimately national ambient air quality standards (NAAQS) based on findings of endangerment. Most notably, of course, the Act also compels the development of NSPS regulations for a source category if in the Administrator's judgment, that source category "causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health of welfare." The very existence of multiple authorizations with limitations on and compulsions of regulatory action specific to context compels the conclusion that EPA must make findings specific to the combination of source and pollutant intended to be regulated. To read the Act to mean that a singular, abstract finding of danger from GHG allows (or even compels) regulation from any source of GHG emissions would be to read out the rest of the section-specific delegations of powers and obligations scattered throughout the Act, each of which is a separate and often quite different delegation of power and authority. Perhaps EPA could make such a finding, but it has not.

¹¹¹ See 79 Fed. Reg. at 34,841-34,834 (reprising the parade of horrors outlined in the 2009 endangerment finding). Nowhere, however, does EPA explain how or by how much the ESPS will change any of those outcomes.

¹¹² EPA maintains that the sufficiency of the endangerment finding to support action under Section 111 is addressed in the context of its proposal and adoption of the NSPS. See Legal Memo at 28. Accordingly, this section addresses the issue as presented by the NSPS proposal.

¹¹³ 79 Fed. Reg. at 1453-1454.

¹¹⁴ See, e.g., Legal Memo at 28.

Absent a Finding of Substantial Danger Specifically Attributable to the Regulated Source Category, the Proposal Lacks a Rational Basis.

An agency provides no rational basis for regulation absent a showing that its proposed rules will have a meaningful effect on the dangers it's trying to mitigate. Here, EPA declines to show any effect from its rules, much less a meaningful one. The NSPS proposal, in fact, concedes that it will have no effect on atmospheric CO₂, and the ESPS proposal declines to do so, as well.¹¹⁵ All it provides are estimates of reduced emissions, and *nothing* about how that presumed reduction will change atmospheric GHG concentrations, much less how that (unquantified) change in concentration would mitigate harm. Instead, EPA points to generalized risks such as “climate change”—a risk that exists independent of human activities, regardless of any anthropogenic influence—which EPA believes will result from increased GHG concentrations in the atmosphere. It has not shown how its chosen standards, or any standards governing U.S. power plants, would meaningfully address the climate-related effects it invokes as the basis for regulation. And this relieves it from an essential constraint on agency action—that agencies show their chosen level of regulation is the least restrictive means to achieve stated public health goals.¹¹⁶

By requiring that EPA first find that emissions of an individual pollutant from a particular source category endangers the public, Congress set the stage for EPA to promulgate rules to address proven endangerment, so as to avoid potentially useless regulation. An unsurprising consequence of EPA's failure to make these prerequisite findings is performance standards that do not address endangerment. EPA must find that CO₂ endangers the public and that power plants' emissions of it causes or significantly contributes to that endangerment, such that application of BSER would meaningfully mitigate the identified danger.

This failure to link a specific problem to a demonstrated solution also leaves a reviewing court without much incentive to find some way to uphold EPA rules that depend on what can charitably be described as adventuresome statutory readings.

How Will These Dragons Be Confronted?

Assuming EPA sticks to the White House schedule, the ESPS will go final in June 2015. At that time, presumably, we will see EPA's parries. And, if past is prologue, we also will see a final rule not meaningfully different from the proposal.

Given the innumerable petitions for review that will follow, the amount of time needed to coordinate among the parties (to address the D.C. Circuit's requirements for combined briefing among aligned parties),¹¹⁷ the probability of needing to coordinate among the modified source rule and ESPS dockets, the possibility of stay motion proceedings, etc., it is easy to see the section 307(b) proceedings on this rule taking at least as long as did the challenges to the initial round of EPA GHG control rules (roughly two and one-half years from petitions to panel opinion). Applying that guesstimate, at least by the time of D.C. Circuit oral argument (circa mid-2017), the administration defending the rules will be different from the one that promulgated them.

Based on the above challenges, and more still, EPA might have a difficult time defending its rule even with a favorable panel, and even if it still is wholeheartedly committed to their defense. If it loses at the D.C. Circuit, it is not certain that EPA would seek Supreme Court review. On the other hand, if the petitioners lose, there is enough at stake to ensure certiorari petitions, and the fact that these rules fairly clearly cross lines against which the *UARG* majority warned, the grant of certiorari seems certain. In any event, that means litigation will leave the ESPS uncertain at least until 2019. If, at the end, EPA has sailed past all the dragons, the states will have little time to do what the rules would require. The odds of safe passage, however, seem slight. ■

¹¹⁵ Although EGUs may contribute a substantial fraction of U.S. GHG emissions, the overall contribution of U.S. EGU emissions to global GHG concentrations is infinitesimal and their effect on climate even lower: “Using a simple, publically [sic] available, climate model emulator called MAGICC that was in part developed through support of the EPA, we ran the numbers as to how much future temperature rise would be averted by a complete adoption and adherence to the EPA's new carbon dioxide restrictions. The answer? Less than two one-hundredths of a degree Celsius by the year 2100. 0.018°C to be exact.” <http://www.cato.org/blog/002degc-temperature-rise-averted-vital-number-missing-epas-numbers-fact-sheet>. This outcome cannot be dismissed simply because it was generated by scientists working for the Cato Institute. It is fully consistent with EPA's own findings in the context of finding endangerment from the other major U.S. emitter, cars, where EPA's own models found similarly immeasurable effects from its automotive emissions standards. See 75 Fed. Reg. at 25,496 Table III.F.3-1 (estimating 0.006 -0.018°C decrease in global temperature by 2100 in consequence of the EPA/NHTSA rules setting GHG limits on new cars and light-duty trucks). But the main point here is that EPA does not provide an answer to how the climate will differ before and after its rules, whatever that answer may be.

¹¹⁶ The argument is not that EPA must do comparative cost-benefit analyses to justify a proper level of standards. Cf. *Essex Chemical v. Ruckelshaus*, 486 F.2d 427 (D.C. Cir. 1973) (holding that EPA need not undertake such analyses as a predicate to proposing standards, but must consider such information if presented during the comment process). But where EPA has not even found that the regulated source category significantly contributes to the identified danger, it has no basis to conclude that regulating that source category will significantly reduce the danger.

¹¹⁷ As is too often the case, the abundance of significant weaknesses in the rule, combined with the number and breadth of interests affected, may, paradoxically, make the challenges more challenging. Circuit practice tends to confine all parties on each side to join one brief, maybe two. The end result often reads like the committee work product that it is, without a common voice, reduced to the lowest common denominator, and yet without all points included.

EPA Proposal Effectively Directs States to Compel Reduced Operating Hours of Coal Fired Generators in Order to Lower CO₂ Emissions

By John Decker and Stephen Angle

A cornerstone of EPA's proposed existing source performance standards ("ESPS") for greenhouse gases ("GHGs") is the assumption that a portion of the energy generated by coal-fired generation will be replaced with energy from less carbon-intensive sources of electric energy. The Clean Air Act ("CAA") provides EPA no explicit authority to compel that electric generating units ("EGUs") using less carbon-intensive sources, specifically natural gas combined cycle ("NGCC") EGUs, increase generation levels to compensate for lower production by coal-fired EGUs. EPA does have authority to direct a state to use the best system of emission reduction ("BSER") as emission guideline that must be achieved in its implementation plan for an approved ESPS. Based on this authority EPA has concluded that the BSER needed to achieve compliance with a final ESPS should include, as one of four building blocks, GHG emission reductions that assume reduced hours of generation at existing coal-fired EGUs.¹¹⁸ EPA projects that a prescribed limitation in operation of coal-fired EGUs will engender an economically rational increased level of production from NGCCs. EPA also provides data to demonstrate that a regional plan negotiated among two or more states to collectively meet ESPS may require a lesser reduction in hours of operation for coal-fired EGUs.¹¹⁹

What Assumptions Underlie EPA's Conclusion that NGCC-Based EGUs Will Be Able to Replace Reduced Production from Coal-Fired EGUs?

The three electric interconnections in the United States each comprise a vast, highly integrated machine designed to simultaneously match demand for electric energy with the production of electric energy.¹²⁰ As the EPA proposed rule notes, operation of electric systems requires both capacity to produce the constantly changing level of energy required, without interruption, and the infrastructure necessary to deliver the energy reliably.¹²¹ Each interconnection must have sufficient generating reserves to instantly replace energy that becomes unavailable due to service interruption in generation or transmission. Each interconnection must have a transmission system capable of delivering energy to load while maintaining the voltage support needed to transmit alternating current electricity.

