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**REVIEW OF EPA AUTHORITY FOR UPCOMING RULES
FOR GREENHOUSE GAS EMISSIONS FROM ELECTRIC
POWER PLANTS**

The Environmental Protection Agency (“EPA”) has proposed regulations of carbon emissions from new fossil fuel-fired power plants under the authority of Section 111(b) of the Clean Air Act (“CAA”). The agency proposes one set of standards for gas-fired units and second pair of alternative standards for coal-fired units. Most new combined cycle gas-fired units already meet the proposed standard for gas-fired units. By contrast, neither recently built nor recently proposed coal-fired units can meet EPA’s proposed standard without using carbon capture and sequestration (“CCS”), a technology that some electric utilities are likely to assert has not yet been deployed cost-effectively on a commercial basis. These new source performance standards (“NSPS”) apply from the date of publication of the proposal in the Federal Register, requiring proposed coal plants that have not commenced construction as of publication to meet the new performance standard.¹

President Obama also has directed EPA to issue emissions guidelines for existing sources under Section 111(d). EPA rarely uses this authority, and there are significant legal obstacles to the imposition of direct controls on existing sources. First, it is not at all clear that EPA has any authority under Section 111(d) to regulate electrical generating units (“EGUs”). Specifically, conflicting statutory language in Section 111(d) disallows issuance of standards for sources in categories with already existing hazardous air pollutant standards, and electric generating units are such a category. EPA takes the position that the specific pollutant has to be regulated as part of the Section 112 category, which would allow simultaneous regulation of the sources. However, it is not clear that EPA’s interpretation is consistent with the statutory language.

Even if Section 111(d) is available to regulate greenhouse gases from existing sources, the CAA leaves significant discretion to states to implement the guidelines issued by EPA. Many states already have programs in place to address greenhouse gas emissions, and these states will champion flexibility to keep their existing rules. Other states that do not currently have programs may also want to take advantage of the inherent flexibility in Section 111(d) to develop rules that best suit the state’s particular circumstances. Together, the statutory language and state flexibility indicate a lengthy process for comprehensive regulation of greenhouse gases from existing sources.

This *White Paper* describes the operation of CAA Section 111 as a whole. Next, it explains the important aspects of two major provisions, Section 111(b) and Section 111(d), by explaining EPA’s authority and responsibilities under the relevant provisions and related regulations. As this *White Paper* explains the statutory and regulatory mechanisms of Section 111, it also highlights portions of the regulatory process that are significant considering the proposed rule for new sources and President Obama’s direction to develop regulations for existing sources.

BACKGROUND

EPA published a new proposal differentiating the carbon emissions standards for new coal-fired and new natural gas-fired plants on January 8, 2014 after first informally introducing the regulations in September 2013 (“2014 Proposed Rule”).² While existing technology should generally allow new natural gas-fired plants to meet the emissions standards relatively easily, the stringent emissions levels in these new regulations may make it extremely difficult to construct a new coal-fired plant that does not include carbon capture technology. The new rule will apply only to new fossil fuel-fired electric generating units. It will not apply to existing units, units undergoing modification, reconstructed units, or units that commenced construction prior to publication of the new proposed rule.³

For natural gas-fired stationary combustion cycle (“NGCC”) turbines larger than 850 mmBtu/hr, the proposed standard is 1,000 pounds of CO₂ per megawatt-hour (“lb CO₂/MWh-gross”). For units smaller than 850 mmBtu/hr, the proposed standard is 1,100 lb CO₂/MWh-gross. Depending on which standard best suits the unit, the proposed limits for fossil fuel-fired utility boilers and integrated gasification combined cycle (“IGCC”) are 1,100 lb CO₂/MWh-gross over a 12-month operating period, or 1,000–1,050 lb CO₂/MWh-gross over an 84-month (seven-year) operating period.⁴ The aim of the longer compliance period is to provide flexibility as CCS use is phased in for each unit. The operator has the option to use some or all of the 84-month operating period to optimize the system. EPA is specifically seeking comments on what the standard should be within the proposed range.

The potential regulations, first proposed in September 2013, mark the Obama administration meeting its first self-imposed deadline in its aggressive rulemaking agenda announced on June 25, 2013 to address greenhouse gas emissions. President Obama directed EPA to issue a new proposal for regulation of greenhouse gases (“GHGs”) from new EGUs under the authority of Section 111 the Clean Air Act (“CAA”) by September 20, 2013.⁵ Additionally, the President directed EPA “to issue standards, regulations, or guidelines, as appropriate, that address carbon pollution from modified, reconstructed and existing power plants . . .” under Sections 111(b) and (d) of the CAA.⁶

Previously, in 2012, EPA used its Section 111(b) authority to propose a nationwide performance standard for CO₂ emissions from new fossil fuel-generating units (“2012 Proposed Rule”).⁷ In the 2012 Proposed Rule, EPA sought to combine electric utility steam-generating units (boilers and IGCC units that are currently in the Da category with combined cycle units (which are currently in the KKKK category) into a new category of sources (TTTT category) for purposes of GHG emissions. The 2012 Proposed Rule required that all new fossil fuel-fired EGUs meet an electricity-output-based emissions rate of 1,000 lb CO₂/MWh of electricity generated on a gross basis.⁸ As of September 20, 2013, EPA withdrew the 2012 Proposed Rule.

Although President Obama directed EPA to issue a new proposed rule for new EGUs no later than September 20, 2013, the President provided no deadline for the final rule for new sources.⁹ For existing, reconstructed, or modified EGUs, the president directed EPA to propose performance standards no later than June 1, 2014 with a final version due no later than June 1, 2015.¹⁰

After receiving more than 2.5 million comments, EPA significantly revised the 2012 Proposed Rule. Specifically, EPA has elected to use existing EGU categories, to propose separate standards of performance based on distinct “best system of emissions reduction” (“BSER”) for each subcategory, and to clarify fee calculation for greenhouse gases in Title V permits.

TABLE OF ACRONYMS

ACRONYM	TERM
BSER	Best System of Emissions Reduction
CAA	Clean Air Act
CCS	Carbon Capture and Storage (or Sequestration)
CO₂	Carbon Dioxide
EGU	Electric Generating Unit
EPA	Environmental Protection Agency
GHG	Greenhouse Gas
HAP	Hazardous Air Pollutant
IGCC	Integrated Gasification Combined Cycle
lb CO₂/MWh	Pounds of CO ₂ per Megawatt-hour
MMBtu/hr	Million British Thermal Units per Hour
MWh	Megawatt-hour
NO_x	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NGCC	Natural Gas Combined Cycle
NSPS	New Source Performance Standards
PM	Particulate Matter
RIA	Regulatory Impact Analysis
SO₂	Sulfur Dioxide

SUMMARY OF KEY PROVISIONS OF 2014 PROPOSED RULE

PERFORMANCE STANDARD	EXCLUSIONS	TITLE V OPERATING PERMIT FEES
Subpart Da: Natural Gas-Fired Combustion Turbines (BSER: Natural Gas Combined Cycle) <ul style="list-style-type: none"> • Large Turbines (heat input > 850 mmBtu/hr – 1,000 lb CO₂/MW-hr) • Small Turbines (heat input ≤ 850 mmBtu/hr – 1,000 lb CO₂/MW-hr) 	Small Size Exemption —NSPS not applicable to units of less than 219,000 MWh	Exemption of GHGs from the presumptive minimum fee of ~\$47/ton via cost adjustment that ensures sufficient fee collection to cover program costs while not collecting Title V permit fees approaching \$200,000 annually for GHGs alone.
	Potential Electric Output Exemption —NSPS not applicable to units selling less than one third of output to the grid (replacing the Simple-Cycle Combustion Turbine Exemption of the 2012 Proposed Rule).	
Subpart KKKK: Fossil Fuel-Fired Boilers and IGCC Units (BSER: Partial Carbon Capture and Storage) <ul style="list-style-type: none"> • 1,100 lb CO₂/MW-hr 12-operating-month rolling average • 1,000–1,050 lb CO₂/MW-hr 84-month rolling average 	Non-Fossil Fuel Exemption —Unit generates 90% or more of electricity with non-fossils.	

