Issue Brief for States

EPA's Forthcoming Performance Standards for Regulating Greenhouse Gas Pollution from Power Plants (Clean Air Act Section 111)

SUMMARY

EPA's forthcoming regulation of greenhouse gases (GHGs) from power plants will reduce greenhouse gas pollution and drive cleaner generation in the electricity sector. The flexibility provided to states may also provide an opportunity for states to design programs that address their clean energy goals.

EPA has committed to regulating GHGs from power plants by setting performance standards under Section 111 of the Clean Air Act. The agency committed to issuing a proposed rule by September 30, 2011, but recently announced that it will miss that deadline and will announce a new schedule soon. Section 111 provides EPA with authority to establish New Source Performance Standards (NSPS)[1] and provides states with the authority to regulate existing sources subject to EPA guidelines and approval. This pre-proposal brief provides background information about the law and existing regulations and raises issues that states may want to consider in evaluating EPA's proposal. States should look to the proposed rule for more information, as EPA's approach to the regulations remains to be seen.

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[1] EPA regulations under Section 111 are often referred to as New Source Performance Standards, or the NSPS program. In the case of GHGs, Section 111 will be used to establish performance standards for both new and existing sources, and therefore referring to the program as *new source* performance standards could be confusing. We therefore refer to regulations under the Section 111 program as performance standards throughout this brief.

I. Background: EPA Must Regulate GHGs Under the Clean Air Act

EPA has announced that it will regulate greenhouse gas (GHG) pollution from power plants under the stationary source performance standards provisions in Section 111 of the Clean Air Act (CAA). EPA committed to issuing proposed regulations for power plants by September 30, 2011, and final regulations by May 26, 2012, in a settlement agreement.[2] On September 14, however, EPA announced that it would miss the September 30, 2011, deadline for the proposed rule and stated that it would announce a new timetable "soon."[3]

EPA has also committed to regulate oil refineries under the same section, with proposed standards due by December 10, 2011, and a final rule by November 10, 2012,[4] although these are not addressed in this brief.

According to the Supreme Court's ruling in *Massachusetts v. EPA*,[5] the Clean Air Act requires EPA to regulate GHG pollution unless the agency determines that such pollution would not endanger public health and welfare or that the science is too uncertain to make a reasoned decision. EPA found that GHGs do, in fact, endanger public health and welfare on December 7, 2009.[6] This finding obligated EPA to regulate GHG pollution from motor vehicles, the specific type of regulation at issue in *Massachusetts v. EPA*, and also triggered other obligations of EPA under the Clean Air Act.

One of these Clean Air Act obligations is to set air pollution performance standards for categories of stationary sources that "contribute significantly to air pollution which may be reasonably anticipated to endanger public health and welfare."[7] EPA has previously "listed"[8] and established performance standards for dozens of source categories, including power plants, but it has not previously regulated GHGs through these performance standards. EPA is also required to revise these standards, unless it determines that such a revision is unnecessary, at least every eight years.[9]

In 2006, a group of states[10] and environmental organizations petitioned EPA to regulate GHGs under Section 111 after EPA revised power plant performance standards for conventional pollutants but did not set standards for GHG pollution. EPA rejected the petition, and the parties appealed the decision in *New*

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[2] Fossil fuel-fired power plant settlement agreement and amendment to settlement agreement, New York v. EPA, 2007 U.S. App. LEXIS 22688 (D.C. Cir. 2007), *available at* http://www.epa.gov/airquality/ghgsettlement.html (amended agreement postponed deadline for proposed rule from July 26, 2011 to Sep. 30, 2011).

[3] Amy Harder, *EPA to Delay Climate-Change Rules*, NAT. J. (Sep. 15, 2011), http://www.nationaljournal.com/domesticpolicy/epa-to-delay-climate-change-rules-20110915.

[4] Petroleum refineries settlement agreement and amendment to settlement agreement, New York v. EPA, 2007 U.S. App. LEXIS 22688 (D.C. Cir. 2007), *available at* (http://www.epa.gov/airquality/ghgsettlement.html).

[5] Massachusetts v. EPA, 549 U.S. 497 (2007).

[6] Endangerment and Cause or Contribute Findings for GHGs Under Section 202(a), 74 Fed. Reg. 66,496 (Dec. 15, 2009).

[7] Clean Air Act (CAA), § 111(b)(1)(A), 42 U.S.C. § 7411(b)(1)(A).

