

# Questions and Answers on the EPA's Legal Authority to Set "System Based" Carbon Pollution Standards for Existing Power Plants under Clean Air Act Section 111(d)



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# INTRODUCTION

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In his June 25, 2013, Climate Action Plan and an accompanying memorandum, President Obama directed the Environmental Protection Agency (EPA) to use Section 111 of the Clean Air Act to curb carbon pollution from new and existing power plants.<sup>1,2</sup> Power plants are the nation's largest source of the heat-trapping pollution that drives dangerous climate change, and there are no federal limits on their emissions.

"The question," the president said, "is whether we will have the courage to act before it's too late. And how we answer will have a profound impact on the world we leave behind, not just to you, but to your children and to your grandchildren. As a president, as a father, and as an American, I am here to say we need to act."<sup>3</sup>

Carrying out the president's directives, the EPA proposed carbon pollution standards for new power plants under Section 111(b) of the Clean Air Act on September 20, 2013.<sup>4</sup> The EPA has also begun an extensive consultation process with states and other stakeholders on carbon pollution standards for existing power plants under Section 111(d). Under deadlines set by the president, the EPA will propose an "emissions guideline" rule by June 2014 containing performance standards and compliance dates for existing plants, and it will adopt a final emissions guideline rule by June 2015 after considering public comments. States will then have until the end of June 2016 to adopt and submit plans that apply enforceable performance standards consistent with the emissions guideline to each of the carbon-emitting power plants within their borders.

The EPA is reaching out to gather state and stakeholder input on how to cut carbon pollution from existing power plants in the most environmentally beneficial and cost-effective way. The outreach process began in August with a video presentation providing an overview of standard-setting under Section 111(d).<sup>5</sup> The EPA has also asked the states and others for input on how a program for existing power plants should be designed and has scheduled nearly a dozen public listening sessions across the country.<sup>6,7</sup>

NRDC strongly supports President Obama's commitment to curb power plant carbon pollution and welcomes the EPA's outreach process.

In December 2012, NRDC proposed a flexible, "system based" plan for cutting dangerous carbon pollution from the nation's existing power plants.<sup>8</sup> Our proposal responds to the urgent threat of climate change and offers overwhelming benefits at reasonable cost. Using the same power sector modeling tools used by the EPA and the power industry, NRDC projects that our plan will achieve a 26 percent reduction in power sector CO<sub>2</sub> emissions by 2020, compared with 2005 levels, with climate protection and public health benefits worth \$26 to 60 billion in 2020, at a reasonable cost of \$4 billion.

This paper addresses frequently asked questions about implementing a system-based approach to power plant standards under Section 111(d).

## 1. WHAT IS SECTION 111 OF THE CLEAN AIR ACT?

Section 111(b) of the Clean Air Act requires the EPA to set standards of performance for categories of new and modified sources that contribute significantly to dangerous air pollution.<sup>9</sup> In 2009 the EPA determined that carbon dioxide (CO<sub>2</sub>) and five other heat-trapping air pollutants endanger the health and welfare of present and future generations.<sup>10</sup> The EPA proposed standards for CO<sub>2</sub> emissions from new power plants—specifically, fossil fuel-fired power plants (also called “electric generating units” or “EGUs”)—on September 20, 2013.<sup>11</sup>

Section 111(d) requires standards for CO<sub>2</sub> emissions from existing power plants. Section 111(d) comes into play when existing sources emit a pollutant that is not addressed under other parts of the law.<sup>12</sup>

The EPA and the states share the job of establishing those standards. Section 111(d)(1) directs the EPA to establish a procedure similar to the familiar “state implementation plan” (SIP) process for meeting national ambient air quality standards under Section 110 of the Clean Air Act. Here, instead of meeting ambient standards, the objective of the state plan is to set and enforce “standards of performance” for “any” existing source in a given category, in this case fossil-fueled power plants. The EPA approves or disapproves these state plans just as it does Section 110 SIPs. Section 111(d)(2) states that where the state fails to submit a “satisfactory” plan, the EPA must issue and enforce a federal plan.

In 1975 the EPA issued regulations to implement Section 111(d). 40 CFR 60.21-29. Those regulations require the EPA to propose and promulgate an “emissions guideline” specifying standards of performance for the existing sources in a category. 40 CFR 60.22. Emissions guidelines, the EPA’s overview presentation explains, “are binding on states” and set “the goal or mark that states have to meet when developing standards of performance for existing sources.”<sup>13</sup> The regulations require the EPA to approve state plans that meet the emissions guideline, to disapprove those that do not, and to promulgate federal plans where satisfactory state plans are lacking. 40 CFR 60.27.<sup>14</sup>

The principal criteria determining whether a plan is satisfactory are found in the definition of a “standard of performance.” Section 111(a)(1) states:

The term “standard of performance” means 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 nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

Following this definition, the EPA’s existing source regulations provide for the agency to issue an “emissions guideline” for each given category that:

reflects the degree of emission reduction achievable through the application of the best system of emission reduction which (taking into account the cost of such reduction) the Administrator has determined has been adequately demonstrated for designated facilities.