OVERVIEW OF STATUTORY AND REGULATORY AUTHORITY TO REGULATE GHGS UNDER CAA SECTION 111

Section 111 enumerates two types of authority EPA may use to regulate air pollutant emissions from stationary sources like power plants. First, under Section 111(b), EPA may directly set performance standards for *new sources* or existing sources *undergoing a major modification*.¹¹ Second, under Section 111(d), EPA can require the states to set performance standards for *existing* sources.¹² In June 2011, the U.S. Supreme Court held that the CAA preempted GHG pollution suits under federal common law because the CAA, through provisions like Section 111, “speaks directly” to the regulation of greenhouse gas emissions from sources like power plants.¹³

NEW SOURCE PERFORMANCE STANDARDS (“NSPS”) FOR CATEGORIES DESIGNATED UNDER CAA SECTION 111(B)

Under CAA Section 111(b), EPA must list categories of stationary sources that cause or contribute to air pollution that likely endanger public health or welfare. Under Section 111(b), EPA must then regulate emissions from new sources and some

modified sources within the defined source categories by issuing a standard of performance for that source category. Under Section 111(b), EPA has no authority to regulate existing sources in the designated categories either directly or indirectly.

Category Designation Under CAA Section 111(b)

CAA Section 111(b)(1)(A) requires EPA to list any category of stationary sources that “causes, or contributes significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare” on a periodic basis.¹⁴ This endangerment finding is a “prerequisite for listing additional source categories under Section 111(b), but is not required to regulate GHGs from source categories that have already been listed [under Section 111(b)], such as EGUs at power plants and refineries.”¹⁵ Endangerment findings apply to a source category as whole.¹⁶

EPA’s authority to “distinguish among classes, types, and sizes within categories of new sources” is quite broad.¹⁷ EPA can exercise “considerable discretion” under its Section 111 authority.¹⁸ Although Section 111 allows EPA to distinguish between subcategories of sources, “EPA is not required by law to subcategorize”¹⁹ For example, EPA did not exceed its discretion in establishing one uniform new source performance

standards for nitrogen oxide (“NO_x”) emissions from utility and industrial boilers under Section 111 of CAA even though EPA had previously set a range of standards based on boiler and fuel type.²⁰ This precedent indicates that if EPA provides sufficient justification for doing so, EPA could potentially combine multiple source categories that have previously been identified as endangering public health or welfare through emission of a pollutant to create a single, designated source category.

EGUs are sources under CAA Section 111. EPA has included EGUs on the Section 111(b) list of stationary sources since 1979, and has issued final standards of performance for new utility units for pollutants, such as NO_x, particulate matter (“PM”), and sulfur dioxide (“SO₂”).²¹ In April 2007 in *Massachusetts v. EPA*,²² the U.S. Supreme Court held that GHGs meet the definition of “air pollutant” under the CAA. In 2009, EPA issued a finding that GHG air emissions may reasonably be anticipated to endanger Americans’ public health and welfare (“2009 Endangerment Finding”).²³

The 2012 Proposed Rule for new sources of carbon dioxide adopted a “one category approach” in which EPA did not distinguish between categories and subcategories it has previously recognized under Section 111(b); it proposed that all EGUs falling within the category meet the same emissions limit regardless of fuel type.²⁴

In contrast, the 2014 Proposed Rule uses existing source categories under current 40 CFR part 60 subpart Da for fossil fuel-fired utility boilers and IGCC and current subpart KKKK for simple and combined cycle natural gas-fired stationary combustion turbines under two co-proposals.²⁵ First, EPA proposes redefining “EGU” under the subparts solely for the 2014 Proposed Rule by incorporating three additional criteria: (1) the unit actually supplies more than one third of its potential electric output to the grid using a three year rolling average methodology; (2) the unit supplies more than 219,000 MWh, not the current 25 MW, of net electrical output to the grid (similar to the EPA Acid Rain Program definition) and (3) any EGU which derives 10% or less of its heat input over a three year period from fossil fuel is not subject to the proposed carbon standards.²⁶

As an alternative to modifying existing subparts for carbon standards, EPA co-proposes combining Da and KKKK for purposes of regulating CO₂ emissions only, not emissions of

other conventional pollutants, in a new subpart: TTTT.²⁷ By combining existing categories, EPA states that it is not creating a new source category.²⁸ EPA seeks input on whether combining categories under new subpart TTTT will offer additional flexibility in emissions guidelines for existing sources. For example, EPA posits that the TTTT subcategory may be eligible for a system-wide approach, such as emissions rate averaging, that covers fossil-fuel fired steam generating units and combustion turbines.²⁹

Interaction between the 2009 Endangerment Finding and Category Designation for EGUs. According to EPA, “Clean Air Act Section 111 does not require the EPA, as a prerequisite to regulating any particular air pollutant, to issue an endangerment finding or a cause-or-contribute significantly finding for that air pollutant from that source category.”³⁰ However, CAA Section 111 may be alternatively interpreted to require that EPA base its regulations of the GHG CO₂ from EGUs on finding both that (1) CO₂ air pollution may reasonably be anticipated to endanger public health or welfare and (2) that CO₂ emissions from EGUs cause or contribute significantly to air pollution.³¹ Under this interpretation, the 2009 Endangerment Finding would likely suffice for the first prerequisite for all categories of EGUs, but the fulfillment of the second prerequisite may be category dependent with larger EGUs more easily identified as causing or significantly contributing to air pollution.³²

A third interpretation takes a mixed approach of the first two. This interpretation of Section 111 may require that EPA base its regulation of CO₂ emissions from electric generating units on a rational basis for protection of the public health or welfare. Under this interpretation, the 2009 Endangerment Finding combined with the fact that EGUs are the largest stationary source emitters of CO₂ could provide a strong justification for regulation of electric generating units.³³

Performance Standards

In *American Electric Power Co. v. Connecticut*, the Court explained that under the mechanics of the Section 111(b)(1)(B), EPA “must establish standards of performance for emission of pollutants” for new or modified sources within each designated category EPA has listed under Section 111(b).³⁴ The language of Section 111 defines a standard of performance as “a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the

best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.” Performance standards for new sources apply nationally and are effective upon promulgation.³⁵

Emissions Limitation or Emissions Standard. An emissions limitation or an emissions standard under the CAA is “a requirement established by the State or the Administrator which limits the quantity, rate or concentration of emissions of air pollutants on a continuous basis.”³⁶ As with designation of categories, EPA has significant discretion to determine the appropriate level for the standards. Nonetheless, the CAA requires EPA to set a standard of performance reflecting “the best system of emission reduction . . . adequately demonstrated.”³⁷ To determine the best technological system of emission reduction, EPA reviews technologies to determine the types of emissions reduction systems that exist and their effectiveness in reducing the target air pollutant.³⁸ Included in the technology review is an analysis of the benefits and disbenefits of the systems in terms of cost, air quality impacts, non-air quality impacts and energy efficiency.³⁹ The final result is often a rate-based standard determined by the emissions reductions achievable by the effectiveness of one or more systems, but not a requirement that a specific technology be implemented to meet the new source performance standard (“NSPS”).⁴⁰

BSER and Defining “Adequately Demonstrated” Under CAA

Section 111. EPA identifies four factors for determining the “best system of emission reductions . . . adequately demonstrated (“BSER”)”: (i) technical feasibility,⁴¹ (ii) technology (innovation),⁴² (iii) costs of the system,⁴³ and (iv) degree of emissions reductions.⁴⁴

In the 2014 Proposed Rule, EPA briefly addresses its proposed emissions standards for natural gas-fired stationary combustion turbines base on NGCC as a BSER, stating that “virtually all new sources in this category are using NGCC technology.”⁴⁵ The Proposed Rule does not thoroughly analyze NGCC as a BSER in terms of its technological innovations or costs. In contrast, EPA’s lengthier analysis of the proposed BSER for fossil fuel-fired and IGCC EGUs signals EPA’s concern that carbon capture and sequestration is less obviously “adequately demonstrated.”

Technically Feasible: EPA Considers a Technology to be “Adequately Demonstrated” if the Technology is Reasonably Projected to Exist in the Near Future. EPA may be able to “adequately demonstrate[]” a performance standard is “achievable,” or “technically feasible,” even in the absence of specific data, if EPA has reasonably extrapolated from existing data. “[S]ection 111 ‘looks toward what may fairly be projected for the regulated future, rather than the state of the art at present.’”⁴⁶ To do so, EPA “may make a projection based on existing technology, though that projection is subject to the restraints of reasonableness.”⁴⁷ Furthermore, “EPA may compensate for a shortage of data through the use of other qualitative methods, including the reasonable extrapolation of a technology’s performance in other industries.”⁴⁸ Yet, “EPA may not base its determination that a technology is adequately demonstrated or that a standard is achievable on mere speculation or conjecture.”⁴⁹

As a result of the holdings in *Portland Cement and Lignite Energy Council v. EPA*, EPA may determine that an emissions control technology will be adequately demonstrated in a specific number of years, and may set a current standard for that future time that will reflect the projected emissions reductions. EPA also has the authority to revise performance standards and determine that a technology that EPA had previously reasoned would be adequately demonstrated is in fact not adequately demonstrated. EPA can then delay or revise the performance standard to correct the misjudgment.