[8] EPA is required to list a category of stationary sources if, in the Administrator's judgment, it "causes, or contributes significantly to, air pollution, which may reasonably be anticipated to endanger public health or welfare." CAA, § 111(b)(1)(A), 42 U.S.C. § 7411(b)(1)(A).

[9] CAA, § 111(b)(1)(B), 42 U.S.C. § 7411(b)(1)(B).

[10] California, Connecticut, Delaware, Maine, Massachusetts, New Mexico, New York, Oregon, Rhode Island, Vermont, Washington, and the District of Columbia (treated as a state under the Clean Air Act) were the state parties when the original settlement agreement was reached in the case on Dec. 23, 2010. New York City is also a party.

York v. EPA.[11] In 2007, the D.C. Circuit Court of Appeals remanded the petition back to EPA in light of the *Massachusetts v. EPA* decision. On December 23, 2010, EPA entered into a settlement agreement with the parties under which it is now obligated to regulate GHGs from power plants and oil refineries according to the timetable noted above.

The Supreme Court affirmed the EPA's authority to regulate GHGs from power plants under Section 111 in *American Electric Power Co. v. Connecticut*,[12] decided on June 20, 2011, although this was not the central issue in the case. The court held that states and other parties could not bring GHG pollution suits against power companies under federal common law because "the Clean Air Act and the EPA actions it authorizes" already address the issue of abating carbon dioxide emissions from fossil fuel-fired power plants. The court specifically cited Section 111 as "speak[ing] directly" to the regulation of GHG emissions from power plants, and noted that once a category is listed under Section 111, "the agency must establish standards of performance for emission of pollutants."[13]

EPA held five listening sessions on planned performance standard regulations in February and March of 2011. One of these listening sessions was specifically for state, local, and tribal representatives, and another listening session, organized with assistance from the Georgetown Climate Center, was for "coalition groups" and also included state representatives.[14]

II. The Basics: Performance Standards Under Clean Air Act Section 111

Section 111 of the Clean Air Act defines a performance standard as a "degree of emission limitation" that is set at the "greatest degree ... achievable through the application of the best system of emission reduction which … the Administrator determines has been adequately demonstrated."[15] The performance standards are explicitly to take into account the cost of achieving reductions, any other health and environmental impacts, and energy requirements.[16]

Section 111 provides EPA with two different types of authority.

- *New Sources:* Section 111(b) provides EPA authority to set performance standards directly for new sources, or sources undergoing major modifications.[17]
- *Existing Sources:* Section 111(d) provides EPA authority to require states to set performance standards for existing sources, where those sources have not been regulated under Clean Air Act provisions for criteria air pollutants or hazardous pollutants.[18] GHGs are not currently regulated either as criteria pollutants or under the hazardous air pollution program, and therefore GHG emissions from existing stationary sources will be regulated under this authority. These state regulations are generally required to be at least as stringent as emission guidelines established by EPA.

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[11] 2007 U.S. App. LEXIS 22688 (D.C. Cir. 2007).
[12] 131 S. Ct. 2527 (2011).
[13] *Id.* at 2537-38.
[14] Lists of participants and recordings of the sessions are available on the EPA's website. *Listening Sessions on Greenhouse Gas Standards for Fossil Fuel-Fired Power Plants and Petroleum Refineries*, U.S. EPA, http://www.epa.gov/airquality/listen.html.
[15] CAA, § 111(a)(1), 42 U.S.C. § 7411(a)(1). This level of control is commonly referred to as "best demonstrated technology," or BDT. The statute no longer includes the term "technological" in its definition of the standard, however, and therefore "BDT" may be misleading and is not used in this brief.
[16] *Id.*
[17] CAA, § 111(b), 42 U.S.C. § 7411(b).
[18] CAA, § 111(d), 42 U.S.C. § 7411(d).

A. What Sources Will Be Covered?

In its settlement agreement, EPA commits to setting GHG performance standards and emission guidelines for power plants covered in Subpart Da of its regulations. Subpart Da covers fossil fuel-fired boilers that generate steam to create electricity that have a combustion capacity of at least 73 megawatts (250 MMBTU/hr).[19]

According to the EPA, this would affect approximately 1,525 generating units at 605 facilities; 1,200 of these units are coal-fired boilers. The remaining units are oil- and gas-fired boilers, and two integrated gasification combined cycle units.[20]

Notably, Subpart Da does not include most electricity-generating combustion turbines, such as natural gas combustion turbines, which are covered by other performance standards (Subparts GG and KKKK). Some commentators[21] have urged EPA to consider including such turbines in the current rulemaking.[22] Natural gas combined cycle units, which make use of both gas combustion turbines and waste heat-powered steam turbines, are among the most efficient fossil fuel-fired electric generating units. Including such units in the rulemaking could potentially lower overall abatement costs in a program with averaging or trading, and could also potentially allow the program to include elements designed to recognize early investments in cleaner power sources. On the other hand, depending on the structure of the regulations, including efficient gas turbine units in the regulated category might serve as a disincentive to the replacement of older units with more efficient natural gas turbines, because such gas turbines would also be subject to regulation.