40 CFR 60.21(e), 60.22(b)(5). As explained below, these definitions, together with other terms in Section 111, govern standards of performance and state plans for existing sources.

## 2. WHAT IS A SYSTEM-BASED APPROACH?

The EPA’s overview presentation explains the range of measures that can reduce the power sector’s carbon dioxide emissions:<sup>15</sup>

EPA believes the unique characteristics of carbon pollution and the interconnected nature of the electric power sector call for a broad and flexible approach to designing the program for existing power plants. The president has told us to consider the full range of possibilities as we develop approaches that could accommodate market-based instruments, performance standards and other regulatory flexibilities.

It then summarizes a range of approaches already in discussion among stakeholders and offers some definitions:

A source-based approach evaluates emission reduction measures that could be taken directly at the affected sources—in this case, the power plants.

A system-based approach evaluates a broader portfolio of measures including those that could be taken beyond the affected sources but still reduce emissions at the source.

And when we talk about source-based and system-based approaches, there are a few additional terms that we should recognize. First, supply-side options. This term generally refers to actions that occur at the regulated source itself or at other power plants. Second, demand-side options. This term generally refers to actions that occur at locations where electricity is used as well as transmitted and distributed—not at the regulated source or other power plants.

Supply-side options can directly reduce or avoid power plant carbon dioxide emissions through energy efficiency at the source. They can also indirectly reduce or avoid power plant carbon dioxide emissions by increasing the use of low- or non-emitting electric generation. Examples may include:



- Heat rate improvements or energy efficiency at the electric generating unit;
- Fuel switching to a lower-emitting fuel or co-firing to a lower-emitting fuel;
- Re-dispatch of the electric generating unit based on carbon dioxide emission rate; or
- Renewable energy portfolio requirements.

Demand-side options can indirectly reduce or avoid emissions by lowering electricity demand. These can reduce the overall amount of electricity generated at carbon dioxide emitting power plants. They may also change the dispatch of electric generators in response to lower electricity demand. Examples may include:

- End-use energy efficiency requirements and programs;
- Demand-side management programs.

And you may know your own state has many of these programs already in place. Demand-side options address actions that reduce electricity usage by reducing demand and improving the efficiency of energy-using devices. This could include such things as improving insulation and reducing energy losses, reducing wasteful energy use, and replacement of old or inefficient appliances in favor of high efficiency appliances.

NRDC's proposal is, in the EPA's terms, a system-based approach to obtaining the most carbon pollution reduction achievable from the existing power plant fleet at a reasonable cost.

### 3. DOES THE CLEAN AIR ACT AUTHORIZE THE EPA TO EMPLOY A SYSTEM-BASED APPROACH IN ITS EMISSIONS GUIDELINES FOR EXISTING POWER PLANTS?

Yes. The EPA can set an emissions guideline for existing power plants that employs a system-based approach.

Under both Section 111(a)(1) and regulation 40 CFR 60.21(e), a "standard of performance" must be an objective, enforceable, and generally quantitative limit that reflects the emissions reductions achievable using "the best system of emission reduction" (BSER).<sup>16</sup> Standards for power plants are generally set as a limit on a plant's emission rate (e.g., pounds of pollution per megawatt-hour of electricity output, or lbs/MWh).<sup>17</sup> Other options are also compatible with the definitional terms, including a limit on an EGU's mass emissions over a period of time.<sup>18</sup>

Some argue that the "best system of emission reduction" is limited to measures implemented by each source itself (i.e., measures that are "within-the-fenceline," or "source-based"). Advocates of this approach usually contend that CO<sub>2</sub> emission standards for existing power plants should be based only on improvements to a unit's combustion efficiency, or "heat rate"—standards that would achieve very limited emission reductions, only a few percent. But nothing in the language of Section 111 limits the EPA to considering measures implemented at the source itself when setting standards or guidelines. The term "best system of emission reduction" points toward a broader perspective.

To be sure, the EPA's initial Section 111(d) standards, set during the 1970s, followed the source-based approach. Those standards typically covered a small number of isolated sources emitting pollutants of primarily local concern. An example is the standard for fluoride emissions from existing primary aluminum smelters. In contrast, the EPA included system-based measures in its 1995 standard for existing municipal waste combustors (MWCs). That standard allows nitrogen oxides (NO<sub>x</sub>) emissions credit trading between individual combustors.<sup>19</sup>

A system-based approach fits the power sector even better than it fit MWCs. The power sector contains more than 1,500 existing CO<sub>2</sub>-emitting plants, located in every state.<sup>20</sup> These plants operate in an interdependent, grid-linked system that includes all electricity generators (including plants that do not emit CO<sub>2</sub>) as well as electricity consumers, who can adopt measures to reduce electricity demand. Power sector CO<sub>2</sub> emissions have the same adverse impact wherever plants are located.