EPA argues it is not required to demonstrate at the plant level that its selected technology is feasible, because it is charged with creating national, uniform standards.⁵⁰ Court decisions under other provisions of the CAA have reinforced EPA’s contention that standards need not be feasible for every potential actor affected by the standard in order to be deemed “adequately demonstrated.”⁵¹

In a 1976 rulemaking under CAA Section 111 concerning copper smelting furnaces, EPA promulgated standards that were achievable for most but not all types of existing furnaces.⁵² EPA asserted that it was authorized to set only one standard for the different sources “in order that the standard may reflect the maximum feasible control for that class.”⁵³ EPA explained that where the application of the standard would effectively ban a process, there must be an alternative process that is

“functionally interchangeable” and the economic impact of the single standard must be reasonable.⁵⁴ EPA was satisfied that both requirements were met for new sources, but finding the economic impact for converting existing reverberatory furnaces unreasonable, it exempted them from the standard. Thus, where EPA is setting standards for new plants, the technology need not be possible in all types of plants currently in existence.

In defending the 2014 Proposed Rule, EPA asserts that “each step in the [CCS] process has been determined to be feasible” through (i) an extensive literature record;⁵⁵ (ii) data from fossil fuel-fired industrial plants currently in commercial operation and pilot-scale fossil-fuel-fired EGUs currently in operation; and (iii) progress toward completion of construction of fossil fuel-fired EGUs implementing CCS at commercial scale.⁵⁶ From these data points, EPA asserts that “there are no insurmountable technological, legal, institutional, regulatory or other barriers that prevent CCS from playing a role in reducing GHG emissions.”⁵⁷

Technology Innovation: EPA’s Aim of Promoting Emerging Technology and Innovation Can Be at Odds with the Analysis of Whether a BSEER is Adequately Demonstrated. The D.C. Circuit has noted that “[a]lthough it is conceivable that a particular control technique could be considered both an emerging technology and an adequately demonstrated technology, there is inherent tension between the two concepts.”⁵⁸

In justifying partial CCS in the 2014 Proposed Rule, EPA discusses the potential for continued technological innovation.⁵⁹ In the preamble to the Proposed Rule, EPA summarizes examples of EGUs implementing or proposing to implement CCS on some scale. In particular, EPA mentions five EGUs that are incorporating CCS on a commercial scale: Southern Company’s Kemper County (Mississippi) Energy Facility; SaskPower’s Boundary Dam CCS Project (Estevan, Saskatchewan, Canada); Summit Power’s Texas Clean Energy Project (near Odessa, Texas); the Hydrogen Energy California Project (Kern County, California); and NRG Energy’s post-combustion carbon capture project at the company’s W.A. Parish generating station (southwest of Houston, Texas).⁶⁰

Despite these examples, EPA has also noted that the example projects have required significant tax dollars and none applies CCS to coal-fired EGUs. As a result, it is arguable that EPA has

selected an emerging technology that is not adequately demonstrated and lacks sufficient research success to consider it technically feasible for purposes of generation planning for the foreseeable future.

Costs: Courts Defer to EPA’s Analysis of Costs in the BSEER Analysis Unless the Costs are Unreasonable. Historically, courts have been deferential to EPA on the agency’s analysis of costs of the BSEER, requiring no specific calculation methodology of subfactors, only that the costs not be “exorbitant”⁶¹ or “excessive.”⁶² Courts have relied on EPA’s own determination that costs were not unreasonable, stating “[t]his is a judgment call with which we are not inclined to quarrel,” even when characterizing the cost of controls as “substantial.”⁶³

Arguably, EPA’s proposal reaches the threshold for “exorbitant” costs as EPA itself has stated that using currently available CCS technologies “would add around 80 percent to the cost of electricity for a new pulverized coal (PC) plant, and around 35 percent” for a new IGCC plant.⁶⁴ These increased costs result from the parasitic energy load associated with CCS. As much as 30 percent of the electricity that a plant produces could be used for CCS.⁶⁵

In the Regulatory Impact Analysis, EPA discounts the costs of CCS by explaining that it does not expect that the 2014 Proposed Rule will have any impacts on the price of electricity, employment or labor markets, or the U.S. economy because EPA anticipates no new coal-fired units.⁶⁶ EPA explains that the large supply of natural gas is likely to ensure that all new fossil-fuel-fired units are likely to be fueled by methane, not coal.

EPA analysis of costs associated with a control process often accounts for any revenue generated by the sale of by-products of the control process. For example, in a regional haze program, EPA took into account the revenue from fly ash that was generated during the control process.⁶⁷ Under other sections of the CAA, EPA has even considered savings to the end consumer.⁶⁸ While EPA considers cost savings to the customer in its analysis, EPA often willingly ignores costs that are passed along to the consumer.⁶⁹

Although EPA minimizes consumer cost impacts, EPA does acknowledge construction costs as a large barrier in CO₂ capture and sequestration.⁷⁰ EPA argues that many of these costs can be offset by selling CO₂ for enhanced oil recovery

("EOR").⁷¹ EPA has projected that installing carbon capture would not unreasonably increase costs and, in some instances, could decrease costs.⁷²

EPA's projections are based on a series of assumptions, which may not reflect reality.⁷³ For example, the Kemper site, which has been touted as evidence that partial CSS can be commercialized, has had ballooning construction costs (from \$2.4 billion to \$4.7 billion) and has already resulted in significant rate hikes for consumers.⁷⁴ Most recently, Mississippi Power Co. CEO Ed Holland, the owner of the Kemper facility, sought approval for a 22 percent rate hike for the EGU.⁷⁵

Degree of Emissions Reduction: EPA Balances Degree of Emissions Reduction Against Factors Like Cost. Citing *Sierra Club v. Costle*⁷⁶ and *Essex Chemical Corp. v. Ruckelhaus*,⁷⁷ EPA explains that a BSER analysis must weigh the degree of reductions achievable by each system.⁷⁸ Neither of these cases states that emissions reductions be given more weight than costs or other factors. *Sierra Club v. Costle* suggests that no one factor is less important than others and that no one factor is more important than others. The court highlighted the difference in focusing on emissions reduction rates under the BSER analysis as opposed to the "lowest achievable emission rate" analysis used to prescribe standards for nonattainment areas. It noted that costs and other factors are to have much more of a role in the BSER analysis than in the "lowest achievable emission rate" analysis.

In the 2014 Proposed Rule, EPA focuses heavily on the relative amount of emissions reductions that could be achieved by different technologies potentially applicable to coal-fired facilities. For example, when making the BSER determination, EPA discounted highly efficient generation options like subcritical pulverized coal and circulating fluidized bed combustion.⁷⁹ EPA stated that both lacked sufficient CO₂ reductions because even though the units are more efficient than existing technology, they would emit between 1,450 to 1,800 lb CO₂/MWh.⁸⁰

Performance Standard Options. Under the CAA, EPA has the authority to issue traditional rate-based performance standards.⁸¹ EPA may also set emissions limits either for equipment within a facility or for an entire facility. Whether EPA has authority under Section 111(b) to implement performance standards based on market mechanisms is less clear. While EPA

attempted to create a national trading program for new and existing sources under the Clean Air Mercury Rule ("CAMR"),⁸² the design of CAMR subjected new and modified sources under Section 111(b) to traditional rate-based standards as well as a trading program.

EPA has characterized its past rules for EGUs as "fuel- and technology-neutral," setting one standard for all included sources.⁸³ In EPA rules for PM, SO₂, and NO_x, EPA set the standard by examining emissions rates of coal-fired units.⁸⁴ EPA's rationale for focusing on coal was that coal has higher sulfur, nitrogen, and ash contents compared to oil or gas, and as a result selecting the BSER for coal was more "complex."⁸⁵ For that BSER determination, EPA looked first at the source technology that would have the greatest challenge reducing emissions, and then used that to set the standard.