EPA Assumes NGCCs Will Provide Some of Coal-Fired EGUs' Historic Base Load Generation Service

EPA envisions that implementation of its proposed rule will produce two significant changes affecting the current fleet of coal-fired generation in the United States. One is a substantial retirement of existing coal-fired EGUs.¹²² The second is a reduction in overall energy production from the coal-fired EGUs that remain in operation, compared to historic levels.¹²³ The reduction in coal-fired energy production will result from a state mandate. EPA's proposal offers data to support its assumption that both currently installed and new NGCC EGUs will operate at a higher level of utilization, compensating for the reduced energy production from coal-fired EGUs.¹²⁴ The anticipated displacement of highly carbon-intensive, coal-fired EGU energy production with less carbon-intensive, NGCC-based energy production is a major element of EPA's proposal to reduce CO₂ production. EPA estimates that implementation of blocks one and two of its proposed BSER will account for over 80 percent of the projected reduction in CO₂ emissions for 2020.¹²⁵ Implicit in this projection is the assumption that the state

¹¹⁸ 79 Fed. Reg. at 34,857 (June 18, 2014).

¹¹⁹ *Id.* at 34,900. See also Memo: Emission Reductions, Costs, Benefits, and Economic Impacts Associated with Building Blocks 1 and 2, Table 5 [*hereinafter* Emissions Impact Memo]. The document is included within Clean Power Plan Proposed Rule Technical Documents, available at <http://ww2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule-technical-documents>. The Emission Impact Memo contains numerous tables projecting the differing impacts of a state-specific versus a regional approach to implement the proposed rule.

¹²⁰ The three electric interconnections that operate in the United States are the Eastern Interconnection, the Western Interconnection, and the Electric Reliability Council of Texas. The predominant operating characteristic of each is a web of alternating current electric transmission lines which allow, subject to certain operating and reliability criteria, a free flow of energy over the path of least electrical resistance. This characteristic is the underlying condition for least cost economic dispatch, whereby, subject to the operating and reliability criteria, generation can be dispatched from lowest cost to highest cost to meet the collective requirements of the Interconnection. The three interconnections have no direct alternating current transmission lines that connect them to the other interconnections. They do have limited direct current transmission facilities that permit scheduled interchanges of electric energy.

¹²¹ Fed. Reg. at 34,857. EPA also notes that implementation of its proposed rule requires an increase in natural gas usage and production. *Id.* This aspect of the rule is not further discussed, as the authors assume that readers are well acquainted with the prospects for increased natural gas production.

¹²² See Emission Impact Memo at p. 3-1, Table 1.

¹²³ *Id.*, at p. 3-4, Table 5.

¹²⁴ *Id.*

¹²⁵ EPA estimates that the combination of increased efficiency in coal-fired EGUs that are not retired and the increased use of NGCC-based EGUs, would together produce a 22 percent reduction in CO₂ emissions in 2020, based on a state level implementation of the proposal,

ordered dispatch limitations for installed coal-fired EGUs, and the resulting increase in dispatch levels for NGCC-based EGUs will result in a fundamental reordering of historic levels of dispatch. Coal-fired EGUs will cease to operate primarily as base load EGUs and will be dispatched more often as intermediate units. Conversely, NGCC-based EGUs will migrate from a primarily intermediate dispatch position to operate more often as base load EGUs.¹²⁶

EPA Assumes that Base Load NGCC Operation Is Technically Feasible

EPA references recent changes in relative levels of coal-fired EGU and NGCC-based EGU energy production to support its conclusion that its block two proposal is technically feasible. It notes that in the 2012 winter season and the 2012 summer season, about 16 percent and 19 percent, respectively, of existing NGCCs operated at 70 percent or more utilization for the entire season.¹²⁷ EPA compares this level of utilization to 10 percent of all NGCCs operating at a 70 percent utilization rate for 2012. From these data, EPA concludes that fleet operation of NGCC capacity at a 70 percent overall operation is feasible.¹²⁸ The projected 2020 dispatch impact of an assumed NGCC-based EGU average utilization rate of no more than 70 percent would increase energy produced from NGCCs (existing and new) from 1,088 GWh to 1,331 GWh. For pulverized coal EGUs, the 2020 dispatch would represent a decline from the 2012 base case of 1,665 GWh to 1,435 GWh.¹²⁹ These results reflect an analysis limited to implementation of only blocks one and two of the proposed BSR.

EPA Assumes that Electric Transmission and Gas Pipeline Infrastructure Will Be Adequate to Support Higher Utilization of NGCC-Based EGUs

EPA explicitly recognizes that successful implementation of its block one and two elements may be affected by limits in the operating capabilities of natural gas pipeline and electric transmission infrastructure.¹³⁰ EPA suggests that any needed adjustments to existing infrastructure for both pipelines and transmission should be achievable. It notes that the natural gas pipeline system is already supporting NGCC unit utilization rates of 60 percent or more in peak hours.¹³¹ EPA also notes that it has proposed state options that provide flexibility in the emission guidelines, thus permitting a state to avoid problems “even if isolated natural gas [pipeline] or electricity system constraints were to limit NGCC unit utilization rates in certain locations in certain hours” because this limitation “would not prevent an increase in NGCC generation overall across a state or broader region and across all hours.”¹³² Finally, EPA notes that “pipeline and transmission planners have repeatedly demonstrated the ability to methodically relieve bottlenecks and expand capacity.”¹³³ However, the support for this assumption relies on statistics regarding overall additions to pipeline and transmission capacity.¹³⁴ EPA could have better supported this assumption if it offered an analysis of the ability to address particular constraints rather than general capacity additions. This observation is especially relevant for transmission upgrades, which require state and not federal siting approval.

EPA’s assumptions about the adequacy of transmission infrastructure could be buttressed if EPA had more explicitly analyzed the reliability implications of its changed dispatch and how the changes might affect reliable operation of transmission systems. Transmission systems require that voltage be maintained at certain levels in order to support scheduled levels of electron flow necessary to match electric energy production to concurrent demand for energy. If voltage is not maintained at required levels, the transmission of energy will collapse and often results in cascading failures at other points on the system. When generators are added to a transmission system, North American Electric Reliability Corporation (“NERC”) standards require that the generator be assigned a responsibility for local voltage. The responsibility requires that the generator be designed to meet a defined level of voltage support. The retirement of EGUs or changes in generation patterns can affect the availability of necessary local voltage support. EPA has analyzed the viability of anticipated changes in generation patterns by contracting with a commercial entity to run the entity’s proprietary program for dispatch analysis.¹³⁵ The sufficiency of the analysis for EPA’s intended purpose depends upon the ability of the proprietary program to analyze

compared to the 2005 level of CO₂ emissions. 79 Fed. Reg. at 34,932-3. EPA projects that implementation of all four blocks would produce an overall 27 percent reduction in CO₂ emissions in 2020. *Id.* at 34,993.

¹²⁶ Base load generation operates in all hours of the day. Intermediate generate is economically dispatched to supplement base load generation in shoulder and peak hours. In shoulder and peak hours, base load generation is fully dispatched and more energy is needed to meet demand.

¹²⁷ 79 Fed. Reg. at 34,863.

¹²⁸ Data show that existing NGCCs produced 959 TWh in 2012. EPA calculates that a 70 percent overall utilization rate could have produced 1390 TWh in 2012. EPA also calculates that including new NGCC-based EGUs for which construction commenced before January 8, 2014, to overall capacity operated at a 70 percent utilization rate would support 1,443 TWh per year of energy production. *Id.*

¹²⁹ See Emission Impact Memo at p. 3-4, Table 5.

¹³⁰ 79 Fed. Reg. at 34,857.

¹³¹ *Id.* at 34,863.

¹³² *Id.* at 34,864.

¹³³ *Id.*

¹³⁴ See *id.*, notes 136 and 137.

¹³⁵ See Technical Support Analysis: Resource Adequacy and Reliability Analysis [*hereinafter* Tech Support Analysis], available at <http://www2.epa.gov/sites/production/files/2014-06/documents/20140602tsd-resource-adequacy-reliability.pdf>, a document included in EPA’s Clean Power Plan Proposed Rule Technical Documents.

voltage implications of altered generation patterns. Similarly, the support for the proposed rule could be buttressed by a more explicit analysis of how changes in the amount and use of installed capacity affects needed reserve capacity. For instance, a higher utilization of NGCC-based EGUs may adversely affect the availability of spinning and quick start capacity reserves. Today, such units are a primary source of such reserves. The start-up times for non-dispatched coal-fired EGUs make such capacity unsuitable for these purposes.