The interdependent nature of the power system means that the emissions impacts and costs of potential control measures cannot be accurately assessed by looking at each power plant in isolation. Source-specific measures that reduce a given plant's emissions will also affect its utilization. If those measures increase its cost of generation, the plant will be used less, and others will be used more, affecting the emissions of other plants and of the system as a whole. As another example, generating more electricity from renewable power plants or saving more electricity through end-use energy efficiency will reduce generation and emissions from fossil fuel-fired plants. Thus, system-based analysis is required in order to understand the net emission reductions of any potential standard and to account for its overall costs and other impacts.

Reflecting these characteristics, the system-based approach, incorporating both within-the-fenceline and beyond-the-fenceline emission control measures, makes the most sense in addressing CO<sub>2</sub> emissions from the power sector and is well within the EPA's discretion under the terms of Section 111.<sup>21</sup>

#### 4. MAY A SYSTEM-BASED APPROACH INCLUDE COMPLIANCE OPTIONS BASED ON ACTIONS BEYOND THOSE IMPLEMENTED AT AFFECTED POWER PLANTS (I.E., CREDITS FOR NON-EMITTING GENERATION OR DEMAND-SIDE EFFICIENCY)?

Yes. Under a system-based standard of performance, each CO<sub>2</sub>-emitting power plant would be subject to an enforceable emission limit. Each plant, however, would have multiple ways to demonstrate compliance with the standard, including using credits from incremental generation by non-emitting power plants and incremental end-use or transmission efficiency measures.

Under NRDC's proposal, for example, beyond-the-fenceline measures would include, for example:

- Shifting dispatch to lower-emitting plants,
- Building cleaner plants or retiring dirtier ones,
- Improving transmission efficiency (reducing line losses), and
- Improving demand-side electricity efficiency.

A plant could demonstrate compliance with the applicable standard using a combination of emission reduction measures at the source itself and qualifying credits acquired from other entities in the electric power system. Such actions may lawfully be considered part of the "best system of emission reduction" and counted in an affected plant's compliance demonstration because they reduce CO<sub>2</sub> emissions from the regulated category of power plant sources.

State plans would need to include reasonable eligibility and verification conditions on beyond-the-fenceline actions that create compliance credits. The EPA's emissions guideline should include model provisions and procedures in order to simplify the adoption and implementation of state plans.<sup>22</sup>

Non-emitting generators and energy-savings providers would not have compliance obligations in the same sense as CO<sub>2</sub>-emitting plants. But if they elect to create credits, they would have to abide by all applicable eligibility and verification conditions and should be subject to appropriate penalties for non-compliance.

While Section 111(d) contemplates that each state will submit its own plan, there is no reason why two or more states could not agree to allow emissions averaging or crediting across state lines, and build such arrangements into their plans. NRDC's proposal includes the flexibility for states to make such agreements.

#### 5. HOW WOULD A SYSTEM-BASED APPROACH AFFECT THE STRINGENCY OF THE STANDARD OF PERFORMANCE?

Including beyond-the-fenceline measures in the determination of BSER for power plants opens the door to standards that are both more effective and less costly than source-based standards.

The definitions of "standard of performance" and "emissions guideline" both provide, in substance, that standards must achieve as much emission reduction as is technically and economically achievable by the sources subject to them. The EPA must determine that the emission limit achieves the emission reductions that are "achievable" using measures that are "adequately demonstrated"—a test of technical feasibility. The agency also must "tak[e] into account the cost" as well as energy and non-air environmental impacts. The result is "the best system of emission reduction."

The technical feasibility of an emission limit is linked to the methods available for demonstrating compliance.<sup>23</sup> The EPA must make its judgments about the technologically achievable level of emission reductions in light of the compliance options that a standard or guideline allows. If a guideline allows compliance only through within-the-fenceline measures, then the emissions limit in the guideline must be supported by a finding that power plants can meet that limit using only those measures. On the other hand, if the guideline allows the use of broader, system-based options to demonstrate compliance, then the emission limit can be more stringent, reflecting the additional reductions achievable using those compliance options. The system-based approach substantially simplifies the question of technical feasibility, because it changes the inquiry from what emission reductions are available to each source acting on its own, to what emission reductions are available to each source (through averaging and credit mechanisms) across the system.

The same is true regarding the consideration of costs. The EPA needs to show that the costs of compliance are reasonable for existing power plants as a group.<sup>24</sup> That judgment must be made in light of the compliance methods the standard permits. Any given standard will be less expensive to meet if it allows compliance on a system-wide basis—that is, by measures both within and beyond the fenceline—than if it allows compliance only by on-site measures. Thus, for any given cost, system-based standards can achieve greater emission reductions.

Some have suggested that the EPA set the emissions guideline for existing power plants on the basis of the modest reductions achievable at reasonable cost within the fenceline, but then approve state plans that allow those plants to comply using cheaper, system-wide options.<sup>25</sup> This

“mismatch” approach would be arbitrary and capricious because the resulting standard would fall far short of delivering as much emission reduction as existing plants can achieve at reasonable cost using the permissible compliance options.