In contrast, in the current proposal, EPA is setting the standard based on the best performer. In the 2012 Proposed Rule, EPA recommended NGCC technology as the only BSER for both coal and natural gas. By the agency's own admission, doing so represented "a departure from prior agency practice."⁸⁶ In the new Proposed Rule, EPA identifies partial CCS as the BSER for coal-fired EGUs, yet EPA does not substantially change the emissions standard (from 1,000 CO₂/MWh to 1,100 CO₂/MWh for new fossil-fuel-fired boilers and IGCC units).⁸⁷

EPA appears to be attempting to indirectly regulate fuel use through the proposed emissions standard even though courts have recognized that under the CAA, EPA cannot require use of a certain fuel type.⁸⁸ Although EPA has asserted that it can prefer some technological processes at the expense of others, in all similar examples, it was only the technology, and not the fuel, that was being banned.⁸⁹

Similarly, it appears that by setting the standard at 1,000 lb CO₂/MWh, EPA is effectively requiring that all new coal plants adopt CCS technology. Under Section 111(b)(5), EPA may not prescribe a "particular technological system" unless EPA first determines that it is not feasible to set or enforce a standard of performance for a source category. Arguably, CCS is a "particular technological system" and cannot be forced upon EGUs without a determination by EPA. However, the possibility that an EGU could switch fuel from coal to gas may undercut the argument of EGUs that the 2014 Proposed Rule effectively

mandates a “particular technological system” because the fuel switching is an alternative to installing and operating technology.⁹⁰

Regulation of Modified and Reconstructed Sources

An existing source may be directly regulated by EPA under Section 111(b) only if the particular facility undertakes a major construction project that increases emissions, changes production methods, or replaces a significant portion of components *after* the date on which EPA has proposed to issue emissions standards that would affect NSPS for a designated category.⁹¹

EPA has specifically stated that the 2014 Proposed Rule does not apply to modification or reconstruction of existing sources.⁹² Thus, a modification or reconstruction of an existing EGU at a site will not be subject to the emissions standard, but new construction at a site with existing EGUs will be subject to the 2014 Proposed Rule.⁹³ Under Section 111(d) of the CAA, EPA must create regulations for existing sources in a category if it promulgates standards for new sources.

■ STANDARDS OF PERFORMANCE FOR EXISTING SOURCES UNDER SECTION 111(D)

The 1979 version of the CAA grants EPA authority under 111(d) to set standards for certain existing stationary sources not already covered by Section 110 or Section 112 of the Act. In the 1990 Clean Air Act Amendments, the referenced portion of Section 112 was deleted and Section 111(d) was amended to account for this change. However, the Senate and House versions of the bill amended 111(d) in different ways. In the House version, it was amended through Section 108(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.’”⁹⁴ In the Senate version, Section 111 was amended through Section 302(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).’”⁹⁵ Through a drafting error, both amendments are included in the final version of the statute.

Under the House version, EPA is prohibited from regulating a category of facilities that EPA already is regulating under

Section 112 of the statute, which addresses emissions of hazardous air pollutants (“HAPs”). As EPA has issued a final rule regulating HAP emissions from power plants (the Mercury and Air Toxic Standards Rule), a literal interpretation of the language disallows Section 111(d) regulation of GHGs from power plants. EPA has elected to interpret the disparate language in House and Senate Amendments to Section 111(d) to allow EPA to regulate GHGs from existing power plants and other existing stationary sources despite regulation of these categories under Section 112.

EPA’s interpretation of Section 111(d) of the CAA allows for regulation of pollutants from existing sources if two conditions are met: (i) the target pollutant is not otherwise regulated by the CAA as either a criteria pollutant under the national ambient air quality standards or as a hazardous air pollutant, and (ii) the category of sources is determined to require a NSPS for the target pollutant.⁹⁶ It is reasonable to expect that the D.C. Circuit Court of Appeals will be called upon to decide this important threshold issue. The outcome could turn on whether the court decides that the statutory language is clear in denying EPA authority to use Section 111(d) in these circumstances or whether it decides that the statutory language is ambiguous and defers to EPA’s reasonable interpretation.

If EPA has authority to proceed to regulate existing sources under Section 111(d), it will encounter a different landscape than the familiar command and control of new and modified sources provided by Section 111(b) because Section 111(d) uses a combined federal/state process to impose emissions limits. Before EPA can indirectly regulate GHG emissions for a category of existing sources, EPA must first propose regulations for new sources in the same source category under Section 111(b). EPA did so for new EGUs on January 8, 2014 with the 2014 Proposed Rule. After proposing NSPS, EPA may establish an emissions guideline document for emissions at existing sources. States subsequently use the guideline document in drafting state plans that establish “standards of performance” for existing sources within the source categories EPA has established under Section 111(b).⁹⁷ EPA then approves each state plan in a manner similar to the National Ambient Air Quality Standards program in CAA Section 110.⁹⁸ In this process, the EPA emissions guideline functions as a floor for the state standard setting.⁹⁹

EPA May Not Directly Prescribe Performance Standards for Existing Sources

CAA Section 111(d) does not give EPA direct authority to develop nationally applicable standards of performance for existing sources except in limited circumstances. CAA Section 111(d) states that only “where a State fails to submit a satisfactory plan,” EPA “shall have the same authority . . . to prescribe a plan for [such] State . . . as [EPA] would have under [CAA Section 110(c)] . . . in the case of failure [by a state] to submit an implementation plan”¹⁰⁰ Under its more restricted authority under Section 111(d), EPA has promulgated regulations for itself and states to follow in developing and submitting state plans under Section 111(d).¹⁰¹ The regulations set forth the requirements EPA must meet to develop a guideline document,¹⁰² actions EPA must undertake if a state plan is unsatisfactory,¹⁰³ and the substantive elements a state must include for its plan to be approved by EPA.¹⁰⁴

EPA’s Guideline Document. To aid states in complying with Section 111(d), EPA drafts a guideline document “containing information pertinent to control of the designated pollutant” from the focused-upon source category.¹⁰⁵ EPA has interpreted CAA Section 111(d) to require a three-step process for drafting an emissions guideline.¹⁰⁶ First, EPA identifies potential emissions limits achievable from existing “emissions reductions systems” for a category of existing sources. Second, EPA evaluates each emissions limit through a cost benefit analysis so as to develop an emissions guideline on the “best system.” Third, the agency publishes the emissions guideline.

Despite substantive requirements on EPA for establishing emissions guidelines, EPA retains discretion to determine the degree of specificity to include in the guideline.¹⁰⁷ Additionally, EPA may or may not elect to issue model standards for existing sources that could then be adopted by states.¹⁰⁸ Furthermore, the regulations do not specify the amount of consideration that states or EPA are to give to the remaining lives of existing sources.

Because Section 111(d) has been used relatively rarely compared to other sections of the CAA, there are limited precedents for how EPA will or should implement future performance standards under Section 111(d). There have been no lawsuits challenging the sufficiency of guidelines under Section 111(d);

instead, litigation touching upon Section 111(d) has avoided substantive issues. For example, in *New Jersey v. EPA*, the performance standards for existing sources established by the Clean Air Mercury Rule were vacated because EPA failed to properly delist coal- and oil-fired EGUs under CAA Section 112 prior to initiating rulemaking under Section 111.¹⁰⁹ When setting emissions guidelines in the past, EPA has mostly focused the emissions guidelines on the implementation of emissions control systems at the facility level. EPA has not significantly ventured into “beyond-the-fence” measures that consider emissions reduction systems that can be implemented across a market sector or source category. The 2014 Proposed Rule’s discussion of creating the new TTTT category indicates that EPA is considering beyond-the-fence regulations for existing EGUs. EPA stated:

We solicit comment on the relative merits of each approach. In particular we seek comment on whether the co-proposal to combine the categories and codify the GHG standards for all new affected sources in subpart TTTT will offer any additional flexibility for any future emission guidelines for existing sources, for example, by facilitating a system-wide approach, such as emission rate averaging, that covers fossil-fuel fired steam generating units and combustion turbines.¹¹⁰

Much of the deference granted EPA on Section 111 regulation is rooted in the fact that under Section 111(b), EPA is in the role of predicting the future of emissions reduction technology for new sources.¹¹¹ Under Section 111(d), EPA may not have the same degree of discretion because EPA’s own regulation says that EPA “will specify different emission guidelines” when relevant subfactors “make subcategorization appropriate.”¹¹² Even if EPA uses similar logic in setting the state guidance as it did in selecting CCS as BSER for new sources, that analysis may not be sufficient to justify nearly as stringent a standard for existing sources. Nevertheless, even less stringent standards could have a significant impact given the volume of carbon emitted by existing EGUs.

The Congressional Research Service states that EPA has indicated that the preferred approach for reducing GHGs from existing units is increasing efficiency,¹¹³ but there is no formal announcement of EPA’s plans.