B. How Will EPA Set Numerical Standards or Guidelines for Power Plants?

In setting performance standards and emission guidelines for existing sources, EPA typically conducts a review that:

- identifies what emission reduction systems exist for a particular pollutant and how much they reduce air pollution in practice;
- identifies potential emission limits based on this review; and
- evaluates each limit in conjunction with costs, secondary air benefits (or disbenefits) resulting from energy requirements, and non-air quality impacts such as solid waste generation.[23]

The resulting standard is usually a "numerical emissions limit, expressed as a performance level (i.e., a rate-based standard)."[24]

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[19] Standards of Performance for New Stationary Sources, 40 C.F.R. §. 60.40Da(a)(1).

[20] OFFICE OF AIR QUALITY AND PLANNING STANDARDS, EPA, PRESENTATION TO PANEL OUTREACH MEETING WITH SERS at slides 29-30 (2011), available through InsideEPA.com [Hereinafter EPA PRESENTATION TO SERS].

[21] Throughout this brief, we refer to positions taken by "commentators" that may be valuable for states to be aware of. "Commentators" is used to describe legal academics, policy experts working at think tanks or similar organizations, and expert state staff or other stakeholders that have been engaged in dialogues, both formal and informal, about the upcoming rulemaking. Where possible, citations are provided.

[22] *See, e.g.*, DIALOGUE ON PERFORMANCE STANDARDS FOR EXISTING POWER PLANTS: PARTICIPANT COMMENTS TO EPA, section 4 (2011), http://pdf.wri.org/epa_comments_dialogue_on_performance_standards_2011-04-18.pdf (category ... should cover all fossil-fuel-fired electric generating units that exceed a specific threshold).

[23] Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44354, 44486-87 (advanced notice of proposed rulemaking, July 30, 2008) [hereinafter ANPR].

[24] *Id.*

Subdivision of Categories

The Clean Air Act provides EPA with the explicit authority to subdivide a category when setting standards.[25] EPA may choose to set different standards for natural gas-fired power plants and coal-fired power plants, for example, or choose to further subdivide standards based on the type of coal-fired power plant (i.e., stoker-fired, pulverized coal, cyclone-fired, fluidized-bed combustion, or coal gasification). Some commentators have also urged EPA to consider how units function in the electricity market (i.e., whether they are peaking units or baseload units), and how a unit's functional role may affect opportunities for increasing energy efficiency.[26]

GHG Control Options for Power Plants

EPA has previously conducted an analysis of GHG control options for power plants in its guidance to states for implementing Best Available Control Technology (BACT) review under the Prevention of Significant Deterioration (PSD) program.[27] In that guidance, the EPA expects that BACT will most often be the application of energy efficiency technologies or processes, at least initially.[28] Fuel switching to less carbon-intensive fuels (i.e., from coal to natural gas) or use of carbon, capture, and sequestration (CCS) technologies are also to be considered in the analysis, but EPA acknowledges that they are likely to be too expensive or difficult to implement.[29] EPA is likely to consider these same control options during its review of available "systems of emissions reduction," which is a different though similar process. In analyzing "systems of emissions reduction" for new sources, EPA will also likely look at the efficiencies of different available power plant designs, including supercritical boilers, integrated gasification, and combined cycle technologies.[30]

Technologies that May be Adequately Demonstrated in the Future

Courts have found that EPA has the authority to determine that a particular system of emissions reduction will be adequately demonstrated at a future date,[31] and EPA believes it may set commensurate performance standards or emission guidelines at that future date.[32] EPA could, therefore, find that a given GHG control technology will be adequately demonstrated within a specific number of years, and at that time, require a more stringent standard reflecting the adequate demonstration of that technology.[33]

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[25] CAA, § 111(b)(2), 42 U.S.C. § 7411(b)(2).

[26] *See, e.g.,* WRI DIALOGUE EPA COMMENTS, *supra* note 22, at 5.3.