The system-based approach can achieve the most emission reductions from the power sector for the least cost. That characteristic virtually compels the EPA to adopt this approach. Any other approach would fail to achieve as much emission reduction from CO<sub>2</sub>-emitting power plants as is technologically and economically achievable, given the integrated, interdependent power system in which they operate.

## 6. IS THE EPA REQUIRED TO SET SEPARATE STANDARDS OF PERFORMANCE FOR EXISTING EGUS BURNING DIFFERENT FUELS?

No. Nothing in Section 111 mandates separate standards for plants burning different fuels.

Some argue that a system-based approach is prohibited because, in their view, Section 111(d) requires the EPA and the states to set separate standards of performance for existing coal-fired and gas-fired plants, and possibly even for subgroups of coal-fired plants and subgroups of gas-fired ones. Some who hold this view argue that averaging or trading may be permitted within a grouping (among coal plants, for instance) but not between coal and gas plants. Others take an even more restricted view, saying that standards may be based only on within-the-fenceline measures even within such a grouping.

The EPA has broad discretion under Section 111(b)(1)(A) to establish “categories of stationary sources” and to revise those categories from time to time. While the statute allows the EPA to account for differences between types of plants when determining the appropriate level of standards, nothing in Section 111 requires the EPA to place coal-fired and gas-fired plants in separate categories that are walled off from one another despite their interdependent operation in the power grid. Nothing in the statute requires the EPA to ignore the fact that existing plants of both types participate in an integrated electric system.

There is no statutory or even historical wall between coal and gas plants that precludes the EPA from considering the range of system-wide compliance options when setting the Section 111(d) emissions guideline. The EPA’s historical categories for new power plants do not correlate with fuel type. The current category for fossil fuel-fired steam electric generating units includes units burning coal, oil, and

natural gas.<sup>26</sup> Similarly, the existing category for stationary combustion turbines includes units burning natural gas and those burning oil.<sup>27</sup> Furthermore, each combined-cycle natural gas plant includes a steam-generating unit and thus could be included in the steam generating category as well as the combustion turbine category. While it may have been the case in the past that coal-fired plants and gas-fired units tended to provide different services (base load versus peaking generation), now both types of plants compete to produce the same generation services. In short, they produce the same product and perform the same function in an integrated marketplace.

The EPA’s historical practice and court decisions emphasize the agency’s discretion in grouping sources when establishing performance standards under Section 111. The EPA has set, and courts have upheld, uniform standards for plants that produce the same product or perform the same function, even when they use different technologies or inputs and have different emission reduction capabilities. For example, in the 1976 new source performance standard for copper smelters, the EPA explained that it could set a “single standard [that] would effectively preclude using a process which is much less expensive than the permitted process” so long as the total cost of the standard was reasonable.<sup>28</sup> The D.C. Circuit upheld standards for Portland cement kilns that adopted uniform NO<sub>x</sub> limits despite concluding that older kiln designs would face greater costs in meeting this standard *Portland Cement Association v. EPA*, 665 F.3d 177, 190 (D.C. Cir. 2011). The D.C. Circuit also upheld EPA’s uniform fuel-neutral NO<sub>x</sub> standard for all new fossil-fired EGUs set in 1998.<sup>29</sup> *Lignite Energy Council v. U.S. EPA* (198 F.3d 930, 933 (D.C. Cir. 1999)). In short, the statute does not entitle a source using a lagging or outmoded process—one that is inherently more polluting than another, or one that can meet a given emission level only at higher cost than another—to a weakened standard.

To be sure, Section 111(b)(2) states that the EPA “may distinguish among classes, types, and sizes within categories of new sources”—in other words, the agency may create subcategories where appropriate. Indeed, that is what the EPA has proposed to do for new power plants in the September 2013 proposal, which would establish three subcategories—larger gas-fired plants, smaller gas-fired plants, and coal-fired plants—each of which has its own BSER and its own performance standard.<sup>30</sup>

At the same time, the EPA has proposed the option of grouping the three subcategories into one overall category and has asked for comments on whether that “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.”<sup>31</sup>

NRDC's system-based proposal for existing power plants would apply, on a state-by-state basis, to the category consisting of all CO<sub>2</sub>-emitting power plants, regardless of their fuel. The NRDC proposal also subcategorizes by including different nominal standards for existing coal- and gas-fired plants. These nominal standards are blended together on the basis of each state's ratio of coal and gas generation in the baseline years (2008–10) to yield the emission rate standards for each state in 2020 and 2025. And as described above, plants have a system-wide range of compliance options both within and beyond the fenceline.

Nothing in Section 111 precludes these groupings and subgroupings, for either new or existing plants. Indeed, any other option for existing fossil-fueled EGUs would be unlawfully arbitrary and capricious, because it would not achieve the greatest emission reduction that is technologically and economically achievable.