Procedural Requirements for EPA's Guideline Documents for the States. The regulations in 40 C.F.R. Section 60.22 require EPA to first issue emissions guidelines in a draft form that is open to public review and comment. The regulations do not state specific time periods for public review and comment. After the comment period, EPA considers the received comments and issues final guidelines.¹¹⁴ Additionally, EPA may issue the draft guidelines at the same time as or following proposal of a performance standard under Section 111(b), but not before.¹¹⁵

While the procedural requirements under Section 111(d) are sparse, there is precedent for the process for establishing guidelines in EPA's previous issuance of guidelines under Section 111(d) for municipal waste combustors, municipal solid waste landfills, sulfuric acid production facilities, kraft pulp mills, primary aluminum reduction plants, phosphate fertilizer plants, and hospital/medical/infectious waste incinerators.¹¹⁶

State Plan Requirements

The CAA states that EPA's "[r]egulations . . . under [Section 111(d)] shall permit the State in applying a standard of performance to any particular source under a plan submitted under [Section 111(d)] to take into consideration, among other factors, the full remaining useful life of the existing source to which the standard applies." States have great flexibility in developing the plans as they can consider factors like the remaining useful life of the existing source,¹¹⁷ and they can employ regulatory mechanisms other than traditional emissions rate limitations.¹¹⁸

Under current regulations, states are required to submit plans for the performance standards within nine months of the publication of final emissions guidelines unless an exception applies.¹¹⁹ If a state does not have any existing sources that would be covered by the regulations, then that state instead submits a certification letter by the nine-month state plan deadline, and is thereafter exempt from the 111(d) guideline requirements.¹²⁰

Substantive Requirements. The state implementation plans must include an emissions inventory as well as emissions limitations and compliance times that meet the minimum requirements set out in EPA's emissions guidelines.¹²¹ Before adopting the plan, the state must, in most circumstances, "conduct one or more public hearings within the State on such plan or

plan revision."¹²² If the state's compliance schedule exceeds 12 months from the date of the submittal of the plan, then the plan must include legally enforceable increments of progress to achieve compliance.¹²³

Exceptions to EPA's Minimum Requirements and Challenges to EPA Decisions.

A state may apply for an exception to the minimum requirements of EPA's emissions guidelines, either as to the application of less stringent standards or as to longer compliance schedules for existing sources than those in the emissions guidelines. The state must demonstrate that the cost of pollution controls is unreasonable for the affected facilities due to (i) facility age, location, or design; (ii) physical impossibility of installing controls; or (iii) other factors that make a less demanding standard or final compliance time significantly more reasonable.¹²⁴ This petition is only "on a case-by-case basis for particular designated facilities or classes of facilities."¹²⁵

In addition to states' ability to petition on the basis that compliance would be unreasonable for various factors, governors may petition EPA to increase the rigor of CAA Section 111 regulations.¹²⁶ Section 111 allows governors to compel EPA to act by petitioning EPA to (i) list a category that it is required to regulate, (ii) regulate pollutants from a listed category, or (iii) increase the stringency of standards on the basis of a new, innovative, or improved technology or process that achieves greater continuous emissions reductions and that has been adequately demonstrated.¹²⁷

State Options for Regulating Existing Sources. Section 111(d) provides states with significant flexibility in determining how to develop a plan that meets EPA's guidelines. The CAA points to the Section 110 State Implementation Plan Process as the model for the Section 111(d) process. This approach gives states some authority over a few aspects of the rule applicable to existing EGUs. First, states can control the manner of regulation if the minimum standards of the guidelines are met. This means that as "long as the ultimate effect of a State's choice of emission limitations is complian[t] with . . . standards, the State is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation."¹²⁸ Second, states can likely use the flexible program elements delineated in Section 110: economic incentives such as fees, marketable permits, and auctions of emissions rights.¹²⁹ Third, states may

create more stringent standards than the emissions guidelines for existing sources.¹³⁰

EPA Approval of State Plans Under CAA Section 111(d)

Section 111(d) of the CAA requires EPA to “prescribe regulations which shall establish a procedure similar to that provided by [CAA Section 110 relating to National Ambient Air Quality Standards] under which each State shall submit to [EPA] a plan 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”¹³¹ After EPA receives a state plan or a revision to a state plan, EPA must approve or disapprove the plan “within four months after the date required for submission of a plan.”¹³² A state plan is “satisfactory” if the plan includes emissions standards that “prescribe allowable rates of emission except when it is clearly impracticable.”¹³³ EPA may not disapprove a state plan simply because it prefers alternative approaches. Instead, EPA may disapprove a state’s implementation plan only if the plan is “unsatisfactory” according to the metrics of the Section 111(d) regulations.¹³⁴

If a state fails to submit a plan within the default timeline of nine months, or within an alternative timeline approved by EPA, or if EPA disapproves the state plan, EPA must “prepare and publish proposed regulations setting forth a plan” for the state within six months after the state’s submission deadline for the plan.¹³⁵ If the state submits a plan that EPA determines is satisfactory before the six months pass, EPA is no longer obligated to issue a replacement plan.¹³⁶ EPA’s replacement plan will require full compliance with the emissions guidelines of all covered EGUs unless an owner or operator of a facility applies for individual relief.¹³⁷ In those limited circumstances, EPA will consider whether to grant relief based upon the factors in 40 C.F.R. Section 60.24(f).¹³⁸

CONCLUSIONS

- The CAA grants EPA significant authority to directly regulate GHG emissions from new EGUs and indirectly regulate existing EGUs as they are already designated sources under Section 111(b).

- The 2009 Endangerment Finding may be a sufficient basis for EPA to regulate CO₂ emissions unless the Supreme Court determines that EPA must also demonstrate for each existing category of EGUs that the category contributes significantly to GHG pollution. Depending on the outcome of *Utility Air Regulatory Group v. EPA*, EPA may be forced to rely on the 2014 Proposed Rule as the endangerment finding for stationary sources.
- Under its Section 111(b) authority, EPA maintains discretion to subcategorize sources and propose emissions limitations or standards for new sources in those subcategories.
- EPA has substantial discretion to determine if an emissions reduction system is adequately demonstrated. EPA may predict future technological advances and require new, modified, and reconstructed EGUs to adopt the unproven technology at a specified future date. Historically, EPA has received considerable deference in its BSER determinations. The 2014 Proposal may stretch this deference beyond its limits because of the unproven nature of commercial CCS, the high costs, and the dismissal of alternative BSER options.
- Past experience indicates that EPA will likely use a rate-based approach to regulate new, modified, or reconstructed sources. If the TTTT category is selected, it is possible that existing sources could be subject to a novel market-wide averaging scheme.
- The existence of a HAP regulation for EGUs under Section 112 could circumscribe EPA’s authority to use Section 111(d) to regulate CO₂ emissions from existing EGUs. The scope of this limitation ultimately could be decided in court.
- EPA’s role in regulating existing sources is mainly limited to issuing guidance that sets a minimum emissions standard. With EPA’s specific statement that the 2014 Proposed Rule does not apply to modified or reconstructed sources, the current rule has little direct impact on existing sources.
- States retain significant discretion to adopt technology and policy that meets the minimum requirements of EPA’s emissions guidelines. However, with little precedent in developing guidelines under Section 111(d), it is possible that EPA will attempt to curb state discretion in favor of the most uniform national standard allowable under the statutory scheme.

- Performance guidelines provided to states in developing their state plans are more flexible than those EPA may adopt in regulating new, modified, and reconstructed sources. EPA's discretion related to existing sources is significantly circumscribed compared to new sources.
- Congressional members have repeatedly expressed dismay and frustration with the 2014 Proposed Rule for new sources and the impending proposed rule for existing sources for a variety of economic and political reasons. Various bills have been introduced and letters sent to EPA.