What Opportunities May Be Created for Energy Industry Participants by an Implementation of EPA's Proposed Rule?

EPA acknowledges that implementation of its proposed rule will necessitate adjustments to the United States energy infrastructure but provides little detailed analysis of expected impacts. Nonetheless, implementation as proposed will produce predictable, needed infrastructure additions that will present opportunities to businesses in the industry.

Significant New Pipeline Capacity Will Be Needed

EPA's projection that incremental pipeline expansion can largely be handled with localized projects to relieve potential new constraints and normal pipeline capacity additions understates the likely impact of a major shift in fuel use for electric generation.¹³⁶ Existing NGCCs have not traditionally purchased firm transportation on natural gas pipelines. If NGCCs are to become a major component of base load generation, the need for greater use of firm pipeline transportation service by NGCCs can be expected. Both the Federal Energy Regulatory Commission ("FERC") and NERC have expressed concerns about the reliability implications of NGCC reliance on non-firm transportation given the expected need of NGCC energy to meet peak loads under current conditions. Additionally, while EPA has not made the addition of new NGCC capacity a building block of its proposal, the need for additional NGCC capacity above current projections is evident. EPA's own projections confirm this expectation.¹³⁷ Finally, an increased reliance on natural gas to fuel generation will necessitate more pipeline capacity to deliver the commodity from the new production zones lacking an existing network of available pipeline capacity.

Substantial Investment Will Be Needed to Modify the Transmission System to Accommodate New Patterns of Dispatch

The interconnected nature of alternating current electric transmission service requires rigorous analysis and planning to ensure that changes to the composition or use of the components of the electric system can be accommodated so as to ensure continued reliable operations. EPA's proposed rule entails the projected retirement of base load generation EGUs, reduced production by other existing EGUs, and the addition of new EGUs in presently unknown locations. Collectively, such major adjustments to the configuration and use of the existing transmission infrastructure have significant implications. These implications will likely require substantial new investment in transmission infrastructure.

Major Changes to the Electric System Will Likely Create the Need for Alterations in the Current Means Used to Provide Ancillary Services

In simple terms, Ancillary Services constitute available reserves of EGU capacity to handle system contingencies, voltage support to maintain transmission activity, and dedicated generation to follow increases and decreases in load in real time. Increasingly, Regional Transmission Organizations have developed sophisticated electric markets to procure these services. The changes that the EPA rule would require in the current operation of United States electric systems may well create opportunities for new service providers to compete in these markets. ■

¹³⁶ See 79 Fed. Reg. at 34,877.

¹³⁷ See Tech Support Analysis at p. 14, Table A5.

Building Blocks Towards a Coal-to-Gas Value Shift

By Robert Seber¹³⁸

Tug of War

A key component of the Clean Power Plan's proposed best system of emission reduction goals is Building Block 2. Its objective is to displace coal-fired steam and oil/gas-fired steam generation by increasing generation from existing natural gas combined cycle plants to a 70% utilization rate (from an observed rate of 45% in 2012). It is also one of the most politically charged aspects of the Clean Power Plan, evidenced by a suit filed by twelve states against the Environmental Protection Agency to block further power plant rules under the Clean Air Act. What to political representatives from these states is a "war on coal" that is "certain to lead to [power] plant closures,"¹³⁹ is to natural gas industry associations a "fair and flexible" set of rules that realizes the emission benefits provided by a competitive natural gas market.¹⁴⁰

Facts and Forecasts

Will the proposed shift from coal to gas as an energy source also shift value from coal-based to gas-based generation plants?

The obvious answer may be "of course." However, recent industry trends illustrate that the impact of any implementation of Building Block 2 may only be marginal:

- Coal plant retirements and conversion have already occurred at a rapid pace. In 2010, the US coal power fleet consisted of 1,396 electric generating units at 580 power plants that represented a total electric generating capacity of more than 315 gigawatts. From 2010 until mid-2014, the industry announced retirements and conversions, with schedules stretching as far as 2025, of 444 units totaling nearly 67 gigawatts, over 20% of the fleet's capacity.¹⁴¹
- While coal plants have traditionally operated at near capacity, for a variety of reasons, capacity factors have declined significantly in recent years. Almost half of the coal-fired plants scheduled to be retired during the balance of this decade had a capacity factor below 50% between 2009 and 2013.¹⁴²
- The average age of coal-fired plants in the US is over 40 years, compared to an average age of gas-fired plants of closer to 15 years. A vast majority (over 90%) of the coal-fired power capacity lacks the equipment to comply with environmental regulations even before the Clean Power Plan, particularly the Mercury and Air Toxic Standards that become effective in 2015. Significant capital expenditures to achieve compliance would decrease energy margins of coal capacity further.¹⁴³
- The war on coal began with fracking. Relative prices of natural gas and coal have changed dramatically since *Time Magazine* featured an article with the title "Why U.S. Is Running Out of Gas," which was as recent as 2003. The shale gas revolution narrowed the gap between the prices of the two fuels, with natural gas historically significantly more expensive on an energy equivalent basis, to a point where prices converged in 2012.
- Power plant valuations have declined significantly over the last five years across all fuel types. However, the decline was most severe for coal-fired plants. In a valuation study of a representative sample of plants, employing net present value analysis based on plant-specific cash flow projections, coal plants saw a 55% decline in median valuations from 2008 to 2013.¹⁴⁴

The Clean Power Plan may be adding momentum to, but is not changing, the direction of industry trends that commenced several years ago. Nonetheless, if the Clean Power Plan becomes effective and state implementation proceeds, the question about the end game arises. Is all lost for coal-fired power plants, with a wholesale value shift to natural gas combined cycle plants? Possibly, but more likely the impact will be more pronounced along geographic and economic factors:

- The proposed rules set widely varying, state-specific targets for CO₂ emission standards and corresponding total reductions. Six states account for 48% of total national reduction goals. The potential for Building Block 2 is greatest in states that have both substantial generation from aging coal-fired plants and excess capacity in existing or planned

¹³⁸ Robert Seber is a corporate partner. He does not share the fondness of his environmental and regulatory colleagues for acronyms.

¹³⁹ Mike Kelly, *Pushing Back Against Obama's War on Coal*, WALL STREET JOURNAL ONLINE Aug. 3, 2014), <http://online.wsj.com/articles/mike-kelly-pushing-back-against-obamas-war-on-coal-1407098882>.

¹⁴⁰ The American Natural Gas Association, the American Gas Association, and the Natural Gas Supply Association issued separate press releases using this and similar terminology.

¹⁴¹ American Coal. for Clean Coal Elec., *Coal Unit Shutdowns as of July 28, 2014* (2014), <http://americaspower.org/sites/default/files/Coal%20Unit%20Retirements%20JULY%2028%202014.pdf>

¹⁴² Ctr. for Energy Econ., *Power Plant Retirements: What, Where, Why & Implications* (2014), <http://www.beg.utexas.edu/energyecon/thinkcorner/Power%20Plant%20Retirements.pdf>

¹⁴³ Metin Celebi, *The Brattle Group, Coal Plant Retirements and Market Impacts*, Wartsila Flexible Power Symposium 2014 – Vail, Colorado, (Feb. 5, 2014), http://www.brattle.com/system/publications/pdfs/000/004/982/original/Coal_Plant_Retirements_and_Market_Impacts.pdf?1391611874.

¹⁴⁴ Fitch Ratings, *Special Report: The Erosion in Power Plant Valuations*, September 25, 2013.

gas plants. These include Alabama, Florida, Georgia, Michigan, Pennsylvania and Texas,¹⁴⁵ but not, for example, Ohio. Interstate cooperation may re-distribute physical reductions. The unique concept of the Clean Power Plan, which leaves ample opportunity for states and industry to arrive at customized solutions, makes precise predictions difficult, yet is very likely to result in regional differences in their impact on further coal-to-gas shifts.