## **7. MAY THE EPA'S EMISSIONS GUIDELINE REQUIRE DIFFERENT STANDARDS OF PERFORMANCE FROM STATE TO STATE?**

Yes. Section 111(d) calls for implementing existing source standards on a state-by-state basis. A "satisfactory" approvable state plan needs to contain standards of performance that meet the statutory requirement to obtain the emission reductions that are "achievable" using "the best system of emission reduction" that is "adequately demonstrated," "taking into account the cost."

Some kinds of industrial sources are sufficiently uniform that the same emissions limit meets these statutory criteria for the existing sources in any state. But given the different makeup of existing power generating systems from state to state, it is reasonable under these statutory criteria for the EPA's emissions guideline to specify different standards of performance from state to state, using a consistent methodology.

NRDC's proposal reflects these state-to-state differences by assigning each state specific emission standards for 2020 and 2025 based on the proportion of coal- and gas-fired generation in that state in the baseline period (2008–10). Undoubtedly, other stakeholders will want to explore variants of this approach or to bring other factors into the equation. To preserve both equity among the states and an administrable program, however, it is important that the EPA avoid random or case-by-case differentiation. The EPA needs to use an objective and transparent formula, based on consistent criteria, to differentiate the standards applicable from state to state, a formula that is consistent with the statutory objective of delivering the most CO<sub>2</sub> emission reduction from the power sector that is achievable at reasonable cost.

## **8. HOW DOES A SYSTEM-BASED STANDARD TAKE INTO ACCOUNT "REMAINING USEFUL LIFE"?**

Section 111(d)(1) states that the EPA's regulations "shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies." Section 111(d)(2) states that if the EPA establishes a federal plan for a state, then the EPA shall take into account remaining useful life.

The "remaining useful life" provision signals Congress's intent that the performance standards adopted under Section 111(b) for new sources might need to be modified when applied to existing sources. But the statute provides no definition of "remaining useful life" and no specific directions on how it should be considered.

The EPA's 1975 regulations provide that states may include in their plans a variance procedure that includes consideration of a source's age or other characteristics that lead to high compliance costs.<sup>32</sup> A source-by-source variance procedure may be a logical way to address "remaining useful life" when the EPA sets uniform standards that must be met within the fenceline. Variances can deal with sources that, by reason of age or other factors, have disproportionately high compliance costs meeting a uniform standard designed for plants more able to comply.

A variance procedure, however, is not necessary or appropriate in a system-based approach. A system-based standard gives each power plant the ability to comply either by making reductions at the source or by using credits from beyond-the-fenceline measures (e.g., shifting dispatch to low- or zero-emitting generators or achieving demand-side energy savings). A system-based approach takes into account the considerations underlying "remaining useful life" by smoothing out plant-to-plant differences in the cost of making emission rate reductions. When a standard is structured so that all plants face the same marginal costs to make emission rate reductions, there is no disparity that calls for variances.

Indeed, a variance provision would inherently conflict with a system-based emissions guideline, because it would give some sources a "second bite at the apple" for feasibility and cost factors that the EPA already took into account in when setting the emissions guideline and determining the appropriate level of the standard. For this reason, including a variance provision in a system-based standard would violate the statutory command to achieve the most emission reductions that are technologically and economically achievable.<sup>33</sup>



The EPA's 1975 regulations expressly state that the agency may amend or drop the variance provisions when establishing the guideline document for a particular category.<sup>34</sup> For the reasons given here, the EPA should not include a variance provision in the emissions guideline establishing a system-based standard for existing power plants.

## 9. WHAT CRITERIA SHOULD THE EPA SET FOR APPROVING ALTERNATIVE STATE PLANS?

The EPA's emission guideline should set out both a model approach that states may choose to adopt, and equivalency criteria to guide states that wish to design alternative approaches based on existing programs or other specific circumstances.

NRDC's system-based proposal recommends rate-based standards, in pounds of CO<sub>2</sub> per megawatt-hour, differentiated by state to reflect the states' different generation mixes in a baseline period. The proposal includes a wide range of system-based flexibility for states and sources to employ, both within the fenceline and beyond the fenceline, to meet the standards at lowest cost.

NRDC's proposal also recognizes that a number of states will want additional flexibility to pursue different but equally effective implementation approaches. California and the states in the Regional Greenhouse Gas Initiative (RGGI), for example, want to use existing cap-and-trade programs to meet their Section 111(d) responsibilities. Other states may propose other approaches.

To meet these needs, NRDC's proposal allows states to submit alternative plans, together with a demonstration that such a plan would limit power sector CO<sub>2</sub> emissions to an amount equal to or less than the level that would result from following the model plan. Specifically, NRDC recommends that the EPA's emissions guideline include a methodology for converting a state's rate-based standard into tonnage targets for 2020 and subsequent years. This benchmark tonnage would be calculated by multiplying the state's emission rate standard times the megawatt-hours of electricity service demand forecast for that state in the compliance years.<sup>35</sup> If the RGGI states, for example, demonstrate that their power sector emissions cap is equal to or less than the benchmark tonnage, the EPA would approve their program as a satisfactory alternative plan.