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PRESIDENT'S TIMELINE FOR EPA ACTION

MILESTONE	DATE
New Proposed Rule for New EGUs	September 20, 2013: COMPLETE
Final Rule for New EGUs	Not specified
Proposed Rule for Existing EGUs	June 1, 2014
Final Rule for Existing EGUs	June 1, 2015
Proposed Rule for Modified/Reconstructed EGUs	June 1, 2014
Final Rule for Modified/Reconstructed EGUs	June 1, 2015

ENDNOTES

- 1 In materials supporting the repropoed rule, EPA identified five EGUs incorporating CCS on a commercial scale. Three of the CCS projects are in the planning state, and the two under construction have exceeded projected costs. James McCarthy, Cong. Research Serv., R43127, *EPA Standards for Greenhouse Gas Emissions from Power Plants: Many Questions, Some Answers* 9–10 (2013).
- 2 “Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units,” 79 Fed. Reg. 1429, 1433 (to be codified as 40 C.F.R. pts 60, 70, 71 and 98), available at <http://www.gpo.gov/fdsys/pkg/FR-2014-01-08/pdf/2013-28668.pdf> [hereinafter “2014 Proposed Rule”].
- 3 *Id.* at 1446.
- 4 This standard would require capture, compression and storage of about 40% of produced CO₂ from affected plants. McCarthy, *supra* note 1, at 5.
- 5 Barack Obama, Memorandum for the Administrator of The Environmental Protection Agency, “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>.
- 6 *Id.*
- 7 “Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units,” 77 Fed. Reg. 22392, 22394 (proposed Apr. 13, 2012, withdrawn Sept. 20, 2013) (to be codified as 40 C.F.R. pt 60), available at <http://epa.gov/carbon-pollutionstandard/pdfs/20120327proposal.pdf> [hereinafter “2012 Proposed Rule”].
- 8 C.F.R. at 29 (“This proposed standard is based on the demonstrated performance of natural gas combined cycle (NGCC) units, which . . . are likely to be the predominant fossil fuel-fired technology for new generation in the future . . . NGCC qualifies as the ‘best system’ of emission reduction . . . that the EPA has determined has been adequately demonstrated because NGCC emits the least amount of CO₂ and does so at the least cost.”).
- 9 Barack Obama, Memorandum for the Administrator of the Environmental Protection Agency, Power Sector Carbon Pollution Standards, *supra* note 5.
- 10 *Id.*
- 11 Clean Air Act § 111(b), 42 U.S.C. § 7411(b) (1990).
- 12 *Id.* at § 111(d), § 7411(d).
- 13 *American Electric Power Co., Inc. v. Connecticut*, 131 S. Ct. 2527, 2537–38 (2011). Eight states, one city, and three land trusts brought suit against electric companies for their alleged contributions to the public nuisance of global warming. The first district court opinion, *Connecticut v. American Electric Power Co., Inc.*, No. 04 Civ.5669 LAP, 04 Civ.5670 LAP, 2005 WL 2249748 (S.D.N.Y. Sep. 15, 2005), was amended and superseded by a second opinion, *Connecticut v. American Electric Power Co., Inc.*, 406 F.Supp.2d 265, (S.D.N.Y. Sep. 22, 2005) (dismissing the complaint because the Court believed the complaint raised several nonjusticiable political questions). The second district court opinion was vacated and remanded by *Connecticut v. American Electric Power Co., Inc.*, 582 F.3d 309 (2d Cir. 2009). The Second Circuit held that the district court erred in dismissing the complaints on political question grounds. Furthermore, the circuit court found that all Plaintiffs had standing and that they had stated a claim under the federal common law of nuisance. Certiorari was granted by *American Electric Power Co., Inc. v. Connecticut*, 131 S. Ct. 813 (Dec. 6, 2010). The Supreme Court affirmed the Second Circuit’s ruling on standing but held that “The Clean Air Act and the EPA action the Act authorizes displace any federal common-law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired power plants.” *American Electric Power Co., Inc. v. Connecticut*, 131 S. Ct. 2527 (2011). The Court reversed and remanded the case to determine whether the Plaintiffs have state law claims that are not preempted by the CAA.
- 14 CAA § 111(b)(1)(A), 42 U.S.C. § 7411(b)(1)(A).
- 15 EPA, *Background on Establishing New Source Performance Standards (NSPS) Under the Clean Air Act*, 40 C.F.R. § 60.14; 40 C.F.R. § 60.15, available at <http://epa.gov/carbonpollutionstandard/pdfs/111background.pdf> [hereinafter “Background on Establishing NSPS”].
- 16 *Id.* at n. 1.
- 17 *Id.*
- 18 *Lignite Energy Council v. EPA*, 198 F.3d 930, 933 (D.C. Cir. 1999).
- 19 *Id.*
- 20 *Id.*
- 21 Standards of Performance for New Stationary Sources (NSPS), 40 C.F.R. pt. 60 subpart Da (1979); 44 FR 33580 (June 11, 1979).C.F.R. Additionally, “[N]othing in the language of section 111(b) precludes EPA from issuing additional standards of performance for other pollutants, including HAP, emitted from new Utility Units.” Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 40 CFR pt 60, 72 and 75, 70 Fed. Reg. at 28613. “EPA listed electric utility steam generating boilers, including coal-fired boilers, and initially regulated them in subpart D of its regulations under CAA section 111. Subsequent regulation of utility boilers has been under subpart Da. The EPA listed stationary combustion turbine engines and initially regulated them under subpart GG. The stationary combustion turbine engine portions of combined cycle facilities were also regulated under subpart GG. Heat recovery steam generators (HRSG) associated with combined cycle facilities with duct burners were regulated under either subpart Da or one of the industrial boiler regulations, depending on the specific characteristics of the HRSG. To minimize the compliance burden for owners/operators of combined cycle facilities, some monitoring harmonization was done, but the two subparts were still applicable. In 2005, EPA proposed subpart KKKK as a replacement for subpart GG and specifically covered the entire combined cycle facility under subpart KKKK such that only a single set of requirements would apply. In that same year, EPA proposed to include Integrated Gasification Combined Cycle (IGCC) facilities under the applicability of subpart Da. *Notice of Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units 27–29* (Mar. 27, 2012) available at [http://www.regulations.gov#!documentDetail:D=EPA-HQ-OAR-2011-0660-0001](http://www.regulations.gov#!documentDetail=D=EPA-HQ-OAR-2011-0660-0001).
- 22 549 U.S. 497 (2007).
- 23 Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units Clean Air Mercury Rule, 40 C.F.R. pts. 60, 72, 75 (2005); 70 Fed. Reg. 28,606 (May 18, 2005), available at http://www.epa.gov/ttn/oarpg/t3/fr_notices/27982camr11.pdf [hereinafter Clean Air Mercury Rule].
- 24 2012 Proposed Rule, *supra* note 7, at 22394.
- 25 2014 Proposed Rule, *supra* note 2, at 1433.
- 26 *Id.* at 1445–46.
- 27 *Id.* at 1454.
- 28 *Id.* at 1454–55
- 29 *Id.*
- 30 2012 Proposed Rule, *supra* note 7, at 22397.
- 31 2012 Proposed Rule, *supra* note 7, at 22397.
- 32 In *Utility Air Regulatory Group v. EPA*, No. 12-1146, cert. granted Oct. 15, 2013, the U.S. Supreme Court elected to hear challenges to EPA’s greenhouse gas permitting program for stationary sources in February 2014. Despite numerous and varied challenges to EPA’s greenhouse gas regulations, the Court granted review only of whether EPA permissibly determined that its regulation of greenhouse gas emissions from new motor vehicles triggered the permitting requirement under the CAA for stationary sources. The limited nature of the Supreme Court’s review of EPA’s greenhouse gas permitting program could have little impact on whether large emissions sources will face regulation that will effectively curb greenhouse gas emissions. Because the Court is reviewing only whether regulating vehicles mandates stationary sources to obtain permits for greenhouse gas emissions, a ruling against EPA would limit the need for stationary, industrial sources to obtain prevention of significant deterioration and Title V operating permits for their greenhouse gas emissions only. Furthermore, EPA indicates that the evidence cited in the 2014 Proposed Rule about the impacts of GHGs and the contribution of EGUs to GHGs provides a sufficient independent basis for an endangerment finding for CO₂ from stationary sources. 2014 Proposed Rule at 1452–53.
- 33 2012 Proposed Rule, *supra* note 7, at 22397.
- 34 *American Electric Power Co., Inc. v. Connecticut*, 131 S. Ct. 2527, 2537–38 (2011).
- 35 See, e.g., Clean Air Mercury Rule.
- 36 Clean Air Act, 42 U.S.C. § 7602 (1990).
- 37 CAA § 111(a)(1); 42 U.S.C. § 7411(a)(1).