- Forced regulatory capacity shifts do not alter the variable costs of electricity production, primarily fuel costs. The year 2013, while unlikely to be a reversal of long-term trends, served as a reminder of the sensitivity of gas-fired plant utilization to the market price of natural gas. Coal generated 40% of US electricity, up from 37.5% in 2012, and natural gas generated 28%, down from 30% in 2012, as the power industry responded to higher natural gas spot prices, caused by increased demand during the unusually cold winter. More than 90% of coal-fired plants procure their input under long-term supply contracts, compared to less than half of gas-fired plants. This article will not attempt to predict future prices for natural gas; however, there seems to be a broad consensus that growing domestic and international demand will cause future prices to be higher than those experienced from 2009 to 2012, thus restoring some of the competitiveness of coal-fired plants.

Conclusion

Question: Will the proposed shift from coal to gas as an energy source also shift value from coal-based to gas-based generation plants?

Answer: Yes, marginally and regionally, but not uniformly. ■

¹⁴⁵ Int'l Energy Agency, Gas to Coal Competition in the U.S. Power Sector (2013), http://www.iea.org/publications/insights/coalvsgas_final_web.pdf.

EPA Proposal Likely to Lead to Additional Renewable Energy Development in Certain States

By Becky Diffen and Chuck Cassidy

The renewable energy industry, including wind, solar and biomass, stands to potentially benefit from EPA's proposal, but the affect would likely only impact certain states. Renewable resources, along with nuclear power, account for the third building block of emission reduction measures that EPA included in the Clean Power Plan. By establishing state specific carbon emission limits, the proposal could provide utilities with a greater incentive to invest in carbon-free electricity sources and accelerate the shift from coal to other fuel sources, including renewables and nuclear power. Nevertheless, because each state has the power and flexibility to determine its desired renewable energy requirements in order to help to achieve that state's carbon reduction objectives, the proposed rule is unlikely to have a significant impact on renewable energy development in comparison to federal tax incentives and state renewable portfolio standards unless states choose to increase state-mandated renewable energy requirements as a primary way to reduce emissions.

Primary Drivers of Renewable Energy: The PTC, ITC, and RPS

EPA's proposed rule could potentially make it easier for renewable developers to secure financing for projects as lenders may be more willing to invest in projects if they are confident that there will be purchasers of the energy generated by such projects for years to come. Renewable energy projects generally require a reliable, guaranteed stream of income from long-term arrangements, such as power purchase agreements ("PPAs"), in order to be viewed as "financeable" from the perspective of an investor. The ability to secure financing is a crucial element for most renewable energy developers because of the large up-front capital costs associated with such projects.

While a few power purchasers will buy renewably generated energy simply because it is "green," most utilities and other buyers choose to enter into PPAs and other long-term arrangements for renewable energy based on two factors: (1) low, fixed cost of power and/or (2) a qualified source of renewable energy credits to meet state requirements. The primary policy mechanisms that support these factors are federal tax credits and state renewable portfolio standards, respectively.

The Federal Tax Credits

Although the costs of renewable energy generation have declined significantly as the various industries have matured, the growth of the renewable energy industry continues to benefit from federal policy support in the form of tax incentives, which help to lower the cost of power to offtakers by providing the project with an additional source of income.

The Production Tax Credit

Originally enacted in 1992, the Production Tax Credit ("PTC") has served as the primary federal incentive for the development of many renewable resources, particularly wind energy, by reducing federal income taxes for qualified taxpayers based on the amount of power generated by a project. The PTC first expired in June 1999, and has subsequently expired and been renewed numerous times. During this timeframe, wind power development has experienced tremendous growth during the years leading up to the expiration of the PTC and a dramatic decrease in installed wind capacity in the years in which the PTC has lapsed.

The most recent 2.3 cent per kilowatt-hour PTC expired on December 31, 2013; however a revision in the applicable federal law has changed the effect of such expiration. Unlike previous years in which projects had to be completed and "placed in service" before the end of the year in order to claim that year's PTC, the revised law allows projects that *began construction* before the end of 2013 to remain eligible for the PTC.¹⁴⁶ Thus, despite the technical expiration of the PTC last December, the revision to the law has kept the pipeline of wind energy projects alive into the current year as most projects that began construction in 2013 will be completed in 2014 or 2015. Nevertheless, because the development, planning and permitting process for new renewable facilities can take two to three years or longer to complete, many renewable energy developers remain hesitant to begin a new project during the current lapse period due to uncertainty about whether the PTC will be re-extended. As a result, while EPA's proposed rule would provide some additional interest in renewables, uncertainty over a PTC extension likely has a much larger impact on how many projects will begin construction in the coming years.

The Investment Tax Credit

The solar industry has similarly relied on the Investment Tax Credit ("ITC"), which reduces federal income taxes for qualified tax-paying individuals or businesses based on capital investment in qualified renewable energy projects. Since its

¹⁴⁶ See *American Taxpayer Relief Act of 2012* (H.R. 6, Sec. 407) (2013). See, also, Becky Diffen & Laura Gieseke, *IRS Issues Guidance on Renewable Tax Credits*, V&E CLIMATE CHANGE REPORT (June 2013), available at <http://www.velaw.com/uploadedFiles/VEsite/Resources/ClimateChangeReportJune2013.pdf>, for a more detailed description of how the IRS interprets "under construction."

inception in 2006, the ITC has fueled dramatic growth in solar energy projects, helping annual solar installation grow at a compound annual growth rate of approximately 76%.¹⁴⁷

Under current law, the ITC will remain in effect for certain renewable technologies (including solar) for projects “placed in service” through December 31, 2016. Like the PTC, the existence of the ITC provides market certainty to lenders for long-term investments in many renewable projects and is likely a key component to continued growth in solar energy in the United States. And, like the potential effect of the extension of the PTC on the development of PTC-eligible renewable energy sources, the continued existence of the ITC, by providing a direct incentive for private sector investment in solar manufacturing and project construction, has far greater potential to influence future development of ITC-eligible renewable projects relative to EPA’s proposal.

Renewable Energy Portfolio Standards

At the state level, the renewable energy standard or renewable portfolio standard (“RPS”) has been the leading driver of renewable energy development. Twenty-nine states and the District of Columbia currently have an RPS requiring varying amounts of electricity generation from renewable energy, while twenty-five states have energy efficiency measures setting forth mandatory energy reduction goals.¹⁴⁸ In recent years, a few states, including Ohio and Indiana, have suspended their renewable energy and energy efficiency standards due to complaints citing high implementation costs.¹⁴⁹

The potential effect of EPA’s proposal on the increased development of renewable energy would likely vary greatly depending on each state’s stance on renewables and the use of the RPS. By including renewable resources as one of four “building blocks” of emission reduction measures, the proposed rule would almost certainly make those states rejecting their existing renewable energy standards, like Ohio and Indiana, think twice about such elimination. At the same time, the impact of the proposal would likely be more muted in states that already have aggressive RPS measures in place, such as Texas and California.¹⁵⁰ The proposal is unlikely to significantly increase the level of renewable energy in such states because they are already utilizing renewables at very high levels according to their own previously established renewable energy requirements and may have transmission limitations and other impediments to adding more renewable energy to their grid without significant technical advances. Still, some states could decide to create an RPS or increase their existing RPS in order to meet EPA requirements. To the extent this does occur, EPA’s proposal would certainly lead to more renewable energy being built.

On the opposite end of the spectrum, multiple states opposed to the increased development of renewable energy (which tend to be states without an RPS in place) have already expressed intentions to lead extensive legal and legislative challenges against EPA building blocks allowing states to employ “beyond the fence line” approaches in reducing their GHG emissions.¹⁵¹ Such challenges would generally seek to limit EPA’s regulation to a purely “inside the fence line” approach, meaning that it would only allow efforts to cut carbon emissions through efficiency improvements at the affected coal-fired power plants themselves.

EPA’s proposal stands to generate the greatest impact on renewable energy in RPS states with relatively modest renewable energy requirements currently in place and the ability to increase such requirements without dramatically increasing the cost of power. Unlike states such as Texas and California that already have high renewable energy deployment, states like Arizona with a RPS of 15% by 2025¹⁵² would have both an opportunity and incentive to raise their existing RPS to help achieve their respective carbon reduction objectives established by EPA’s plan. Accordingly, EPA’s proposal would likely stimulate regulatory and market-based actions to acquire additional renewable generation in this final category of middle-ground RPS states.

¹⁴⁷ *Solar Investment Tax Credit (ITC)*, SOLAR ENERGY INDUSTRIES ASSOCIATION, available at <http://www.seia.org/policy/finance-tax/solar-investment-tax-credit> (last visited August 26, 2014).