The emissions guideline should provide for considering other alternative plan designs, in addition to a cap-and-trade program, that demonstrate emissions equivalence. Any approvable alternative plan must include legally enforceable obligations on the part of the state's fossil fuel-fired EGUs that will ensure emissions goals are met.

## 10. SHOULD THE EPA ESTABLISH "STANDBY" FEDERAL PLANS?

Yes. To assure that the Climate Action Plan's schedule is met and that urgently needed emission reductions are not delayed, NRDC recommends that the EPA propose and promulgate "standby" federal plans simultaneously with the emissions guideline. The standby federal plans would implement the model standards of performance set forth in the guideline—a system-based, state-specific emission rate—in particular states. These standby plans would have no effect in states that submit timely and approvable plans. The applicable standby plan would come into effect promptly, however, in a state that does not.

The Climate Action Plan sets a 2020 target of cutting national global warming pollution 17 percent from 2005 levels. Because power plants are the nation's biggest carbon polluter—responsible for 40 percent of U.S. CO<sub>2</sub> emissions and one-third of total U.S. emissions of heat-trapping pollutants—they play a central role in the success of the plan. The president's memorandum sets a schedule for states to submit their Section 111(d) plans to the EPA by the end of June 2016, 13 months after the EPA issues its final emissions guideline. The EPA's existing regulations provide for the agency to approve or disapprove plans within four months of the June 2016 submission date and, where required, to promulgate a federal plan under Section 111(d)(2) within six months of that date. 40 CFR 60.27(b), (c).

Standby federal plans would never come into effect in a state that submits a timely and approvable state plan. Thus, the standby plans would not inhibit states from taking the lead in developing their own state plans or from deciding whether to adopt the model standards set forth in the guideline or alternative plans that achieves equal or better emission reduction levels. The standby plans would assure, however, that the reductions in power sector carbon pollution achievable by 2020 are not delayed if a state does not submit an approvable plan.

There is ample precedent for this approach. For example, in 2005 the EPA issued "backstop" federal implementation plans (FIPs) in advance of the final Clean Air Interstate Rule (CAIR) to reduce interstate transport of smog-causing pollution.<sup>36</sup> As the EPA said then:

Having the FIP in place early provides for a transition to a CAIR trading program with the greatest continuity, administrative ease, and cost savings for States that would otherwise develop a program identical to the model trading programs. The EPA's goal is to have approvable programs in place that meet the requirements of the CAIR whether they are in the form of a SIP or a FIP. By finalizing a FIP today, EPA would in no way preclude a State from developing its own SIP to either adopt the trading rule with any discretionary elements allowed by the CAIR, or to meeting the State emissions budget through different measures of the State's choosing.<sup>37</sup>

As in the CAIR rule, the standby federal plan for power plant carbon pollution would come into play only after states had the opportunity to develop their own plans, and would leave states total flexibility whether to follow the emissions guideline's model or adopt an equivalent alternative plan.<sup>38</sup>

## CONCLUSION

The EPA has the legal authority and discretion to adopt a system-based approach to setting carbon pollution standards for existing power plants under Section 111(d) of the Clean Air Act. Performance standards encouraging the full array of measures that have the potential to reduce carbon pollution from the electricity system will achieve the greatest emission reductions at the lowest cost. Such a system-based approach represents the *best system of emission reductions that has been adequately demonstrated* and is therefore required under the Clean Air Act.

## Endnotes

1 *The President's Climate Action Plan* (June 25, 2013), [www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf](http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf).

2 *Power Sector Carbon Pollution Standards*, presidential memorandum, June 25, 2013, [www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards](http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards).

3 *Remarks by the President on Climate Change*, Georgetown University, Washington, D.C. (June 25, 2013), [www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change](http://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change).

4 *Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units*, Environmental Protection Agency (EPA), proposed rule, [www2.epa.gov/sites/production/files/2013-09/documents/20130920proposal.pdf](http://www2.epa.gov/sites/production/files/2013-09/documents/20130920proposal.pdf).

5 *Clean Air Act and Upcoming Carbon Pollution Guidelines for Existing Power Plants*, EPA, [www2.epa.gov/carbon-pollution-standards/what-epa-doing](http://www2.epa.gov/carbon-pollution-standards/what-epa-doing).

6 *Questions for State Partners*, EPA, [www2.epa.gov/carbon-pollution-standards/questions-state-partners](http://www2.epa.gov/carbon-pollution-standards/questions-state-partners).

7 EPA, Carbon Pollution Standards: Public Listening Sessions, [www2.epa.gov/carbon-pollution-standards/public-listening-sessions](http://www2.epa.gov/carbon-pollution-standards/public-listening-sessions).