[27] For more information on the Prevention of Significant Deterioration program and New Source Review, see Georgetown Climate Center's issue brief on EPA's Regulation of Greenhouse Gases, http://www.georgetownclimate.org/what-states-need-to-know-about-epa-climate-actions-0.

[28] U.S. ENVIRONMENTAL PROTECTION AGENCY, PSD AND TITLE V PERMITTING GUIDANCE FOR GREENHOUSE GASES, MARCH 2011 UPDATE at 45 (2011), http://www.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf.

[29] *Id.* at 27, 42-43. In the case of fuel switching, EPA does not require states to consider control options that would "redefine the source," such as switching from coal to natural gas fuels in most cases.

[30] *See* EPA PRESENTATION TO SERS, *supra* note 20, at slides 33-40.

[31] Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 391-92 (D.C. Cir. 1973) ("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.").

[32] ANPR, 73 Fed. Reg. 44354, 44489.

[33] Conversely, EPA also may determine through a revision of its performance standards that a given technology had not been adequately demonstrated as previously projected and delay or revise standards based on that projection.

C. How Are Standards for New Sources Implemented, and What is the Role of States?

EPA sets standards for new sources and sources undergoing major modifications directly, so states do not submit plans as they do for existing sources. Standards will become effective following promulgation of the final rule,[34] which is to be signed no later than May 26, 2012, according to the settlement agreement. According to the statute, the standards for new sources will apply to all sources constructed or modified after publication of the *proposed* regulations.[35]

States may develop and submit proposals to EPA for implementing and enforcing performance standards for new sources.[36] Such authority may be especially valuable to states that have maintained authority to implement the Prevention of Significant Deterioration (PSD) program, which requires states to conduct case-by-case reviews of new and modified sources and to require those sources to install Best Available Control Technology (BACT). Under the Clean Air Act, BACT must be at least as stringent as an applicable performance standard promulgated under Section 111.[37] In other words, the Section 111 performance standard sets the "floor" for any BACT determination.

D. How Are Standards for Existing Sources Implemented, and What is the Role of States?

For existing sources subject to regulation under Section 111(d), as is the case for GHGs, the Clean Air Act requires EPA to establish a procedure "similar to that provided by" Section 110 of the Clean Air Act.[38] Under Section 110, EPA establishes National Ambient Air Quality Standards (NAAQS) and states submit State Implementation Plans (SIPs) that specify the manner in which the state will meet the standard, subject to EPA approval.

In setting these standards for existing sources, EPA first issues "emission guidelines," which serve as "binding requirements that states are required to address when developing plans to regulate the existing sources in their jurisdictions." EPA has typically also issued model standards that states can choose to adopt.[39] The guidelines are to include:

- a description of systems of emission reduction that the EPA Administrator determines have been adequately demonstrated,
- information on the degree of emission reduction that is achievable with each system,
- information on the costs and environmental effects of applying each system to designated facilities, and
- an emission guideline that reflects the application of the best system of emission reduction (considering the cost of such reduction) that has been adequately demonstrated for designated facilities, and the time within which compliance with emission standards of equivalent stringency can be achieved.[40]

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[34] CAA, § 111(b)(1)(B), 42 U.S.C. § 7411(b)(1)(B).
[35] CAA, § 111(a)(2), 42 U.S.C. § 7411(a)(2) (definition of "new source").
[36] CAA, § 111(c), 42 U.S.C. § 7411(c).
[37] CAA, § 169(3), 42 U.S.C. § 7479(3).
[38] CAA, § 111(d)(1), 42 U.S.C. § 7411(d)(1).
[39] ANPR, 73 Fed. Reg. 44,354, 44,487.
[40] 40 C.F.R. § 60.22(b) (2009).

EPA committed under its settlement agreement to propose an emission guideline for existing sources under Section 111(d) by September 30, 2011,[41] although it recently announced it would miss that deadline, and to receive public comment on that guideline.

EPA Federal Implementation Authority

Subsection 111(d) also provides EPA the authority to create its own implementation plan for states that fail to submit an adequate plan, similar to the Federal Implementation Plan (FIP) authority under Section 110, and the authority to enforce any state plan.[42]

E. What is the Process for Submitting State Plans for Existing Sources?

States will be required to submit plans that conform to EPA's emission guidelines after the agency publishes final guidelines. According to the settlement agreement, the final guidelines are to be signed by May 26, 2012; they would be published shortly afterward. Under current regulations, states are required to submit plans within nine months of the publication of final emission guidelines.[43]

A few states may not have any existing sources that would be covered by the regulations. Those states would be required to submit a certification letter by the state plan deadline, and would then be exempt from the 111(d) requirements.[44]