- 38 *Background on Establishing NSPS, supra* note 15.
- 39 Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44,354, 44,486–87 (advanced notice of proposed rulemaking, July 30, 2008).
- 40 *Background on Establishing NSPS, supra* note 15.
- 41 See *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973) (“We begin by rejecting the suggestion of the cement manufacturers that the Act’s requirement that emission limitations be ‘adequately demonstrated’ necessarily implies that any cement plant now in existence be able to meet the proposed standards. Section 111 looks toward what may fairly be projected for the regulated future, rather than the state of the art at present, since it is addressed to standards for new plants.”).
- 42 See, e.g., *Sierra Club v. Costle*, 657 F.2d 298, 347 (D.C. Cir. 1981) (“balancing of cost, energy, and nonair quality health and environmental factors embraces consideration of technological innovation as part of that balance. The statutory factors which EPA must weigh are broadly defined and include within their ambit subfactors such as technological innovation.”).
- 43 CAA § 111(a)(1) (directing EPA to take into account the costs of any proposed emissions reduction system).
- 44 See *Sierra Club*, 657 F.2d at 326 (“we can think of no sensible interpretation of the statutory words “best . . . system” which would not incorporate the amount of air pollution as a relevant factor to be weighed when determining the optimal standard for controlling . . . emissions”).
- 45 2014 Proposed Rule, *supra* note 2, at 1485.
- 46 *Lignite Energy Council v. EPA*, 198 F.3d 930, 934 (D.C. Cir. 1999) (quoting *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C.Cir.1973)).
- 47 *Id.* EPA relies on this decision to argue that a standard of performance is “achievable” if the technology that will allow them to meet the standard is adequately demonstrated. This results in a paradigm where the achievability of a standard is based solely on its technical feasibility, effectively reducing two requirements into one.
- 48 *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1054 n. 70 (D.C. Cir. 1978). In *Lignite Energy Council v. EPA*, 198 F.3d at 934, EPA’s use of emissions data from two high-sulfur coal-fired utility boilers and foreign utility boilers because of an inability to collect emissions data for any coal-fired industrial boilers was reasonable because EPA had demonstrated that the emissions-reducing technology could be successfully applied to coal-fired utility boilers under a “wide range of operating conditions” including those analogous to the load cycles of industrial boilers.”
- 49 *Lignite Energy Council v. EPA*, 198 F.3d at 934 (citing *National Asphalt Pavement Ass'n*, 539 F.2d 775, 787 (D.C. Cir. 1976). See also *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d at 391–92 (“The Administrator may make a projection based on existing technology, though that projection is subject to the restraints of reasonableness and cannot be based on ‘crystal ball’ inquiry”).
- 50 See S. Rep. No. 91-1196, at 16 (1970) (“[I]and use policies must be developed to prevent location of facilities which are not compatible with implementation of national standards.”); see also *Sierra Club*, 657 F.2d at 330 (“[The] EPA must examine the effects of technology on the grand scale in order to decide which level of control is best.”).
- 51 See *International Harvester Co. v. EPA*, 478 F.2d 615, 640 (D.C. Cir. 1973) (“ . . . as long as feasible technology permits the demand for new passenger automobiles to be generally met, the basic requirements of the Act would be satisfied, even though this might occasion fewer models and a more limited choice of engine types.”); *NRDC v. EPA*, 489 F.3d 1364, 1376 (D.C. Cir. 2007) the D.C. Circuit upheld EPA’s decision to apply the same hazardous air pollutant requirements to different types of wood products facilities because the facilities (i) used the same inputs, (ii) “compet[ed] in the same markets,” and (iii) had similar HAP emissions.
- 52 See, e.g., Standards of Performance for New Stationary Sources, Primary Copper, Zinc, and Lead Smelters, 40 C.F.R. pt. 60 (1976); 41 FR 2331, 2333 (Jan. 15, 1976) (a single standard for SO₂ emissions for new construction or modifications of reverberatory, flash, and electric smelting furnaces in primary copper smelters was reasonable as to flash and electric, but not reverberating smelters.) [hereinafter Copper, Zinc, and Lead Smelters].
- 53 *Id.*
- 54 *Id.*
- 55 2014 Proposed Rule, *supra* note 2, at 1471. On November 12, 2013 the Chair of the Scientific Advisory Board (“SAB”) of EPA’s Office of the Administrator issued a memorandum calling into question the adequacy of peer review of materials relied upon by EPA in setting CCS as a BSER. James R. Mihelcic, Preparations for Chartered Science Advisory Board (SAB) December 4–5, 2013 Discussions of EPA Planned Agency Actions and their Supporting Science in the Spring 2013 Regulatory Agenda, available at [http://yosemite.epa.gov/sab/sabproduct.nsf/18B19D36D88DDA1685257C220067A3EE/\\$File/SAB+Wk+GRP+Memo+Spring+2013+Reg+Rev+131213.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/18B19D36D88DDA1685257C220067A3EE/$File/SAB+Wk+GRP+Memo+Spring+2013+Reg+Rev+131213.pdf). Specifically, the memo stated:
- The SAB Work Group recommends that the SAB review the science supporting the [2014 Proposed Rule] . . . EPA stated that the science and technical bases of this action do not rely on new science, are based on the Best System of Emission Reduction, and the action is technology based. In contrast, the Work Group notes that *this action involves precedential and novel issues that rely on new technologies and science for carbon capture and storage (CCS)*. EPA Staff explained that the CCS provisions would only be binding to coal fired EGUs and are based on three examples of implementing partial CCS. They stated that the strong demonstration these facilities make for the technology . . . and this proposal relies on existing sequestration studies and reporting requirements for carbon capture. *The Work Group finds that the scientific and technical basis for carbon storage provisions is new science and the rulemaking would benefit from additional review . . .* EPA staff explained that the NETL studies were all peer reviewed and EPA did not conduct additional peer review(s). However, *based on additional information provided to the Work Group from NETL, the peer review appears to be inadequate* (emphasis supplied).
- 56 2014 Proposed Rule, *supra* note 2, at 1434–35, 1442, 1468, 1475, 1479 (Southern Company’s Kemper County (Mississippi) Energy Facility); *id.* at 1434–35, 1475 (SaskPower’s Boundary Dam CCS Project); *id.* at 1434, 1442 (Summit Power’s Texas Clean Energy Project); *id.* at 1435, 1436 n. 13 (Hydrogen Energy California Project); *id.* at 1434, 1476 (N.R.G. Energy at W.A. Parish).
- 57 On November 15, 2013, members of the House Committee on Energy and Commerce called for EPA to withdraw its Proposed Rule as being prohibited by the Energy and Policy Act. They argue this law explicitly prohibits EPA from setting new source performance standards under Section 111 of the Clean Air Act based on the emissions reductions achieved at facilities receiving assistance from the Energy Department’s Clean Coal Power Initiative or advanced coal project tax credits. Letter from the House of Representatives Comm. on Energy and Commerce to Gina McCarthy, Administrator for EPA (Nov. 15, 2013), available at <http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/letters/20131115EPA.pdf>. EPA has not responded to the letter.
- 58 *Sierra Club*, 657 F.2d at 341, n. 157.
- 59 EPA refers to other CCS projects—domestic and worldwide—that are helping to further develop the CCS technology. 2014 Proposed Rule, *supra* note 2, at 1475. EPA quotes an industry leader arguing that CCS in part is not commercially feasible because there are yet to be regulations making it worthwhile to attempt to make CCS commercially feasible. *Id.* at 1469 (citing *AEP Places Carbon Capture Commercialization On Hold, Citing Uncertain Status Of Climate Policy, Weak Economy, American Electric Power* (July 14, 2011), <http://www.aep.com/newsroom/newsreleases/?id=1704>).
- 60 2014 Proposed Rule, *supra* note 2, at 21–22, 28–29, 236–37.
- 61 *Essex Chemical Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973) (to be “adequately demonstrated,” the system must be “reasonably reliable, reasonably efficient, and . . . reasonably expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way.”); see also *Lignite Energy Council v. EPA*, 198 F.3d 930, 933 (D.C. Cir. 1999) (“EPA’s choice will be sustained unless the environmental or economic costs of using the technology are exorbitant.”).
- 62 *Sierra Club v. Costle*, 657 F.2d 298, 383 (D.C. Cir. 1981).
- 63 *Sierra Club*, 657 F.2d at 383, 313.
- 64 2012 Proposed Rule, *supra* note 7, at 22415–16.
- 65 McCarthy, *supra* note 1, at 10.