8 Lashof et al., *Closing the Power Plant Carbon Loophole: Smart Ways the Clean Air Act Can Clean Up America's Biggest Climate Polluters*, Natural Resources Defense Council (March 2013), [www.nrdc.org/air/pollution-standards/files/pollution-standards-report.pdf](http://www.nrdc.org/air/pollution-standards/files/pollution-standards-report.pdf).

9 Lashof et al., *supra* note 8, at p. 7-12, for further background on Section 111.

10 74 Fed. Reg. 66,496 (December 9, 2009). The endangerment determination was upheld in *Coalition for Responsible Regulation v. EPA*, 684 F.3d 102 (D.C. Cir. 2012). On October 15, 2013, the Supreme Court denied industry and state petitions for review of the endangerment determination. The Court refused pleas to reconsider its prior decisions in *Massachusetts v. EPA*, 549 U.S. 497 (2007) and *American Electric Power v. Connecticut*, 131 S.Ct. 2527 (2011) upholding EPA's authority to set standards for both vehicles and power plants. The Court agreed to hear a narrow question concerning Clean Air Act permitting requirements not pertinent here. See Doniger, *Supreme Court Rejects Challenges to Climate Science and EPA Carbon Pollution Standards*, [http://switchboard.nrdc.org/blogs/ddoniger/supreme\\_court\\_rejects\\_challeng.html](http://switchboard.nrdc.org/blogs/ddoniger/supreme_court_rejects_challeng.html), and Doniger, *Carbon Pollution Standards and Permits: What's the Difference? Let Me Explain...*, [http://switchboard.nrdc.org/blogs/ddoniger/carbon\\_pollution\\_standards\\_and.html](http://switchboard.nrdc.org/blogs/ddoniger/carbon_pollution_standards_and.html).

11 *Supra* note 4.

12 Section 111(d) applies to power plants' CO<sub>2</sub> emissions because those emissions are not covered by other provisions—Sections 109 and 110 (national ambient air quality standards and state implementation plans for criteria air pollutants) or Section 112 (national emission standards for hazardous air pollutants).

13 *Supra* note 5.

14 EPA's 1975 "emissions guideline" regulations were not challenged in court. Subsequent Congresses legislated in reliance on them. Section 129(a)(1)(A) of the Clean Air Act, adopted in 1990, instructs EPA to regulate existing municipal waste combustors under Section 111(d), saying, "Such standards shall include emissions limitations and other requirements applicable to new units and guidelines (under section 111(d) of this title and this section) and other requirements applicable to existing units." The House committee report on the 1977 amendments to the Clean Air Act stated approvingly that under Section 111(d), "[t]he Administrator would establish guidelines as to what the best system for each such category of existing sources is." H.R. Rep. No. 95-294, at 195 (1977). In *American Electric Power v. Connecticut*, the Supreme Court observed that "[f]or existing sources, EPA issues emissions guidelines, see 40 C.F.R. § 60.22, .23 (2009); in compliance with those guidelines and subject to federal oversight, the States then issue performance standards for stationary sources within their jurisdiction." 131 S.Ct. 2527, 2537-38 (2011).

15 *Supra* note 5.

16 A design or work practice standard is allowed under Section 111(h) only if emissions cannot feasibly be routed through a stack or quantitatively measured.

17 Some earlier standards of performance for EGUs were set in the form of emissions per unit of input (e.g., pounds per million Btu heat input), but it is generally agreed now that output-based standards provide better incentives for generating electricity efficiently.

18 In 2005, EPA issued a Section 111(d) standard for mercury in the form of a mass-based cap-and-trade program. The mercury program was struck down in *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008), but only because utility mercury emissions were slated for regulation under Section 112 (the hazardous air pollutants provisions) and EPA had not justified removing them from Section 112. The court did not address the legality of using a cap-and-trade program design for a pollutant properly regulated under Section 111(d). For the argument that EPA may set mass-based standards under Section 111(d), see William F. Pedersen, *Should EPA Use Emissions Averaging or Cap and Trade to Implement § 111(d) of the Clean Air Act?*, 43 ELR 10731 (September 2013), [www.eli.org/pdf/seminars/09.17.13dc/ELR-Pedersen.pdf](http://www.eli.org/pdf/seminars/09.17.13dc/ELR-Pedersen.pdf).

19 40 CFR 60.33b(d)(1). Section 129 of the Act directed EPA to regulate all emissions from existing MWCs under Section 111(d) and overrode the ordinary limitation that Section 111(d) does not apply to National Ambient Air Quality Standards or hazardous air pollutants, so as to include NO<sub>x</sub> in combustors' regulated emissions. But the substantive standard-setting criteria for MWC standards, and thus the authority for NO<sub>x</sub> emission credit trading, are found in Section 111(d).

20 In 2011, 1,596 power plant facilities emitting at least 25,000 metric tons per year of greenhouse gases—predominantly CO<sub>2</sub>—reported their emissions pursuant to EPA's Greenhouse Gas Reporting Program, [ghgdata.epa.gov/ghgp/main.do](http://ghgdata.epa.gov/ghgp/main.do).