There are no statutory compliance time requirements for existing sources. EPA regulations require EPA to publish a schedule of compliance times as part of the proposed and final emission guidelines.[45]

The state plans must include emissions limitations and compliance times that, in most cases, are at least as stringent as those in EPA's emission guidelines (see exceptions below). Under current regulations, if the compliance schedule extends more than 12 months from the date of the submittal of the plan, then the plan must include legally enforceable increments of progress to achieve compliance.[46]

F. Are there Exceptions to EPA's Minimum Emission Guidelines?

EPA's current regulations allow states to provide for the application of less stringent standards or longer compliance schedules for existing sources than those in the emission guidelines if a state is able to demonstrate that the cost of pollution controls is unreasonable for the affected facilities due to facility age, location or design; physical impossibility of installing controls; or other factors that make a less stringent standard or final compliance time significantly more reasonable.[47]

This provision will not necessarily apply to every emission guideline and some commentators have suggested that allowing states to include flexibilities such as averaging or trading (as described below) significantly limits the need for such waivers, as individual facilities that might otherwise have an unreasonably high compliance cost can take advantage of less expensive abatement options at other facilities to comply with the standards.[48]

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[41] Fossil fuel-fired power plant settlement agreement and amendment to settlement agreement, New York v. EPA, 2007 U.S. App. LEXIS 22688 (D.C. Cir. 2007), *available at* http://www.epa.gov/airquality/ghgsettlement.html.
[42] CAA, § 111(d)(2), 42 U.S.C. § 7411(d)(2).
[43] 40 C.F.R. § 60.23(a)(2).
[44] 40 C.F.R. § 60.23(b).
[45] 40 C.F.R. § 60.22(b)(5).
[46] 40 C.F.R. § 60.24(c), (e)(1).
[47] 40 C.F.R. § 60.24(f).
[48] *See, e.g.,* WRI DIALOGUE EPA COMMENTS, *supra* note 22, at 6.6.

G. Are there Other Special Rights for States?

Section 111 provides special petition rights to governors. Governors may compel EPA to act by petitioning EPA to list a category that it is required to regulate, to regulate pollutants from a listed category, or to 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.[49]

III. The Clean Air Act Provides States With Significant Flexibility for Regulating Existing Sources

Many commentators[50] believe that the Clean Air Act's Section 111(d) framework provides states with significant flexibility in determining how to implement regulations.

Among the key elements of this flexibility are:

- *Ability of states to control the manner of regulation*. As noted above, courts have found that the Section 110 process, which is identified in the statute as the model for Section 111(d), provides substantial deference to states, and specifically allows states control over the *manner* of regulation as long as minimum standards are met.[51]
- *Potential for use of flexible program elements*. Section 110 also explicitly authorizes states to use flexible approaches, including "economic incentives such as fees, marketable permits, and auctions of emissions rights."[52] Many commentators believe that some flexible approaches can be incorporated into state plans under Section 111(d), although there is disagreement about particular approaches, especially programs that use offsets or programs that do not involve express emissions limitations.[53] The requirement that performance standards take into account cost can also be seen as supporting the use of flexible approaches, since flexibilities such as averaging or trading can help reduce compliance costs to the extent that they help achieve greater emissions reductions at a given cost.
- *State programs may be more stringent.* As in other Clean Air Act programs, states have the explicit right to establish more stringent standards than the EPA standards for new sources or emission guidelines for existing sources.[54]

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[49] CAA, § 111(g), 42 U.S.C. §7410(g).

[50] *See, e.g.*, FRANZ T. LITZ ET AL., WHAT'S AHEAD FOR POWER PLANTS AND INDUSTRY? USING THE CLEAN AIR ACT TO REDUCE GREENHOUSE GAS EMISSIONS, BUILDING ON EXISTING REGIONAL PROGRAMS (2010), What's Ahead for Power Plants and Industry? Using the Clean Air Act to Reduce Greenhouse Gas Emissions, Building on Existing Regional Programs; GREGORY WANNIER ET AL., PREVAILING ACADEMIC VIEW ON COMPLIANCE FLEXIBILITY UNDER § 111 OF THE CLEAN AIR ACT (2011), http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file_id=60994. A list of other literature examining regulation of GHGs under Section 111 is available at Columbia Law School's Center for Climate Change Law, *Climate Regulations under Section 111 of the Clean Air Act*, CTR. FOR CLIMATE CHANGE L., http://www.law.columbia.edu/centers/climatechange/resources/caa111.