¹⁴⁸ DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY, <http://www.dsireusa.org/> (last visited August 26, 2014); *Energy Efficiency Resource Standard (EERS)*, AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY, <http://www.aceee.org/topics/eers> (last visited August 26, 2014).

¹⁴⁹ Ohio’s state legislature passed a law in May suspending the state’s renewable energy mandates for two years, while Indiana approved legislation earlier this year ending the state’s mandatory energy efficiency program. See S.B. 310, 130th Gen. Assemb. (Ohio 2014) and S.B. 340, 118th Gen. Assemb., 2d Reg. Sess. (Ind. 2014). Similar proposed legislation has failed in states such as North Carolina and Kansas. See H.B. 298, 2013 Gen. Assemb. (N.C. 2013) and H.B. 2241, 2013 Leg., Reg. Sess. (Kan. 2013).

¹⁵⁰ See TEX. UTIL. CODE, § 39.904 and TEX. ADMIN. CODE § 25.173; see CAL. PUB. UTIL. CODE §§ 399.11 et seq. and CAL. PUB. RES. CODE, §§ 25740 et seq.

¹⁵¹ Melanie Condon & Jocelyn Durkay, *States Reactions to Proposed EPA Greenhouse Gas Emissions Standards*, NAT’L CONF. OF STATE LEGISLATURES (July 25, 2014), available at <http://www.ncsl.org/research/energy/states-reactions-to-proposed-epa-greenhouse-gas-emissions-standards635333237.aspx>.

¹⁵² See ARIZ. ADMIN. CODE, §§ R14-2-1801 et seq., as amended, http://www.azsos.gov/PUBLIC_SERVICES/Title_14/14-02.htm#ARTICLE_18.

Potential Effect on Renewable Project Development

EPA's proposal may encourage states to use the RPS structure to force utilities to buy more renewable energy, thus prompting more long-term PPAs between utilities and renewable energy projects. At the end of the day, however, it is entirely up to the states as to how they would choose to comply with the proposed rule based on EPA's four building blocks – a decision that will inevitably involve a mix of economics and political forces and will factor in existing generation sources and the local renewable energy resources available. In all likelihood, those states that already have aggressive clean energy plans will continue to dispatch the use of non-emitting generation resources to varying extents, while those states that are heavily dependent on coal-fired generation will opt to bear the costs associated with the proposal by way of heat rate improvements at coal-fired power plants or increased energy efficiency. Predictably, the most attractive means of compliance for a majority of states will be the least costly alternative.

Summary Conclusion

Question: Will the inclusion of renewable energy as one of EPA's four building blocks lead to increased renewable energy generation?

Answer: Yes, in certain states, but the Clean Power Plan is unlikely to replace federal tax incentives as a key driver behind the transition to alternative energy sources on a national basis. ■

Can the Clean Power Plan Set the Stage for an International Climate Change Agreement?

By Casey Hopkins and Lauren Sidner

Introduction

Without question, the Clean Power Plan represents a significant part of the Obama administration's efforts to assume a leading role in the international advancement of climate change regulation and coordination. Beginning with President Barack Obama's announcement of his Climate Action Plan in June 2013 and continuing through the present, his administration has made a priority of advancing United States policy on climate change regulation. Not surprisingly, Secretary of State John Kerry has also prominently focused on climate change issues, including his assessment that they represent the "greatest challenge" that the United States faces currently. The question that arises is whether the proposal from the United States is enough for the international community to make a breakthrough on a new, international scheme for climate change regulation at the next conference of the parties in Paris in 2015.

There are certainly ample grounds for advocates of climate change regulation to be underwhelmed by the current effort. For instance, some may quibble with the approach of beginning with one sector of the economy (power generation) rather than taking an economy-wide approach. Others might snipe that the targets are modest relative to the goals of the European Union ("EU") (at present, it bears stating), and that the lack of bipartisan support for the effort detracts from the potency of this initiative. Despite such criticisms, the prospect of the Clean Power Plan taking effect, even if only in the power sector of an economy the size of the United States, would nevertheless represent a significant achievement.

Indeed, the seemingly modest objectives of this scheme represent a shrewd political calculation about the difficulty for opponents of climate change regulation to overcome the inertia of expanding regulation. The regulatory (and economic) reality of expanding and intensifying regulation can be seen in the cautions that virtually every entity listed on the New York Stock Exchange passes on to its stockholders about regulation tending to become more pervasive and more stringent over time. Seen from that perspective, the Clean Power Plan is a momentous and historic undertaking. Despite its potentially fatal legal vulnerabilities, the establishment in the United States of a national regulatory beachhead in the adoption of climate change regulations from the power sector will, in the long-term, be a game changer in both domestic and international actions to address climate change.

Even if the proposal by the Obama administration is not enough to forge an agreement on a binding treaty to regulate climate change at the international level, it may be the basis for a form of common action by developed and developing countries to address climate change. Those efforts could, in turn, provide sufficient reason for further Conferences of the Parties to reach an international agreement on climate change regulation. That end may be sufficient in its own right to label this effort as "successful." Indeed, the more recent Conferences of the Parties have deteriorated into factional disputes that evoke William Butler Yeats' imagery of a center that "cannot hold." While much uncertainty about the viability and details of the Clean Power Plan will still remain in 2015, when the Conference of the Parties takes place in Paris, this proposal, combined with concerted action on China's part, may provide enough of a "critical mass" to keep the developed and developing countries moving toward either a lasting agreement on international climate change regulation or, at a minimum, the Obama administration's vision of a hybrid, international approach that could be implemented without Senate ratification.¹⁵³

International Implications of the Proposed Rule

Current Status of International Treaty Negotiations

In 2011, parties at the seventeenth Conference of the Parties in Durban agreed to establish the Ad Hoc Working Group on the Durban Platform for Enhanced Action "to launch a process to develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties."¹⁵⁴ The Working Group further agreed to "complete its work as early as possible but no later than 2015" in order to adopt an agreement at the twenty-first session of the Conference of the Parties that would be implemented in 2020.¹⁵⁵

International Treaty Negotiations: Barriers to International Consensus

Since the development of the United Nations Framework Convention on Climate Change ("UNFCCC") in 1992 and the first Conference of the Parties in Berlin in 1995, progress in multilateral climate change negotiations has been disappointingly slow. In December 1997, the Kyoto Protocol for the first time established legally binding targets for certain countries, but that achievement was dampened by the fact that the United States did not participate and the protocol did not contain emissions

¹⁵³ Coral Davenport, *Obama Pursuing Climate Accord in Lieu of Treaty*, THE NEW YORK TIMES (Aug. 26, 2014), available at http://www.nytimes.com/2014/08/27/us/politics/obama-pursuing-climate-accord-in-lieu-of-treaty.html?_r=1.

¹⁵⁴ Report of the Conference of the Parties on its Seventeenth Session, Durban, S. Afr., Nov. 28-December 11, 2011, Decision 1/CP.17, <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=2>.

¹⁵⁵ *Id.*

targets for China or India.¹⁵⁶ And the struggle to reach a consensus has persisted. The problem, in part, stems from the inherent difficulty in finding common ground among the over 190 countries participating in the negotiations. The difficulty is only compounded by the fact that climate negotiations implicate sensitive issues, such as economic development, energy security, and human rights.

One important reason for the deadlock is the differing viewpoints of developing countries, on the one hand, and developed countries, on the other, with regard to the role that each should play in reducing emissions. Understandably, developing countries are reluctant to make commitments on climate change that could limit their economic growth. The problem is that among them are some of the largest emitters worldwide, and developed countries can argue that without commitments from large emitters, their own domestic efforts will be less meaningful.

In June 2014, the Group of 77, an intergovernmental organization of developing countries in the United Nations,¹⁵⁷ held a two-day summit in Bolivia. At the end of the summit, the Group issued a declaration pledging unified action to combat climate change, but only after developed nations make substantial commitments to act.¹⁵⁸ Specifically, the declaration emphasized “that the extent to which developing countries will effectively implement their commitments under the United Nations Framework Convention on Climate Change will depend on the effective implementation by developed countries of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of developing countries.”¹⁵⁹

Clean Power Plan’s Potential Impact on International Treaty Negotiations

Given the substantial barriers that exist to an international consensus on climate change and given the ambitious goal of achieving an agreement by 2015, many observers believe that the Obama administration unveiled the proposed Clean Power Plan in 2014 intended to positively influence international climate talks. In fact, the Obama administration appears to have been setting the stage for the negotiations since well before the unveiling of the Clean Power Plan in June. Over the past several years, President Obama and Secretary of State John Kerry have placed increased emphasis on the issue, beginning with the “President’s Climate Action Plan” in June 2013. In 2014, Secretary Kerry has frequently raised the issue in his diplomatic engagements worldwide.