- 66 See Regulatory Impact Analysis for the Proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units 5-54 (2013), *available at* <http://www2.epa.gov/sites/production/files/2013-09/documents/20130920proposalria.pdf>. In analyzing the 2013 proposal, EPA reused the 2012 Proposed Rule Integrated Planning Model results with review through the Energy Information Administration's most recent Annual Energy Outlook to confirm its projection that industry would construct new coal-fired units.
- 67 2014 Proposed Rule, *supra* note 2, at 1464.
- 68 See, e.g., 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 40 C.F.R. pts 85, 86, 600 (2012); 77 Fed. Reg. 62,624 (October 15, 2012) (rulemaking setting GHG emissions standards for Light-Duty Vehicles for Model Years 2017–2025).
- 69 See *Portland Cement Ass'n v. EPA*, 513 F.2d 506 (D.C. Cir. 1975) (demand is inelastic); *Sierra Club v. Costle*, 657 F.2d 298 (D.C. Cir. 1981) (consumers can bear costs).
- 70 In noting the construction costs, EPA does not evaluate the environmental risks and resulting costs potentially linked to injection of CO₂ underground. The National Academy of Sciences published a study abstract in November 2013 that concludes that the underground injection of carbon dioxide in Texas may have spurred earthquakes. Wei Gan and Cliff Frohlich, *Gas Injection May Have Triggered Earthquakes in the Cogdell Oil Field, Texas*, *available at* <http://www.pnas.org/content/early/2013/10/31/1311316110.abstract>.
- 71 *Id.* at 218, 232.
- 72 See 2014 Proposed Rule, *supra* note 2, at 1476.
- 73 See *supra* note 57 discussing Congressional concern over EPA's misuse of government-funded projects in its BSER analysis.
- 74 *Mississippi Power Wants Rate Hike, Mainly for Kemper Plant*, *Mississippi Business Journal* (Nov. 17, 2013) *available at* <http://msbusiness.com/blog/2013/09/06/mississippi-power-ceo-lobbying-rate-hike-kemper-plant/>.
- 75 *Id.*
- 76 657 F.2d 298 (D.C. Cir. 1981).
- 77 486 F.2d 427 (D.C. Cir. 1973).
- 78 2014 Proposed Rule, *supra* note 2, at 1463–64.
- 79 *Id.* at 1468.
- 80 *Id.*
- 81 See 40 C.F.R. § 60.82 (2011) for an example of a traditional emissions rate mechanism wherein each covered sulfuric acid production unit is subject to an emissions rate of 4 pounds SO₂ per ton of acid produced. See 40 C.F.R. § 60.33b(d)(1) (2011) for an example of allowing compliance with NO_x emissions for municipal waste combustors based on a plant-wide, not individual, unit average.
- 82 *New Jersey v. EPA*, 517 F.3d 574, 578 (D.C. Cir. 2008) (vacated CAMR on other grounds without reaching the question of whether the proposed cap-and-trade program and its design parameters were within the agency's authority).
- 83 See, e.g., National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 40 C.F.R. pts 60, 63 (2011); 76 FR 24976, 25062 (May 3, 2011).
- 84 *Id.* at 25062–63.
- 85 *Id.*
- 86 2012 Proposed Rule, *supra* note 7, at 22418.
- 87 2014 Proposed Rule, *supra* note 2.
- 88 In *PPG Indus., Inc. v. Harrison*, 660 F.2d 628, 636 (5th Cir. 1981), the court granted a petition to set aside EPA's determination that a plant had to meet a new emissions standard because the court agreed with petitioner that EPA was effectively forbidding a certain type of fuel: "EPA attempts to achieve indirectly in this case what it could not do directly under the Clean Air Act: require the use of a certain type of fuel in order to comply with a performance standard." Importantly, this case based its decision in part on the fact that Section 7411(h), allowing for EPA to establish "design, equipment, work practice, or operational standards," was not operational at the time of EPA's determination in this case, whereas it is in effect today.
- 89 See Primary Copper, Zinc, and Lead Smelters, *supra* note 52, at 2333–34 (reverberatory smelting furnaces for copper were found to be inferior at controlling emissions, and so flash and electric smelters were preferred; however, the rule exempted reverberatory smelting furnaces when one was using "high levels of volatile impurities," because using other types of smelting furnaces had not yet been "commercially demonstrated").
- 90 McCarthy, *supra* note 1, at 13.
- 91 *Background on Establishing NSPS*, *supra* note 15.
- 92 2014 Proposed Rule, *supra* note 2, at 1446.
- 93 The proposal to exclude modifications and reconstructions from the new source performance standards has drawn negative comment. See American Public Power Association, *Comments on Proposed New Source Performance Standards (NSPS) for Electric Generating Units (EGUs)*, *available at* <http://www.publicpower.org/files/PDFs/APPA-NSPS-Comments-WithAttachments-Final.pdf>. Advocacy groups contend that excluding modifications and reconstructions is against statutory language, congressional intent, and past agency practice. They point to the exclusion as evidence that CCS is not a BSER for new sources as EPA admits there is insufficient evidence to apply the CCS BSER to existing sources undergoing upgrades.
- 94 Clean Air Act Amendments, Pub. L. No. 101-549, § 108(g) 104 Stat. 2467 (1990).
- 95 Clean Air Act Amendments, Pub. L. No. 101-549, § 302(a) 104 Stat. 2574 (1990).
- 96 CAA §111(d)(1), 42 U.S.C. § 7411(d)(1) (2006).
- 97 *Id.* at §7411(d).
- 98 *Id.*
- 99 Adoption and Submittal of State Plans for Designated Facilities, 40 C.F.R. § 60.24(c)(3).
- 100 CAA § 111(d)(2)(A).
- 101 40 C.F.R. Part 60, 60.20–60.29.
- 102 *Id.* at § 60.22.
- 103 *Id.* at § 60.27, § 60.21(a). "Designated pollutant means any air pollutant, the emissions of which are subject to a standard of performance for new stationary sources, but for which air quality criteria have not been issued and that is not included on a list published under section 108(a) or section 112(b)(1)(A) of the Act."
- 104 *Id.* at § 60.22.
- 105 *Id.*
- 106 *Id.*; EPA's regulations established under § 111(d) are in 40 C.F.R. Part 60, Subpart B, §§ 60.20–60.29.
- 107 See *Chevron U.S.A. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837 (1984).
- 108 *Background on Establishing NSPS*, *supra* note 15.
- 109 *New Jersey v. EPA*, 517 F.3d at 578.
- 110 2014 Proposed Rule, *supra* note 2, at 1454–55.
- 111 *Lignite Energy Council v. EPA*, 198 F.3d 930, 933 (D.C. Cir. 1999).
- 112 Subfactors EPA will consider include: "different sizes, types, and classes of designated facilities when costs of control, physical limitations, geographical location, or similar factors . . ." 40 C.F.R. § 60.22.
- 113 McCarthy, *supra* note 1 (citing EPA, *Rulemaking for Greenhouse Gas Emissions from Electric Utility Steam Generating Units* (May 2011), *available at* <http://www.epa.gov/air/tribal/pdfs/presentation-ghggas-emissionsutility05-25-2011.pdf>).
- 114 See *id.* Even if EPA promulgates final performance standards for new or modified sources, the regulatory language does not contain a deadline for publication of a final emissions guideline document.
- 115 40 C.F.R. § 60.22.
- 116 40 C.F.R. Part 60, subparts Cb through Ce; 40 C.F.R. Part 62.
- 117 40 C.F.R. § 60.22.
- 118 See CAA §111(d), 42 U.S.C. § 7411(d) (2006) language directing submission of state plans be "similar to that provided by [Section 110], which allows for "economic incentives such as fees, marketable permits, and auctions of emissions rights." Examples of existing state actions that may be sufficient or equivalent to EPA guidance issued under §111(d) include the nine-state Regional Greenhouse Gas Initiative for the power sector, California's economy-wide emissions trading program, Colorado's Clean Air–Clean Jobs Act, renewable portfolio standards, and energy-efficiency programs.

- 119 40 C.F.R. § 60.23(a). If a different deadline is specified in the regulation or if EPA determines it is necessary, EPA may “extend the period for submission of any plan or plan revision or portion thereof.” C.F.R. § 60.27(a).
- 120 *Id.* at § 60.23(b).
- 121 *Id.* at § 60.24–60.25.
- 122 *Id.* at § 60.23(c)(1).
- 123 *Id.* at § 60.24(c).
- 124 *Id.* at § 60.24(f).
- 125 40 C.F.R. § 60.24.
- 126 CAA § 111(g), 42 U.S.C. § 7410(g).
- 127 *Id.*
- 128 *Virginia v. EPA*, 108 F. 3d 1397, 1407–08 (D.C. Cir. 1997) (citing *Train v. Natural Resources Defense Council, Inc.*, 421 U.S. 60, 79 (1975)).
- 129 CAA § 111, 42 U.S.C. § 7410(a)(2)(A).
- 130 40 C.F.R. § 60.24(g).
- 131 CAA § 111(d)(1).
- 132 40 C.F.R. § 60.27(b).
- 133 *Id.* at § 60.24(b).
- 134 *Id.* at § 60.27(c).
- 135 *Id.* at § 60.27(c), (d).
- 136 *Id.*
- 137 *Id.* at § 60.27(e)(2).
- 138 These include: “[u]nreasonable cost of control resulting from plant age, location, or basic process design;” “[p]hysical impossibility of installing necessary control equipment;” and “[o]ther factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable.”

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