[51] For example, in *Virginia v. EPA*, the D.C. Circuit reiterated that as "long as the ultimate effect of a State's choice of emission limitations is compliance with … standards, the State is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation." 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)).

[52] CAA, § 110(a)(2)(A), 42 U.S.C. § 7410(a)(2)(A).

[53] *See, e.g.,* WANNIER ET AL. *supra* note 50 (analyzing permissibility of specific flexibilities).

[54] CAA, § 116, 42 U.S.C. § 7416 (2010).

At the same time, EPA has issued regulations under Section 111(d) on relatively few occasions, and when Section 111(d) authority has been used, it has generally been used to regulate specialized types of emissions sources.[55] Taken together with the lack of detail in the text of the statute and the relatively few court cases interpreting the law, there is some uncertainty over the full extent and nature of the flexibility that the law allows EPA and the states.

IV. What Types of State Plans Might be Permissible for Regulating Existing Sources?

In its upcoming proposed rulemaking, EPA may choose to propose guidelines for types of state programs that will be allowed under Section 111(d), and may also propose a model rule(s), or may request comment about certain types of programs or program elements. This section sketches out a few program types that EPA may consider allowing, and that states may want to consider in preparing comments on EPA's proposal.

A. State Equivalency

One approach that some parties, including some states, have proposed[56] is for EPA to allow significant flexibility in the design of state plans as long as those plans achieve GHG emissions reductions that are at least equivalent to reductions that would be achieved through EPA's emission guidelines. Such a methodology could allow states to propose programs projected to achieve an aggregate quantity of emissions reductions over a fixed period of time, even if EPA articulates its emission guidelines as an emissions rate for individual facilities.[57] This could facilitate states' use of existing state GHG reduction programs, such as the Regional Greenhouse Gas Initiative (RGGI) or California's suite of GHG reduction programs including its upcoming cap-and-trade program, as the basis for their 111(d) plans. Creating such a methodology would require addressing difficult questions about how to set the baseline for state emissions budgets, how to treat retirements of older plants, and how to ensure that programs actually achieve the projected reductions.

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[55] EPA has issued emissions guidelines under Section 111(d) for sulfuric acid mist from sulfuric acid plants, fluoride emissions from phosphate fertilizer plants, total reduced sulfur emissions (TRS) from kraft pulp mills, fluoride emissions from primary aluminum plants, and nonmethane emissions from landfills, among others. Robert J. Martineau & Michael K. Stagg, *New Source Performance Standards*, *in* THE CLEAN AIR ACT HANDBOOK 308 (Robert J. Martineau & David P. Novello eds., 2nd. ed. 2004).

[56] DIALOGUE ON PERFORMANCE STANDARDS FOR EXISTING POWER PLANTS: PARTICIPANT COMMENTS TO EPA, section 6 (2011), available at http://pdf.wri.org/epa_comments_dialogue_on_performance_standards_2011-04-18.pdf.

[57] In other words, if EPA established an emission limitation in the form of an emission rate (i.e., X metric tons CO_2/MWh), a state with an emissions cap program that required a mass-based reduction of emissions for the power sector (i.e., a reduction of X metric tons CO_2 in a given year), the state could be allowed to use that program for compliance if the quantity of GHG emissions reduced through its program was at least equivalent to the quantity of the aggregate GHG emissions that would have been reduced through the application of a rate-based standard to individual covered power plants.

B. Potential Types of Programs

- *Traditional Performance Standards – Rate-Based Standards for Individual Sources*

  Arguably, the most conservative legal option for EPA would be to establish a rate-based emission guideline applied to each facility or unit, for example a metric tons CO_2/megawatt-hour standard. Such a standard could be applied to the entire category of Electric Generating Units, or different rate-based standards could apply to differing subcategories (e.g., subcategories based on fuel type).

- *Averaging Programs*

  Averaging programs would allow facilities, firms, states, or other entities to average emissions or emission rates among different sources to demonstrate compliance with the federal guidelines. This would allow for GHG reductions to come from sources with the cheapest cost of abatement within the designated averaging "bubble" (e.g., facility, firm, state, or other entity).