On June 25, 2013, President Obama announced his Climate Action Plan in a speech laying out a whole-of-government approach to reducing emissions domestically that would require action from the Departments of Energy, Interior, Transportation, and Agriculture. His speech also emphasized global action and the important role of the United States in leading the global effort to address climate change. In the “President’s Climate Action Plan” published on the White House website, the Executive Office of the President lays out steps to “lead international efforts to address global climate change.”¹⁶⁰ The plan detailed a number of international initiatives designed to spur concrete action to reduce global emissions and enhance climate preparedness.¹⁶¹

Secretary of State Kerry has been equally, if not more, outspoken on the issue. In February 2014, Secretary Kerry gave a series of speeches on climate change in Asia. In Jakarta, he stressed the urgent need for action, particularly in countries, like Indonesia, where the impacts of climate change will be most severe. In India, he emphasized the need for bilateral coordination between India and the United States. In China, he described climate change as one of the most important challenges the world faces and argued that to successfully confront the challenge, the US and China must cooperate.

Then, in March 2014, Secretary Kerry issued his first policy guidance since being named Secretary of State: the policy guidance was titled “The Secretary’s Policy Guidance on Elevating Climate Change Across All Our Platforms.”¹⁶² The policy

¹⁵⁶ Kyoto Protocol to the United Nations Framework Convention on Climate Change, UNFCCC Conference of the Parties, 3d Sess., UN Doc. FCCC/CP/1997/L.7/Add.1 (Dec. 10, 1997).

¹⁵⁷ Established in 1964 by 77 developing country signatories of the “Joint Declaration of the Seventy-Seven Developing Countries” issued during the United Nations Conference on Trade and Development in Geneva, the Group of 77 is an intergovernmental organization designed to provide developing countries a means to promote their collective economic interests within the United Nations.

¹⁵⁸ *G77 Summit: Highlights from the Declaration of Santa Cruz*, CENTER FOR UN AND GLOBAL GOVERNANCE STUDIES (July 27, 2014), available at <http://blogs.shu.edu/unstudies/2014/07/27/g77-summit-highlights-from-the-declaration-of-santa-cruz/>.

¹⁵⁹ Declaration of the Summit of Heads of State and Government of the Group of 77 (July 7, 2014), <http://www.g77.org/doc/A-68-948%28E%29.pdf>.

¹⁶⁰ EXECUTIVE OFFICE OF THE PRESIDENT, THE PRESIDENT’S CLIMATE ACTION PLAN, June 2013, available at <http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>.

¹⁶¹ International initiatives contemplated in the plan include: enhancing multilateral engagement with major economies; expanding bilateral cooperation with major emerging economies; combatting short-lived climate pollutants; reducing emissions from deforestation and forest degradation; negotiating global free trade in environmental goods and services; phasing out subsidies that encourage wasteful consumption of fossil fuels; leading global sector public financing towards cleaner energy; strengthening global resilience to climate change; and mobilizing climate finance.

¹⁶² Andrew C. Revkin, *Climate Change: Kerry Orders U.S. Diplomats to Press Case for Climate Action*, THE NEW YORK TIMES (March 10, 2014, 12:19 p.m.), available at <http://dotearth.blogs.nytimes.com/2014/03/10/kerry-orders-u-s-diplomats-to-press-case-for-climate-action/?module=Search&mabReward=relbias%3Ar%2C%22%22%3A%22RI%3A16%22%2C%221%22%3A%22RI%3A10%22>.

guidance urged “Chiefs of Mission to make climate change a priority for all relevant personnel and to promote concerted action at posts and in host countries to address this problem”¹⁶³ In particular, the policy guidance set out seven objectives:

- (1) Lead by example through strong action at home and abroad;
- (2) Conclude a new international climate change agreement;
- (3) Implement the Global Climate Change Initiative;
- (4) Enhance multilateral engagement;
- (5) Expand bilateral engagement;
- (6) Mobilize financial resources; and
- (7) Integrate climate change with other priorities.

The timing of the President’s Climate Action Plan and the Secretary’s public push are not coincidental. The administration understands the importance of the message it communicates overseas and is working to convince the world that the United States is prepared to take a leading role to combat climate change. The administration’s public emphasis on climate change in the lead up to the Clean Power Plan’s announcement served to “prove to the international community that the U.S. is ready to pay additional costs to combat climate change.”¹⁶⁴ And the announcement of the proposal served to spur other countries to act and to improve the United States’ credibility and bargaining power in international climate talks.

News reports have recently emerged indicating that the Obama administration envisions a coordinated, global approach to climate change regulation that does not require Senate ratification.¹⁶⁵ While the legal rationale for any such approach has not been unveiled, this broader context suggests that the Obama administration will likely push this proposal as a significant centerpiece of a broader, international effort.

Projected Emissions Standards Under The Clean Power Plan Compared to EU Standards

The initial question is whether the Clean Power Plan meets the standard of a “substantial commitment” by the United States in order to make the developing countries willing to take actions of their own to address climate change impacts. As will be explained below, in several important respects, the proposed Clean Power Plan is narrower and less robust than the emissions reduction program in place in the EU. Despite these differences, it is difficult to imagine that this initiative, if adopted, could be seen as anything but a “substantial commitment.” Indeed, for advocates of climate change regulation, the concept of rebuking as “insufficient” the most significant effort by any President of the United States to address climate change carries very significant risks including a backlash from the American public about the possible costs to the economy from a more aggressive approach.

Although the proposal of this program is best seen as a message to the international community as a whole, China’s reaction to the proposed rule is of particular interest. Christiana Figueres, the Executive Secretary of the UNFCCC, “said she expects the new power plant rules could spur other big emitters—such India—to begin taking action on climate change and move forward on reaching a deal by the 2015 deadline.”¹⁶⁶ In fact, the day after the Obama administration released the proposed rule, He Jiankun, the chairman of China’s Advisory Committee on Climate Change, in a press conference said that he and other subject-matter experts urged the Chinese government to place an absolute cap on greenhouse gas emissions in its next five-year plan (2016-2020). Although it is not yet clear precisely how China will respond, many observers believe the Clean Power Plan will influence China’s domestic climate policy going forward.

Without question, the scope of the Clean Power Plan is narrower than the EU’s climate change program. The EU is grappling with emissions from CO₂ on an economy-wide basis, including from transportation fuels (including aviation and maritime), while the proposed approach in the United States for now is largely power-sector oriented.¹⁶⁷ Nor are the CO₂ emission reduction goals proposed by the United States as stringent as the EU’s. A good example of this disparity can be seen in the standards for CO₂ emissions from coal- and gas-fired power plants in the United States. The standards applicable to new power plants in the US are:

- New gas plants:
 - 1,000 lbs. CO₂/MWh gross or 450 kg CO₂/ MWh for larger units (>850 mmBtu/hr), or
 - 1,100 lbs CO₂/MWh gross for smaller units (≤ 850 mmBtu/hr)

¹⁶³ <https://blogs.state.gov/stories/2014/03/07/we-need-elevate-environment-everything-we-do>.

¹⁶⁴ Mike Kelly, *Pushing Back Against Obama’s War on Coal*, THE WALL STREET JOURNAL ONLINE (Aug. 3, 2014; 4:48 p.m. ET), available at <http://online.wsj.com/articles/mike-kelly-pushing-back-against-obamas-war-on-coal-1407098882#printMode>.

¹⁶⁵ Davenport, *supra* note 1.

¹⁶⁶ Suzanne Goldberg, “UN climate change chief praises new US pollution regulations,” THE GUARDIAN (June 1, 2014), available at <http://www.theguardian.com/environment/2014/jun/01/un-climate-change-chief-praises-us-pollution-regulations>

¹⁶⁷ There are federal initiatives related to transportation fuels like the renewable fuel standard and the increase in CAFÉ standards. These are certainly oriented at reducing the use of fossil-based transportation fuels and can have the effect of reducing emissions of greenhouse gases associated with transportation.