21 Some contend that Section 302(l)—which defines "standard of performance" for general purposes of the Act and includes the phrase "continuous emission reduction"—creates a within-the-fenceline limitation. It does not. First, Section 111 contains its own specific definition of "standard of performance" that applies "[f]or the purposes of this section," and as result the general definition in Section 302(l) very likely does not apply. Second, the phrase "continuous emission reduction" was never intended to outlaw a system-based approach. Instead, it was intended to prohibit so-called "intermittent" control

standards, an unreliable approach under which emission standards were applicable only during episodes of bad air quality. In contrast, under system-based standards a CO<sub>2</sub>-emitting power plant would be responsible for complying with an emission limit for every MWh it generated.

22 NRDC's Section 111(d) report discusses technical issues involved in establishing eligibility and verification systems for crediting energy efficiency measures. See Lashof et al., *supra* note 8, chapter 4.

23 See, e.g., *Portland Cement Association v. Ruckelshaus*, 486 F.2d 375, 396 (D.C. Cir. 1973) (measurements relied on to demonstrate achievability may have "deviate[d] from procedures, outlined by regulation, for ascertaining compliance with prescribed standards").

24 Standards under Section 111 do not have to be set at levels that all existing power plants can meet. This is well established for new sources subject to standards under Section 111(b). See, e.g., *Portland Cement*, 488 F.2d at 391. While there are no cases addressing standards for existing sources under Section 111(d), the Supreme Court ruled in analogous circumstances under the Clean Water Act that the costs of an existing source standard are reasonable even if they lead some sources to curtail operations or close. See *EPA v. National Crushed Stone Association*, 449 U.S. 64, 76 (1980) (Clean Water Act "contemplated regulations that would require a substantial number of point sources with the poorest performances either to conform to [best practicable technology] standards or to cease production").

25 See, e.g., National Climate Coalition, *Using EPA Clean Air Act Authority to Build a Federal Framework for State Greenhouse Gas Reduction Programs*, at 3, [www.eli.org/pdf/seminars/09.17.13dc/NCCNarrative.pdf](http://www.eli.org/pdf/seminars/09.17.13dc/NCCNarrative.pdf).

26 40 CFR Subpart Da.

27 40 CFR Subpart KKKK.

28 41 Fed. Reg. 2332, 2333-2334 (Jan. 15, 1976).

29 63 Fed. Reg. 49,442, 49,445 (Sept. 16, 1998).

30 Likewise, NRDC's proposal for existing source standards includes different nominal standards for existing coal- and gas-fired plants. These nominal standards are blended together to yield the 2020 and 2025 emission rate standards for each state based on each state's ratio of coal and gas generation in the baseline years 2008-10.

31 [www2.epa.gov/sites/production/files/2013-09/documents/20130920proposal.pdf](http://www2.epa.gov/sites/production/files/2013-09/documents/20130920proposal.pdf), at 130 (proposing a category consisting of both coal-fired and gas-fired power plants to be codified as Subpart TTTT).

32 40 CFR 24 provides:

(f) Unless otherwise specified in the applicable subpart on a case-by-case basis for particular designated facilities or classes of facilities, States may provide for the application of less stringent emissions standards or longer compliance schedules than those otherwise required by paragraph (c) of this section, provided that the State demonstrates with respect to each such facility (or class of facilities):

- (1) Unreasonable cost of control resulting from plant age, location, or basic process design;
- (2) Physical impossibility of installing necessary control equipment; or
- (3) Other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable.

33 It would have the same legal flaw as basing a standard on within-the-fenceline measures only, but allowing EGUs to comply on a broader system-wide basis.

34 The opening words of 40 CFR 60.24(f), quoted in note 32, expressly contemplate the possibility of changing the variance provision when setting particular future standards: "Unless otherwise specified in the applicable subpart on a case-by-case basis for particular designated facilities or classes of facilities...." Of course, EPA would have the authority to change the existing regulation, after notice and comment, even if that regulation did not specifically so provide.

35 The "electricity service demand" forecast would represent the number of megawatt-hours of electricity expected to be generated in the state in the absence of implementing additional energy efficiency programs after the baseline period. Actual generation could be lower due to energy efficiency measures implemented as part of the state's compliance plan.

36 70 Fed. Reg. 49,708 (August 24, 2005).

37 *Ibid.* at 49,720.

38 Contrary to the panel decision in *EME Homer City*, 696 F.3d 7 (D.C. Cir. 2012), EPA followed the same approach in the Cross State Air Pollution Rule, promulgating FIPs only after finding that certain upwind states had failed to submit approvable plans to curb their significant contribution to downwind states' pollution levels. The Supreme Court has agreed to review the panel decision this term. *EPA v. EME Homer City Generation*, 133 S.Ct. 2857 (cert. granted, June 24, 2013).





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