- *Trading Programs*

  The Regional Greenhouse Gas Initiative (RGGI), a collaboration among ten northeastern states, already operates an emissions budget and trading program for GHG emissions from power plants. Under the program, each state has its own emissions budget and allowances, but agrees to accept allowances from other states. States make use of a shared platform to auction allowances. California is also in the process of finalizing a GHG emission budget and trading program that will include emissions from other sectors. State officials involved in these programs have requested that EPA allow their programs to serve as the basis of state plans for complying with Section 111(d) if they are found to be at least as stringent as EPA's emission guidelines.[58] Under such a scenario, EPA might set a rate-based emission guideline applicable to each facility or unit, but could allow a state to comply with the guideline by demonstrating that through its voluntary participation in a cap-and-trade program, covered facilities will collectively achieve GHG reductions at least as great as would have been achieved by applying the emission guideline to each facility (i.e., demonstrating "equivalence"). EPA could therefore potentially recognize the RGGI and California programs for compliance with Section 111(d), and allow other states to meet Section 111 requirements by adopting these or similar models.

- *Plans with State Renewable Energy or Energy Efficiency Program Elements*

  Many states have renewable energy, alternative energy, or energy efficiency standards or programs. If these programs are sufficiently aggressive they can drive significant GHG reductions in the power sector. Researchers have found, for example, that a national renewable electricity standard requiring 25 percent electricity from renewable sources by 2030 could achieve CO_2 reductions in the range of 6 to 14 percent.[59] The state of California projects even greater reductions by 2020 as a result of its aggressive renewable energy and energy efficiency policies.[60]

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[58] Letter from RGGI State Agency Heads to Regina McCarthy, Assistant Administrator, U.S. EPA (May 9, 2011), *available at* www.eenews.net/assets/2011/05/12/document_cw_02.pdf (subscription required).

[59] Range occurring in Table 2.1, Policy-Induced Change in CO2 Emissions from Electricity Sector in Final Year of Projection, 25 Percent RES, citing studies conducted by Energy Information Administration, National Renewable Energy Laboratory, and Resources For the Future. CONGRESSIONAL BUDGET OFFICE, THE EFFECTS OF RENEWABLE OR CLEAN ELECTRICITY STANDARDS 16 (2011), *available at* http://www.cbo.gov/doc.cfm?index=12166.

[60] California's renewable energy standard, which requires 33% of electricity sold in the state in 2020 to come from renewable sources, is expected to reduce total power sector emissions by 19-40 percent from projected 2012 levels when combined with the state's energy efficiency programs. Computed by comparing 2012 electricity sector

EPA could potentially allow such programs to serve as the basis for, or as key elements of, state plans, if these plans can be demonstrated to achieve reductions from covered sources at least as stringent as would be achieved under EPA's emission guidelines. EPA has previously released guidance for incorporating state energy efficiency and renewable energy programs into State Implementation Plans under Section 110.[61]

- *Negotiated Agreements*

  Colorado's state legislature passed the Clean Air Clean Jobs Act, signed on April 19, 2010, which required the state's rate-regulated utilities to develop plans for reducing air pollutant emissions from coal-fired power plants equalling either 900 MW capacity or 50 percent of their coal fleet.[62] As a result, the state's public utilities commission (PUC) has now approved plans from regulated utilities that will significantly reduce GHG emissions from coal plants, largely through plant retirements. For example, Xcel Energy projects that it will reduce CO_2 emissions from its Colorado fleet by approximately 28 percent by 2020.[63] EPA could potentially allow states to develop plans based on similar negotiated agreements that would achieve GHG reductions at least equivalent to reductions that would be achieved under EPA's emission guidelines.

Again, as of this writing, it is not known whether EPA will allow any of the above program types in the proposed or final emission guidelines.

GHG forecast (92 $MMTCO_2e$ total for imports and California generation), California Air Resources Board, GHG 2020 Emissions Forecast (2010), http://www.arb.ca.gov/cc/inventory/data/tables/2020_ghg_emissions_forecast_2010-10-28.pdf, with projected electricity-sector GHG emissions under both high and low scenarios with the 33 percent RES in 2020 (55 to 74 $MMTCO_2e$), GHG CALIFORNIA AIR RESOURCES BOARD, PROPOSED REGULATION FOR A CALIFORNIA RENEWABLE ELECTRICITY STANDARD: STAFF REPORT: INITIAL STATEMENT OF REASONS, IX-5, Appendix D, D-24 to D-28 (2010), http://www.arb.ca.gov/regact/2010/res2010/res10isor.

[61] U.S. EPA, ROADMAP FOR INCORPORATING ENERGY EFFICIENCY/RENEWABLE ENERGY POLICIES AND PROGRAMS INTO STATE IMPLEMENTATION PLANS/TRIBAL IMPLEMENTATION PLANS (2011), http://www.epa.gov/airquality/pdfs/20110418eeremanual.pdf.