- New coal plants: 1,100 lbs. CO₂/MWh, or 500 kg CO₂/MWh

EPA projects that the Clean Power Plan will reduce the carbon intensity rate for CO₂ emissions from power plants by roughly 20%. As the current levels are in the vicinity of 1,100 pounds per megawatt hour in 2012, the calculated rate for emissions should be somewhere in the range of 890 pounds per MWh by 2030.

In contrast, the EU already is realizing significantly lower emissions levels of carbon dioxide. Denmark's coal-powered fleet reportedly averages 644 kg/MWh of CO₂ without carbon capture and storage. Indeed, ultra, super-critical technologies ("USC") hold out the promise of reducing emissions to approximately 670 kg/MWh. The Clean Coal Centre of the IEA reports that a coal unit with USC technology that co-fires biomass at a rate of roughly 20% can reduce emissions of CO₂ to 560 kg/MWh. The Committee on Climate Change in the United Kingdom has proposed a Fourth Budget for carbon control that would lower the average carbon intensity of the electricity grid to 50 kg/MWh.¹⁶⁸

The Clean Power Plan, with its current targets, will neither keep pace with the political targets of the EU nor significantly reduce the emissions of CO₂ from current levels. The Clean Power Proposal seeks a 30% reduction relative to the 2005 emission levels, but will, in essence, build on the 12% reduction already realized due to the switch from coal to natural gas, the Great Recession and the rise in renewables. In reality, the Clean Power Plan seeks an 18% reduction in emission levels relative to 2020; whereas, the unofficial, international global objective is to reduce greenhouse gases by over 80% by 2050, compared to 1990 levels. The EU has policies to achieve reductions in emissions of CO₂ by 40% below the 1990 level by 2030, a target that puts the EU on track to reduce emissions of CO₂ by 80% below the 1990 level by 2050.

Finally, the projected costs of EU's emissions targets far exceed those of the proposed US standards. The EU's target of cutting greenhouse gas emissions by 40% in 2030 is expected to cost an annual average of 38 billion euros (\$52 billion),¹⁶⁹ and in some of the larger economies in the region, such as Germany, the projected costs are as much as 5.5 billion euros (\$7.35 billion) annually.¹⁷⁰ EPA projects national compliance costs of \$8.8 billion annually by 2030 in a scenario where each state implements an individual compliance plan. EPA estimates that those costs could be reduced by 17% if states engage in regional cooperation and pursue the lowest cost opportunities on a multi-state basis.¹⁷¹

International Trading Schemes

In addition to its potential to advance an international scheme for regulating climate change, the Clean Power Plan will also permit states to develop trading schemes that could, in turn, lead to international trading of emission reduction credits between individual states or groups of states with foreign jurisdictions. It is worth noting, however, that the authority of the EPA pursuant to section 111(d) or of states to implement international trading schemes remains an open legal question, but the recent agreement between California and Quebec could potentially serve as a model going forward. The process to realize this outcome is still very much a work in progress, but there is at least a way forward towards adopting a program that allows this kind of flexibility.

Existing Trading Schemes

The President's June 2013 Climate Action Plan directed EPA to establish carbon pollution standards for new and existing power plants. To supplement that directive, President Obama issued a Presidential Memorandum requesting that EPA develop flexible standards that build on state leadership and accommodate existing state programs.¹⁷² Furthermore, the proposed rule states that "EPA is proposing that existing state programs, requirements, and measures, may qualify for use in demonstrating that a state plan will achieve the required level of emission performance, provided they meet the approvability requirements." This would suggest that existing trading schemes, such as the Regional Greenhouse Gas Initiative ("RGGI"), California's cap-and-trade program, and California's trading regime with Quebec could qualify as acceptable state plans under the proposed rule.

Regional Greenhouse Gas Initiative

Established in 2009, RGGI is a market-based CO₂ emissions reduction program comprised of nine northeastern and mid-Atlantic states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and

¹⁶⁸ COMM. ON CLIMATE CHANGE, FOURTH CARBON BUDGET REVIEW, Chapter 2: Reducing Emissions from the Power Sector, available at http://www.theccc.org.uk/wp-content/uploads/2013/12/1785b-CCC_TechRep_Singles_Chap2_1.pdf.

¹⁶⁹ Ewa Krukowska, *EU Calls for 40% Reduction in Greenhouse-Gas Output by 2030*, BLOOMBERG, available at <http://www.bloomberg.com/news/print/2014-01-22/eu-said-to-propose-40-greenhouse-gas-reduction-target-by-2030.html>.

¹⁷⁰ Enerdata, *Costs and Benefits to EU Member States of 2030 Climate and Energy Targets*, (February 2014), available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/285505/costs_benefits_eu_states_2030_climate_and_ener_gy_targets_enerdata_report.pdf.

¹⁷¹ The Brattle Group, *Policy Brief: EPA's Proposed Clean Power Plan: Implications for States and the Electric Industry*, June 2013, available at <http://www.hks.harvard.edu/hepg/Papers/2014/EPAs%20Proposed%20Clean%20Power%20Plan-Implications%20for%20States%20and%20the%20Electric%20%20%20.pdf>.

¹⁷² Presidential Memorandum, *Power Sector Carbon Pollution Standards*, June 25, 2013, available at <http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards>.

Vermont.¹⁷³ The program sets an aggregate limit on CO₂ emissions from fossil fuel-fired electric generating units (EGUs) for the entire region. Each Participating State has an annual emission budget and issues allowances according to that budget. Most of the allowances are distributed through auction. At the end of each three-year compliance period, regulated entities are required to submit allowances equal to their emissions during that period. Provisions allowing allowances to be traded among both regulated and non-regulated parties and allowing for offsets, provide affected EGUs with a degree of flexibility in complying with the program. In January 2014, Participating States reduced the aggregate limit on CO₂ emissions by 45 percent to 92 million tons of CO₂ in 2014.

Assembly Bill 32 and California-Quebec Emissions Trading Scheme

In 2006, California passed Assembly Bill 32 (“AB 32”), which set a statewide limit on GHG emissions and implemented an emission budget trading program. AB 32 was designed to reduce GHG emissions in California to 1990 levels by 2020.¹⁷⁴ Unlike RGGI, which applies to fossil fuel-fired EGUs with a capacity of 25 MW or greater, California’s budget trading program applies to all facilities in “covered sectors” that emit at least 25,000 metric tons of CO₂ equivalent per year. Covered sectors include the electric power and large industrial sectors.

On September 2013, California and Quebec signed an agreement to join their carbon emissions trading schemes, effective January 1, 2014.¹⁷⁵ The California-Quebec agreement establishes the first linkage under the Western Climate Initiative, a regional collaboration between British Columbia, Manitoba, Ontario, Quebec, and California. Ultimately, the members seek to establish a carbon trading scheme that will bring about a 15% reduction from 2005 level carbon emissions by 2020. Six other US states—Arizona, Montana, New Mexico, Oregon, Utah and Washington—were previously WCI members, but formally dropped out of the program in November 2011 amid the economic recession and rising pushback against the cap-and-trade concept in the US. British Columbia, Manitoba and Ontario have yet to commit to implementing cap-and-trade programs.

California and Quebec each had systems of cap-and-trade in place prior to the 2013 agreement. In order to implement the agreement, each had to amend its respective cap-and-trade regulations to recognize allowances and offsets produced in a foreign jurisdiction.

In May 2012, the California Air Resources Board (“CARB”) published notice and invited public comment on the proposal. CARB was required to make four key findings before the Governor would approve the proposal. CARB had to determine that (1) Quebec’s cap-and-trade program was similar in all material respects to California’s program; (2) the linkage would not change California’s ability to effectively enforce its program; (3) Quebec’s laws and regulations provide for equivalent enforcement of a cap-and-trade program; and (4) linking to programs is not likely to place significant liability on California. In April 2013, Governor Jerry Brown found these requirements had been met and approved the proposal.

The September 2013 agreement linking the programs creates a consultation committee comprised of the CARB Executive Officer and the Assistant Deputy Minister for Climate Change, Air and Water at the Ministère du Développement Durable, de l’Environnement, de la Faune et des Parcs to monitor the coordination of the cap and trade programs and report at least annually.