[62] Utility plans must address whichever is less, 900MW or 50 percent of their coal fleet. Clean Air – Clean Jobs Act, 2010 Colo. Sess. Laws 466.

[63] *Colorado Clean Air-Clean Jobs Plan*, XCEL ENERGY, http://www.xcelenergy.com/Environment/Doing_Our_Part/Clean_Air_Projects/Colorado_Clean_Air-_Clean_Jobs_Plan (last visited Aug 15, 2011).

V. Issues to Consider During the Comment Period

EPA will generally provide at least a 60-day comment period on proposed rules. In evaluating the proposal, states may want to consider the following issues:

- *Cost of compliance to regulated entities and consumers*

  Different program types and flexibility elements may make compliance more or less expensive to regulated entities and to consumers. In general, the availability of flexibility elements will make compliance less costly for a given level of stringency. Analysis conducted by Resources for the Future found that in a hypothetical scenario, using a flexible compliance mechanism (averaging of rate-based standards) reduced overall costs by 66 percent relative to an inflexible standard.[64]

- *Administrative costs to the state*

  Different program types may also prove more or less resource intensive for states to operate. For example, RGGI states have generally found that participating in the market program is less staff-intensive than a traditional permitting program, because confirming that each entity submits the required number of allowances based on its actual emissions is less intensive than individually permitting each covered source.

- *Quantity of reduction achievable*

  Many states have set goals for GHG emissions reductions. Reducing GHG emissions from the power sector is one of the largest emissions reduction opportunities. States may want to consider how EPA's proposed emission guidelines align with their own emission reduction goals, and whether the regulations fairly treat states that exercise their right to implement more stringent regulations.

- *Alignment with economic development and jobs goals and other state policies*

  Many states have other policy goals related to the power sector, including goals to develop renewable energy or alternative energy industries, grow energy efficiency services, or reduce conventional pollution and associated health risks. In addition, states may even be able to implement programs that generate revenue that can be used toward these policy goals. For example, RGGI has raised over $900 million through allowance auction proceeds as of September 2011.[65] States may want to consider whether and how they might be able to develop plans that align with these policy goals.

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[64] DALLAS BURTRAW ET AL., RESOURCES FOR THE FUTURE, RETAIL ELECTRICITY SAVINGS FROM COMPLIANCE FLEXIBILITY IN GHG STANDARDS FOR STATIONARY SOURCES 3 (2011), http://www.rff.org/Publications/Pages/PublicationDetails.aspx?PublicationID=21606 (finding that the overall costs of a flexible standard including the costs on firms are just one-third that of an inflexible standard).

[65] *RGGI Benefits*, REGIONAL GREENHOUSE GAS INITIATIVE (RGGI) CO2 BUDGET TRADING PROGRAM, http://www.rggi.org/rggi_benefits (last visited Sep. 14, 2011).

VI. Conclusion

In summary, EPA must regulate GHGs under the Clean Air Act following the Supreme Court's decision in *Massachusetts v. EPA* and EPA's determination that GHGs endanger public health and welfare. In response to a suit brought by several states and environmental organizations, EPA has committed to regulating GHGs from power plants and oil refineries by establishing performance standards under Section 111 of the Clean Air Act, with proposed regulations for power plants originally scheduled to be issued by September 30, 2011, but now delayed for an unknown period of time. The proposed regulations will include performance standards for new and modified sources and emission guidelines for existing sources. For existing sources, EPA will require states to set performance standards through a procedure "similar to that provided by" Section 110, under which states submit plans subject to EPA guidelines and approval. Many commentators believe that this framework provides states with significant flexibility for regulating existing sources, including the ability to determine the manner of regulation and to use flexible approaches such as marketable permits. EPA may consider allowing states to use different program types or elements in their state plans, potentially including averaging, trading, renewable energy or energy efficiency policies, or negotiated agreements with utilities. Finally, states may want to consider a number of issues when reviewing EPA's forthcoming rule, including the rule's ramifications for the cost of compliance, administrative cost to the state, quantity of GHG reductions achievable, and alignment with state goals and policies.

The Georgetown Climate Center: A Resource for States on GHG Performance Standards

The nonpartisan Georgetown Climate Center seeks to advance effective climate, energy, and transportation policies in the United States—policies that reduce greenhouse gas emissions and help communities adapt to climate change.

One of Climate Center's core functions is to serve as a resource for states. This includes providing policy and legal advice during the EPA's forthcoming rulemaking on GHG performance standards for power plants.

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