The agreement further requires the jurisdictions to mutually recognize and enforce the other’s emissions allowances and offsets. The agreement provides for joint auctions of new emissions allowances and trading of emissions allowances and offsets across both systems. The parties also agreed to establish a common registry for allowances and offsets.¹⁷⁶

Clean Power Plan’s Potential Impact on International Trading Schemes

As discussed above, the proposed rule was designed to accommodate existing state programs, provided they meet certain criteria. Moreover, the rule proposes state-specific rate-based goals (as opposed to mass-based standards) but allows states to convert rate-based goals (lbs. CO₂/MWh) into mass-based goals to accommodate cap-and-trade programs. As such, it appears that programs embracing the existing trading schemes discussed above may qualify for a state plan to achieve the applicable emissions standards. That said, questions remain with regard to how precisely the Clean Power Plan will accommodate existing state programs in practice, and, in particular, relative to any international commitments.

Certainly, EPA did not raise any explicit concerns about the international aspects of the California program even while it was lauding how that program demonstrates the “number of different ways [to] achieve required reductions,¹⁷⁷ or creates

¹⁷³ *Survey of Existing State Policies and Programs that Reduce Power Sector CO₂ Emissions*, June 2, 2014, available at http://www2.epa.gov/sites/production/files/2014-06/documents/existing-state-actions-that-reduce-power-sector-co2-emissions-june-2-2014_0.pdf.

¹⁷⁴ Assembly Bill 32, California Global Warming Solutions Act of 2006, Division 25.5 (September 27, 2006), accessed March 19, 2014, available at http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf.

¹⁷⁵ Rolandas Vaiciulis & Shaun Fluker, Linking the California Quebec Emissions Trading Schemes, ABLawg (Dec. 3, 2013), <http://ablawg.ca/2013/12/03/linking-the-california-and-quebec-emissions-trading-schemes/>.

¹⁷⁶ *Id.*

¹⁷⁷ 79 Fed. Reg. at 34,838 (June 18, 2014).

“market dynamics” that affect longer and shorter term decision-making by power providers.¹⁷⁸ The only reservation that EPA expressed about either the RGGI or California programs was that they “meet other key requirements such as achieving the required emissions reductions over the appropriate timeframes.”¹⁷⁹ At a minimum, it certainly seems that EPA is leaving until another day the question of whether these credits can be used in approved plans.

Section 111(d) of the Act requires that “enforcement” of the standards of performance must be achievable by EPA (or its delegate). Although not drafted with this section of the Act in mind, the California Governor’s approval notes that the state is able to enforce the requirements against “any entity subject to regulation **to the maximum extent permitted under the United States and California Constitutions.**”¹⁸⁰ (Emphasis added.) This language fails to clarify any enforcement powers of the state and seems to do nothing more than validate the question of whether any federal or state government would have that authority. If the enforcement requirement of section 111(d) were interpreted to require that EPA or the state have the authority to enforce the restrictions in the jurisdiction where the emission occurs, any international trading would likely be precluded in the absence of treaties allowing such enforcement by United States authorities in foreign countries. Alternatively, the statute could be deemed to be satisfied based on the authority of EPA or the state to hold accountable the domestic source relying on invalidated international credits.

In addition, the lack of a nationwide mass-based emission limit may complicate any efforts to participate in mechanisms to trade emission reduction credits. The proposed rule authorizes states (or groups of them) to apply either rate-based goals, or to convert rate-based limitations into mass-based emission limits. Moreover, while a major objective of the President’s Climate Action Plan is to promote bi-lateral and multi-lateral cooperation to bring about greater emissions reductions, other regimes, notably the EU, may not accept or agree to trade with states where there is no national uniformity about the standard. At a minimum, the possibility of divergent systems within the US creates the possibility that emissions reductions in states with a mass-based approach may experience difficulties at the confirmation stage.

However, this is another area where the loosely federalized approach to regulation may ultimately result in broader adoption of market-based compliance mechanisms. If certain states or groups of states are amenable to a market-based approach, they can develop statewide or regional trading schemes. If those states that pursue trading schemes realize lower costs of compliance, their experience could act as an impetus to other states to join or adopt similar schemes.

California’s steps to implement a trading system with Quebec afford a template for how to implement a trading program whether it includes a foreign component, or purely a domestic one. The steps include not only authorizing trading across jurisdictions, but also determining that the governments have consistent and compatible:

- methods to monitor and report emissions reductions;
- enforcement authorities that allow each government to review and provide input into proposed changes to the other’s program; and
- processes and procedures for issuing, tracking and monitoring the emissions reductions.

Issuing emissions credits may raise some unique liability concerns for states that could be outside the typical sovereign immunities enjoyed by governments. In order to address this concern, California Government Code section 12894(f)(4) provides that the “proposed linkage and any related participation ... shall not impose any significant liability on the state or any state agency for any failure associated with the linkage.” As a part of the prerequisites to approval of the California program, the California Governor recognized that “linking with Quebec is a discretionary policy decision,” and relied on advice from the California Attorney General that “immunities limiting lawsuits against the State for such actions would apply here both to the decision to link and after linkage.”¹⁸¹ Any state that plays a role in the issuance of these emissions credits needs to consider its potential liability for any risks relating to the legitimacy of the credits (e.g., monitoring, methodological problems). These kinds of sovereign immunity considerations could be implicated by a range of events spanning fraud to challenges to the methodology, actual operations or any of the other types of problems presented by the experience with the European Trading System (e.g., weak enforcement).

It will also be important to determine what types of offsets will be allowed and to what extent they may be used to satisfy its compliance obligations. In California, offsets are capped at eight percent (8%) of an obligated party’s triennial compliance obligation. Each offset credit is equal to 1 metric ton of carbon dioxide equivalent (MTCO_{2e}) and can only be generated through implementation of an offset project for which CARB has adopted a compliance offset protocol. In California, as in the European Union, offsets must, in general terms, be real and verified reductions that would not have occurred without the program.

The selection of qualifying offsets is an inherently political process whose contours and dynamics are driven by the science of climate change and subjective notions of government support for activity that is redeeming both economically and

¹⁷⁸ *Id.* at 34,880.

¹⁷⁹ *Id.* at 34,838.

¹⁸⁰ Letter from Governor Edmund G. Brown Jr. to Mary Nichols, Chair CARB (Apr. 8, 2013) Re: Request for Findings Under SB 1018, available at http://gov.ca.gov/docs/Request_for_SB_1018_Findings.pdf.

¹⁸¹ *Id.*

environmentally. California has adopted four compliance offset protocols for generating credits, including forest projects, livestock projects, ozone depleting substances products, and urban forest projects. The controversy in California about whether companies may be able to use offsets to meet up 85% of its compliance obligations underlines a significant risk in any market where the value is derived from regulatory acceptance of the credit. Should the actual experience with the program in the future show that the usage of these credits is perceived as too substantial a part of the compliance program, the scale and even legitimacy of the offset credits may hang in the balance.

The experience of the EU in devising and implementing the offset credit market for the European Trading System (“ETS”) is instructive on the consequences of a market that has too many offsets. Due to factors such as falling coal prices, the economic recession, the growth of renewable energy, and an oversupply of carbon allowances, the ETS never really displaced coal as a fuel through its trading program.¹⁸² This experience suggests that any climate change trading program needs to have the “flexibility” to adjust the amounts of carbon offsets to best accommodate the intended functioning of the market. In this instance, however, “flexibility” is a euphemism for the ability to alter expectations and the valuations of operations that both generate and utilize offset credits. Risks of this nature create obstacles to participation at the outset of the program, as wary investors may realize that structural problems of this nature cannot be mitigated contractually or through insurance other than, possibly, through policies providing protections against “political risk.”

Conclusion

The adoption of climate change regulation in the United States would certainly have impacts on international efforts to regulate climate change. Although the initial proposals seem unlikely to be seen by themselves as the significant regulation sought by environmental groups, their adoption into law would achieve very significant first steps. Although some supporters of climate change regulation may dispute the benefits of such an incremental approach given some of the more dire predictions about the urgency of prompt and drastic action to address climate change and the associated costs, more aggressive regulating efforts in the United States carry significant political risks. In the final analysis, countries seeking to implement climate change regulation really need to engage the United States in that effort to have any real prospects for an international system that developing nations will also embrace. For this reason, it seems reasonable to expect a significant coalition to gather around a regulatory structure that embraces the Clean Power Proposal and try to use it to advance global climate change regulation. ■

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¹⁸² David Robinson, Senior Research Fellow, The Oxford Institute for Energy Studies, US CLIMATE CHANGE POLICY AND THE POWER SECTOR (July 2014), <http://www.oxfordenergy.org/wpcms/wp-content/uploads/2014/07/EV-61.pdf>.